

Grade 3

Unit 2 | Teacher Guide

Scales, Feathers, and Fur: Animal Classification

Grade 3

Unit 2

Scales, Feathers, and Fur: Animal Classification

Teacher Guide

Notice and Disclaimer: The agency has developed these learning resources as a contingency option for school districts. These are optional resources intended to assist in the delivery of instructional materials in this time of public health crisis. Feedback will be gathered from educators and organizations across the state and will inform the continuous improvement of subsequent units and editions. School districts and charter schools retain the responsibility to educate their students and should consult with their legal counsel regarding compliance with applicable legal and constitutional requirements and prohibitions.

Given the timeline for development, errors are to be expected. If you find an error, please email us at **texashomelearning@tea.texas.gov**.

ISBN 978-1-68391-960-5

This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

You are free:

to Share—to copy, distribute, and transmit the work

to Remix—to adapt the work

Under the following conditions:

Attribution—You must attribute any adaptations of the work in the following manner:

This work is based on original works of Amplify Education, Inc. (amplify.com) and the Core Knowledge Foundation (coreknowledge.org) made available under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License. This does not in any way imply endorsement by those authors of this work.

Noncommercial—You may not use this work for commercial purposes.

Share Alike—If you alter, transform, or build upon this work, you may distribute the resulting work only under the same or similar license to this one.

With the understanding that:

For any reuse or distribution, you must make clear to others the license terms of this work. The best way to do this is with a link to this web page:

<https://creativecommons.org/licenses/by-nc-sa/4.0/>

© 2020 Amplify Education, Inc.
amplify.com

Trademarks and trade names are shown in this book strictly for illustrative and educational purposes and are the property of their respective owners. References herein should not be regarded as affecting the validity of said trademarks and trade names.

Printed in Mexico
01 XXX 2021

Contents

SCALES, FEATHERS, AND FUR: ANIMAL CLASSIFICATION

Introduction **1**

Lesson 1 Animal Researchers (Meet Rattenborough) **8**

Core Connection (35 min.)

- Introducing the Unit
- Virtual Field Trip

Reading (45 min.)

- Introducing the Reading
- Presenting the Reading
- Discussing the Reading

Writing (15 min.)

- Field Journal

Language (25 min.)

- Introducing the Root Words
- Adding Suffixes *-ed* and *-ing*

Lesson 2 Classifying Animals **26**

Reading (45 min.)

- Reviewing Text Features
- Introducing the Reading
- Whole Group Reading
- Discussing the Reading

Speaking and Listening (50 min.)

- Introducing the Read-Aloud
- Presenting the Read-Aloud
- Discussing the Read-Aloud
- Word Work: *Classify*

Language (25 min.)

- Nouns, Verbs, and Adjectives

Lesson 3 Vertebrate or Invertebrate? **52**

Reading (50 min.)

- Introducing the Reading
- Whole Group Reading
- Discussing the Reading

Speaking and Listening (55 min.)

- Introducing the Read-Aloud
- Presenting the Read-Aloud
- Discussing the Read-Aloud

Language (15 min.)

- Nouns, Verbs, and Adjectives
- Spelling: Blank Busters

Lesson 4 Warm- or Cold-Blooded? **74**

Speaking and Listening (45 min.)

- Introducing the Read-Aloud
- Presenting the Read-Aloud
- Discussing the Read-Aloud
- Word Work: *Constant*

Reading (30 min.)

- Introducing the Reading
- Presenting the Reading
- Discussing the Reading

Writing (15 min.)

- Field Journal

Language (30 min.)

- Morphology
- Spelling

Lesson 5 Fins and Gills

98

Language (20 min.) <ul style="list-style-type: none">Spelling Assessment	Reading (40 min.) <ul style="list-style-type: none">Introducing the ReadingSmall Group ReadingDiscussing the Reading	Speaking and Listening (55 min.) <ul style="list-style-type: none">Introducing the Read-AloudPresenting the Read-AloudDiscussing the Read-AloudWord Work: <i>Aquatic</i>Partner Presentations	Language (5 min.) <ul style="list-style-type: none">Parts of Speech
---	---	--	--

Lesson 6 From Water to Land

126

Speaking and Listening (35 min.) <ul style="list-style-type: none">Introducing the Read-AloudPresenting the Read-AloudDiscussing the Read-Aloud	Reading (45 min.) <ul style="list-style-type: none">Introducing the ReadingIndependent ReadingDiscussing the Reading	Language (40 min.) <ul style="list-style-type: none">Produce Compound SentencesSpelling
--	---	---

Lesson 7 Frogs

152

Reading (40 min.) <ul style="list-style-type: none">Frog Scavenger HuntIntroducing the Reading	Speaking and Listening (50 min.) <ul style="list-style-type: none">Introducing the Read-AloudPresenting the Read-AloudCompare and Contrast TextsPoison Dart Frog	Writing (30 min.) <ul style="list-style-type: none">Field JournalAnimal Foldable
--	--	--

Pausing Point 1

170

Lesson 8 Cold-Blooded Scaly Vertebrates

178

Speaking and Listening (80 min.) <ul style="list-style-type: none">Introducing the Read-AloudPresenting the Read-AloudDiscussing the Read-AloudWord Work: <i>Effectively</i>	Writing (15 min.) <ul style="list-style-type: none">Field Journal	Language (25 min.) <ul style="list-style-type: none">Introducing Prefixes <i>re-</i> and <i>pre-</i>Spelling
--	--	--

Lesson 9 Reptiles

198

Reading (85 min.) <ul style="list-style-type: none">Introducing the ReadingWhole Group First ReadingDiscussing the ReadingWhole Group Second ReadingDiscussing the ReadingWriting: Reptile Web	Writing (15 min.) <ul style="list-style-type: none">Animal Foldable	Language (20 min.) <ul style="list-style-type: none">Spelling: Blank Busters
--	--	---

Lesson 10 **Wings and Feathers, Part 1**

214

Language (20 min.) <ul style="list-style-type: none">• Spelling Assessment	Speaking and Listening (80 min.) <ul style="list-style-type: none">• Introducing the Read-Aloud• Presenting the Read-Aloud• Discussing the Read-Aloud• Word Work: <i>Metabolism</i>	Writing (20 min.) <ul style="list-style-type: none">• Bird Web• Field Journal
---	---	---

Lesson 11 **Wings and Feathers, Part 2**

234

Language (20 min.) <ul style="list-style-type: none">• Introduce Spelling Words	Reading (40 min.) <ul style="list-style-type: none">• Introducing the Reading• Partner Reading• Discussing the Reading	Writing (40 min.) <ul style="list-style-type: none">• Animal Classification Foldable• Field Journal	Language (20 min.) <ul style="list-style-type: none">• Abstract Nouns
--	---	---	--

Lesson 12 **Live-Bearing Milk Producers**

250

Speaking and Listening (55 min.) <ul style="list-style-type: none">• Introducing the Read-Aloud• Presenting the Read-Aloud• Discussing the Read-Aloud• Word Work: <i>Stately</i>• Sayings and Phrases	Reading (30 min.) <ul style="list-style-type: none">• Introducing the Reading• Small Group Reading• Discussing the Reading	Writing (20 min.) <ul style="list-style-type: none">• Mammal Web	Language (15 min.) <ul style="list-style-type: none">• Grammar Review
--	---	---	--

Lesson 13 **Jane Goodall**

272

Speaking and Listening (50 min.) <ul style="list-style-type: none">• Introducing Jane Goodall• Discussing the Video Clip	Reading (40 min.) <ul style="list-style-type: none">• Introducing the Reading• Whole Group Reading• Discussing the Reading	Writing (30 min.) <ul style="list-style-type: none">• An Informational Paragraph
--	---	---

Lesson 14 **“Scientists Who Classify Animals” and “Vertebrates around the World”** 284

Reading (35 min.) <ul style="list-style-type: none">• Introducing the Reading• Independent Reading• Discussing the Reading	Speaking and Listening (40 min.) <ul style="list-style-type: none">• Introducing the Read-Aloud• Presenting the Read-Aloud	Writing (45 min.) <ul style="list-style-type: none">• Revising an Informational Paragraph
---	--	--

Pausing Point 2

304

Lesson 15 Unit Assessment

<p>Language (25 min.)</p> <ul style="list-style-type: none">• Spelling Assessment	<p>Reading (50 min.)</p> <ul style="list-style-type: none">• Student Skills Assessment	<p>Reading (20 min.)</p> <ul style="list-style-type: none">• Small Group: Remediation	<p>Foundational Skills (25 min.)</p> <ul style="list-style-type: none">• Optional Fluency Assessment: "Piranhas"
--	---	--	---

Teacher Resources

Introduction

SCALES, FEATHERS, AND FUR: ANIMAL CLASSIFICATION

This introduction includes the necessary background information to teach the Animal Classification unit. This unit contains 15 daily lessons, plus two Pausing Point days that may be used for differentiated instruction. Each lesson will require a total of 120 minutes. Lesson 15 contains the Unit Assessment.

As noted, two days are intended to be used as Pausing Point days. These Pausing Points are embedded into the instruction at appropriate points, with the first one after Lesson 7 and the second after Lesson 14. You may choose to continue to the next lesson and schedule the first Pausing Point for another day in the unit sequence. Pausing Points can be used to focus on content understanding, writing, spelling, grammar, morphology skills, or fluency.

SKILLS

Reading

The Reader for Unit 2 is entitled *Rattenborough's Guide to Animals*. Although it is a nonfiction reader, Rattenborough, a fictional character, is the narrator that guides students through the factual information to make the text more accessible to students. Students who received instruction from this program in Grade 1 will likely remember Rattenborough as the narrator for the *Animals and Habitats* domain.

This Reader consists of selections that explain how scientists classify animals. Students will learn about the characteristics of living things and how scientists classify living things using these characteristics. Students will take home text copies of the chapters in the Reader throughout the unit. Encouraging students to read a text directly related to this domain-based unit will provide content and vocabulary reinforcement, along with fluency practice.

Spelling

During the spelling portion of the lessons, students will review adding suffixes such as *-ed*, *-ing*, and *-es*, as well as whether to double the final consonant when adding the suffixes. Challenge Words will be added to each spelling list. Students will review alphabetizing to the second and third letter in preparation for learning dictionary skills.

Grammar

In grammar, students will review nouns, verbs, adjectives, subjects, predicates, fragments, and run-on sentences. Students will also be introduced to abstract nouns and discover the difference between concrete and abstract nouns in sentences. Students will write compound sentences by adding subjects and predicates to simple sentences.

Morphology

During the morphology portion of the lessons, students will learn the prefixes *un-*, *non-*, *re-*, and *pre-*. Students will discuss how adding prefixes changes the meaning of root words and how the parts of speech of words may change. Students will have opportunities to apply their knowledge of these words during oral and workbook activities.

WHY ANIMAL CLASSIFICATION IS IMPORTANT

This unit introduces students to the science of classification. Students will learn about five groups of vertebrates, why scientists classify animals into groups, and the characteristics by which they make these determinations. The ability to classify information is an essential skill of organizing, analyzing, and understanding data. Students will develop scientific skills as they observe and practice identifying important characteristics of organisms and objects.

In this unit, students will be asked to engage in structured inquiry discussions and exercises. During these activities, students will be asked to respond based on their observations and thinking. By asking questions such as “How do you know?” and “Why do you think so?” the teacher will guide students in making reasonable statements based on what students already know and the evidence they can observe.

The content students learn in this unit will serve as the basis for more in-depth study in the later grades of how living things are classified, the life cycles and reproduction of animals, oceans and marine life, and evolution.

The Animal Classification unit also provides opportunities for students to build content knowledge and draw connections to social studies and science subject areas but does not explicitly teach the Texas Essential Knowledge and Skills standards for Social Studies and Science. At times throughout the unit, you may wish to build on class discussions to support students in making cross-curricular connections to the strands of Social studies skills from the social studies discipline and Organisms and environments and Scientific Investigation and reasoning from the science discipline.

Prior Knowledge

Students who have received instruction in this program in Grades K–2 will already have pertinent background knowledge for this unit. For students who have not received prior instruction in this program, introductory knowledge is addressed at the beginning of each unit.

Farms (Kindergarten)

- Identify animals found on farms and the sounds they make.
- Identify needs of farm animals: food, water, and space to live and grow.
- Match pictures and/or names of farm animal babies to their adult parents.
- Describe how farm animal babies need to be fed and cared for by their parents or people.

Animals and Habitats (Grade 1)

- Describe what a habitat is.
- Explain why living things live in habitats to which they are particularly suited.
- Classify water habitats as either freshwater or saltwater habitats.
- Identify the characteristics of the freshwater habitat.
- Classify animals on the basis of the types of food they eat (herbivore, carnivore, omnivore).
- Describe ocean life as very diverse.
- Explain that the salt water in the oceans covers most of the Earth’s surface.

Cycles in Nature (Grade 2)

- Explain that a cycle is a sequence of events that repeats itself again and again.
- Describe animal processes in spring, summer, autumn (fall), and winter.
- Define the term *life cycle*.
- Identify the stages of the life cycle of a butterfly (egg to egg).
- Explain metamorphosis.
- Identify the stages of the life cycle of a frog (egg to egg).
- Identify the stages of the life cycle of a chicken (egg to egg).

Insects (Grade 2)

- Explain that insects are the largest group of animals on Earth.
- Describe some newborn insects as resembling the adults of their species.

WRITING

Students have many opportunities to write in a variety of ways and for different purposes. The formal writing piece for the Animal Classification unit is a short, informational writing piece that focuses on organizing and communicating characteristics and classification of one specific vertebrate. Students learn to introduce a topic, group related information together, and provide supporting ideas, facts, and details. The project can be done with or without the use of technology, but having students use computers to research, write, and publish their projects is highly recommended.

Everyday writing opportunities come in many forms, including short and extended responses requiring evidence from the text. Students will also use graphic organizers to gather and categorize information from reading or from the Read-Aloud, or to plan for writing. Many lessons provide opportunities for students to collaborate, share ideas, and give feedback on their writing.

PERFORMANCE TASKS AND ASSESSMENTS

The Primary Focus objectives in each lesson are carefully structured and sequenced throughout the unit to help build student understanding. Additionally, formative assessments are provided to help keep track of their progress toward objectives and standards. These can be found in the Student Activity Book and are referenced in every lesson.

While some units in Grade 3 have extended Performance Task assessments, Animal Classification has a Unit Assessment covering the content of the unit, reading objectives taught throughout the unit, and grammar and morphology assessments.

FLUENCY SUPPLEMENT

A separate component, the Fluency Supplement, is available for download on the Amplify website. This component was created to accompany the program materials for Grade 3. It consists of selections from a variety of genres, including poetry, folklore, and fables. These selections provide additional opportunities for students to practice reading with fluency and expression (prosody). For more information on implementation, please consult the supplement.

INSTRUCTIONAL COMPONENTS

Teacher Resources

At the back of this Teacher Guide, you will find a section titled “Teacher Resources.” In this section you will find the following:

- Glossary
- Activity Book Answer Key

Digital Resources

In the Advance Preparation section of each lesson, you will be directed to prepare to project images associated with the Read-Aloud portion of the lesson. These can be found on the program’s digital components site.

ACADEMIC AND CORE VOCABULARY

Lesson 1

- carnivore
- habitat
- herbivore
- omnivore

Lesson 2

- kingdom
- life cycle
- adapt
- characteristic
- classify
- vertebrates
- invertebrates

Lesson 3

- spine
- column
- exoskeleton
- nerves

Lesson 4

- cold-blooded
- constant
- huddle
- internal
- warm-blooded
- mammal
- reptile
- scale
- temperature

Lesson 5

- oxygen
- gill
- fin
- school
- migrate
- aquatic
- scale

Lesson 6

- amphibian
- shed
- transformation
- hibernate
- survive
- tadpole

Lesson 7

- suction cup
- nocturnal
- climate
- orchestra
- secrete

Lesson 8

- calcified
- sensitive
- venomous
- reptile

Lesson 9

- poisonous
- inject
- venom
- molt

Lesson 10

- cavity
- glide
- insulation
- nest

Lesson 11

- flock
- plumage
- nectar
- attract

Lesson 12

- diaphragm
- mammary glands
- marine
- stately
- communicate
- language
- sonar
- predator

Lesson 13

- primatologist
- primate
- behavior
- intelligent
- activist

Lesson 14

- zoologist
- observe
- delta
- reproduction

1

Animal Researchers (Meet Rattenborough)

PRIMARY FOCUS OF LESSON

Core Connection

- Students will observe and describe basic characteristics of animals at the zoo and record observations on a graphic organizer. **TEKS 3.13.C**

Reading

- Students will define and identify text features in the Reader. **TEKS 3.9.D.ii; TEKS 3.10.C**

Writing

- Students will also write a short reflection on their experiences as animal researchers. **TEKS 3.7.A**

Language

- Students will use conventional spelling when adding suffixes *-ed* and *-ing* to root words. **TEKS 3.2.A.vi; TEKS 3.2.B.vii**

FORMATIVE ASSESSMENT

- Activity Page 1.2** **Animal Webcam Observations** Record animal observations and characteristics. **TEKS 3.13.C**
- Activity Page 1.4** **Text Feature Project Hunt** Identify text features in the Reader. **TEKS 3.9.D.ii**
- Activity Page 1.5** **Field Journal** Explain what you liked and disliked about being an animal researcher. **TEKS 3.7.A**

- TEKS 3.13.C** Identify and gather relevant information from a variety of sources; **TEKS 3.9.D.ii** Recognize characteristics and structures of informational text, including: features such as sections, tables, graphs, timelines, bullets, numbers, and bold and italicized font to support understanding; **TEKS 3.10.C** Explain the author's use of print and graphic features to achieve specific purposes; **TEKS 3.7.A** Describe personal connections to a variety of sources, including self-selected texts; **TEKS 3.2.A.vi** Demonstrate and apply phonetic knowledge by: decoding words using knowledge of suffixes, including how they can change base words such as dropping e, changing y to i, and doubling final consonants; **TEKS 3.2.B.vii** Demonstrate and apply spelling knowledge by: spelling words using knowledge of suffixes, including how they can change base words such as dropping e, changing y to i, and doubling final consonants.

LESSON AT A GLANCE

	Grouping	Time	Materials
Core Connection (35 min.)			
Introducing the Unit	Whole Group	10 min.	<input type="checkbox"/> Activity Pages 1.1, 1.2 <input type="checkbox"/> Chart paper
Virtual Field Trip	Partner	25 min.	<input type="checkbox"/> Smithsonian National Zoological Park website
Reading (45 min.)			
Introducing the Reading	Independent/ Small Group	10 min.	<input type="checkbox"/> Activity Pages 1.3, 1.4 <input type="checkbox"/> Activity Page 1.4A (Optional)
Presenting the Reading	Whole Group	15 min.	<input type="checkbox"/> Sticky notes <input type="checkbox"/> <i>Rattenborough's Guide to Animals</i>
Discussing the Reading	Independent/ Small Group	20 min.	<input type="checkbox"/> White paper or file folder
Writing (15 min.)			
Field Journal	Independent	15 min.	<input type="checkbox"/> Activity Page 1.5
Language (25 min.)			
Introducing the Root Words	Whole Group	10 min.	<input type="checkbox"/> Activity Page 1.6 <input type="checkbox"/> Root Words (Digital Projections)
Adding Suffixes <i>-ed</i> and <i>-ing</i>	Whole Group	15 min.	
Take-Home Materials			
Family Letter			<input type="checkbox"/> Activity Pages 1.7, 1.8
Spelling			

ADVANCE PREPARATION

Core Connection

- Prepare the website for viewing during the Virtual Field Trip: nationalzoo.si.edu/Animals/WebCams/.

Reading

- On sticky notes, write the following text features: table of contents, heading, bold print, photo/captions, map, diagram, glossary, and chart. Make sure you have one sticky note for each student and a variety of text features.

Language

- On chart paper create the following or prepare to display Digital Projection DP.U2.L1.1.

Root Word	-ed	-ing

Universal Access

- In this lesson, students will take a trip to a virtual museum to observe animals. Prepare students to engage with the content by doing/setting up the following:
 - Practice pronouncing these terms: *zoologist* and *characteristics*
 - Brainstorm different animals at the zoo and their characteristics
 - Have pictures of the following animals available to discuss their characteristics: squirrels, deer, bears, toucans, and parrots
- In this lesson, students will also read “Meet Rattenborough.” Prepare students to engage with the content by doing/setting up the following:
 - Meet the character and practice pronouncing Rattenborough.
 - Talk about and provide examples of different text features. Explain that text features are parts of the text that stand out, or are different from the rest of the text and information. Many authors use text features to highlight or call attention to important information.

- Review each text feature and definition in the table below:

Table of Contents	Gives the reader an overview of what texts are in this Reader and where to find each text.
Heading	Gives the reader information about the key topics in a text.
Bold Print Words	Show important words or concepts in the reading.
Photo and Captions	Photos visually show you what the text is about and captions describe the photo.
Chart	Summarizes information that is in the Reader.
Map	Shows specific areas that are talked about in the text.
Glossary	Gives the definition of unknown words.
Diagram	Labels places or the parts of something discussed in the text.

Start Lesson

Lesson 1: Animal Researchers (Meet Rattenborough)

Core Connection



Primary Focus: Students will observe and describe basic characteristics of animals at the zoo and record observations on a graphic organizer. **TEKS 3.13.C**

INTRODUCING THE UNIT (10 MIN.) **TEKS 3.13.C**

- Explain to students that during this unit they will be animal researchers, or zoologists. Zoologists are scientists who are experts on animals. They study animal life and behaviors. They also classify different animals. As zoologists, the students will research and read about different kinds of animals and how they are classified.
- Have students take out Activity Page 1.1. Explain to students that their first job is to come up with a name for this animal based on its characteristics.
- **Think-Pair-Share:** On Activity Page 1.1, have students think and record their observations about the animal. Then, have students pair up to share their responses. Next, record student responses on chart paper.

VIRTUAL FIELD TRIP (25 MIN.)

Note: Animals are more active at certain times of day. Switch webcams to find active animals or return at a different time of day.

TEKS 3.13.C Identify and gather relevant information from a variety of sources.

Activity Page 1.1



Support

Define characteristics as things that make one animal different from another animal.

Activity Page 1.2



**ENGLISH
LANGUAGE
LEARNERS**



Exchanging Information and Ideas

Beginning

Ask students simple yes/no questions, such as “Does the animal have fur?”

Intermediate

Have students discuss with a home language peer their animal observations.

Advanced/ Advanced High

Encourage students to answer questions using complete sentences and specific characteristics of animals viewed on the webcam.

ELPS 1.A; ELPS 3.F

- “Now we are going to take a Virtual Field Trip to the Smithsonian National Zoological Park to observe animals.”
- Have students take out Activity Page 1.2. Explain to students that during the Virtual Field Trip, they will take notes as they observe, just like real animal researchers, the animals from zoo webcams.
- Explain to students that they will work with a partner to brainstorm what they already know about the animals listed on Activity Page 1.2: Animal Webcam Observations in the “What I already know” column.
- Project the following website for whole class viewing: nationalzoo.si.edu/Animals/WebCams/
- Direct the students to the webcams on the Smithsonian National Zoological Park website. Discuss with the class the habitat, features, and behavior of each animal shown on the webpage.
- As students are viewing, prompt discussion by asking:
 - What is the animal doing?
 - How would you describe the animal?
 - How would you describe the habitat?
 - What would animal researchers notice about this animal?
- Collect Activity Page 1.2 as students will use their observations for discussion during Lesson 2.

Lesson 1: Animal Researchers (Meet Rattenborough)

Reading



Primary Focus: Students will define and identify text features in the Reader.

TEKS 3.9.D.ii; TEKS 3.10.C

VOCABULARY FOR “MEET RATTENBOROUGH”

- The following are vocabulary words used in this lesson. Preview the words with the students before the lesson and refer back to them at appropriate times. The words also appear in the glossary in the back of the student reader.

TEKS 3.9.D.ii Recognize characteristics and structures of informational text, including: features such as sections, tables, graphs, timelines, bullets, numbers, and bold and italicized font to support understanding; **TEKS 3.10.C** Explain the author’s use of print and graphic features to achieve specific purposes.

carnivore, an animal that mainly eats meat (carnivores)

habitat, a place where plants and/or animals live and grow (habitats)

herbivore, an animal that only eats plants (herbivores)

omnivore, an animal that eats both plants and meat (omnivores)

Vocabulary Chart for “Meet Rattenborough”		
Type	Tier 3 Domain-Specific Words	Tier 2 General Academic Words
Vocabulary	carnivore habitat herbivore omnivore	
Multiple-Meaning Core Vocabulary Words		
Sayings and Phrases		



INTRODUCING THE READING (10 MIN.)

TEKS 3.10.C

- Explain to students that during their new job they will have a partner researcher.
- Have students take out Activity Page 1.3 (a picture of Rattenborough).
- “What do you remember about Rattenborough and what did he teach you in previous grades?”

Note: Students may write their responses on Activity Page 1.3.

- Possible Student responses: In first grade, students learned about habitats, herbivores, carnivores, and omnivores.
- Make sure each student has a copy of the Reader, *Rattenborough’s Guide to Animals*. “Let’s preview the Reader and all the features. What features do you see?”
 - Possible student responses: Table of contents, headings, subheadings, diagrams, charts, maps, illustrations, captions, labels, bold print, and glossary.

Activity Page 1.3



Student Reader:
*Rattenborough’s
Guide to Animals*



TEKS 3.10.C Explain the author’s use of print and graphic features to achieve specific purposes.

Support

Define features as parts of the text that stand out.

Challenge

Students will identify all text features on the sticky notes.

- Explain to students that during the lesson they will focus on defining and identifying organizational text features. Text features are parts of the text that stand out, or are different from the rest of the text and information. Many authors use text features to highlight or call attention to important information.
- Pass out one sticky note to each student with a text feature word on it. Have students place their sticky note near the proper text feature in their Reader.

PRESENTING THE READING (15 MIN.)

Table of Contents

- Point to the Table of Contents.
- “Did anyone label this part of their Reader with a sticky note?”
- Explain that the Table of Contents gives the reader an overview of what texts are in this Reader and where to find each text.

Chapter 1 Introduction: Meet Rattenborough



Greetings! Rattenborough, the famous explorer and animal expert here! Remember me? I taught you all about animals and **habitats** when you were just little kids in first grade. I've been busy since then traveling around the world. But, I'm back now to teach you everything I've learned about animals during my travels.

First, let's take a quick look at what you learned in first grade. Do you remember what a **habitat** is? A **habitat** is the place where animals and plants live. We learned that there are different **habitats** all over the world with different kinds of animals and plants living there.

We visited a desert **habitat** where it was very hot and dry. It hardly ever rains in a desert so the plants and animals that live there have to be able to get by with very little water. I bet you remember that cactus plants live in the desert, along with snakes and lizards.



*Rattenborough in one **habitat**.*

2

3

Pages 2–3

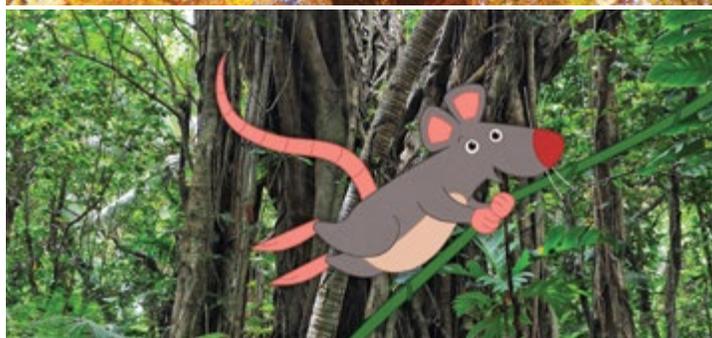
- Point to the Heading.
- “Did anyone label this part of the Reader with a sticky note?”
- Explain that a heading gives the reader information about the key topics in a text. This chapter will be about meeting Rattenborough.
- Point to the photo and caption on **page 3**.
- “Did anyone label this part of their Reader with a sticky note?”
- Explain that photos are used to visually show you what the text is about and captions describe the photos. Read the captions aloud: Rattenborough is in a desert habitat. Tell students to always read captions to gain information.
- Point to the bolded word: habitat.
- “Did anyone label habitat with a sticky note?”

- Explain that bold print words are important words or concepts in the reading. The author bold prints the words so they are easy to find.
- Ask students, “Where in the Reader could we find the definition of *habitat* quickly?”
 - » the glossary
- “Did anyone label the glossary with a sticky note?” Have students turn to the glossary in their Reader and find the word habitat.
- Explain that a glossary is a place where readers can go to find the definition of unknown words.
- Read aloud the greeting from Rattenborough found in the first paragraph on **page 2**. Refer to the chart paper from earlier in the lesson with students’ responses to what they remember about Rattenborough.

We also visited an African savanna. A savanna is also called a grassland. There were lots of interesting animals living there—zebras, elephants, and even lions! To be perfectly honest, I was always a little nervous while we were in the savanna!

Next, we checked out some different kinds of forests. We went to a hardwood forest full of trees with leaves that change color and drop off in the fall. We saw squirrels, deer, and even bears. We saw lots of different kinds of birds in those tall trees.

Then, we visited a tropical rainforest that was very hot, humid, and wet. There were lots of birds in this forest, too. These birds were colorful, tropical birds like toucans and parrots.



Rattenborough in three habitats

Pages 4–5

- Tell students to read **pages 4–5** to themselves to find the answer to the question: “What animals might you find in the three images on **page 5**?”
- When students have finished reading, restate the question and ask several students to give one example of either an animal found in a hardwood forest or a tropical rainforest.
 - » In a hardwood forest, you might find squirrels, deer, and bears. In a tropical rainforest, you might find toucans and parrots.



**ENGLISH
LANGUAGE
LEARNERS**

Foundational Skills

Print Awareness

Pull any students who are struggling with left-to-right directionality into a small group. Model for students how to track print with your finger. Using sticky notes, have students label the left and right side to orient themselves from left to right. Ask students to move their finger beneath the words from left to right as they read.

ELPS 4.B

Last, but not least, we visited freshwater and saltwater **habitats**. In the freshwater **habitat**, we saw fish, turtles, ducks, and beavers. In the saltwater **habitat** of the sea, we saw starfish, crabs, lobsters, and sharks!



*Rattenborough in two water **habitats***

Pages 6–7

- Point out that *habitat* is a bolded word on **page 6**.
- **Think-Pair-Share:** Why is the word *habitat* bolded?
 - » Because it is an important word in the text.
- Direct students' attention to the two images on **page 7** and ask what is similar in the characteristics of the two images of habitats.
 - » Both images include bodies of water. The top image has trees and appears to be a lake. The bottom image is an ocean.
- Point out the caption on **page 7**.
- Ask students to read **pages 6–7** to find out what is different about the water in the two images of habitats.

- When students have finished reading, restate the question and ask for answers.
 - » The top image is a freshwater habitat and the bottom image is a saltwater habitat.



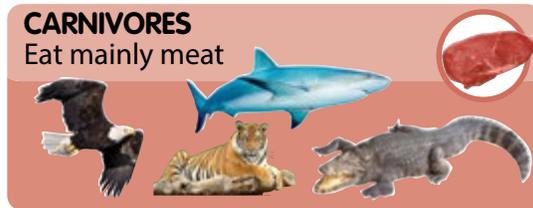
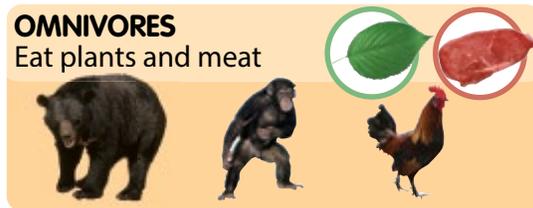
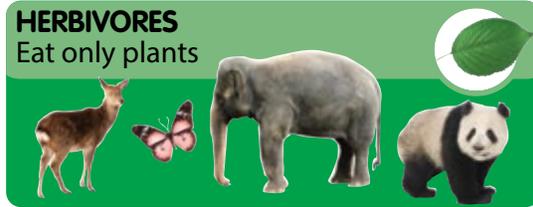
Check for Understanding

If students are unable to identify text features in the Reader, then pull students and show examples of each feature in the text.

Besides learning about **habitats** in first grade, we also studied the different kinds of things that animals eat. Do you remember talking about **herbivores**, **carnivores**, and **omnivores**? We learned that you can sort animals by what they eat.

So, get ready because we are going to learn a lot more about how to sort animals. Rattenborough, your personal animal expert, at your service!

See you next time!



Different animals eat different things.

Pages 8–9

- Direct students' attention to the bolded word: *herbivore*. Have students look in the glossary for the definition and read it together as a class. Note the plural form of the word at the end of the definition and remind students that they will see this form of the word in the chapter as well.
- Point to the chart on **page 9**.
- Ask, "Did anyone label this part of their Reader with a sticky note?"
- Explain that charts are used to summarize information that is in the reader. It is also used to help compare the information. Graphs will also be used to summarize and compare information.
- Direct students' attention to **page 9** and discuss which animals are herbivores, omnivores, and carnivores. Note for students that these images are a way to *classify* animals by showing which animals would be herbivores, omnivores, or carnivores.

- Ask students to share which category they would put themselves in on the page. Note that people who eat only plants are usually called vegetarians rather than herbivores.
- Ask students to read **pages 8–9** to themselves to fill in the blank in the sentence: “When speaking of herbivores, carnivores, and omnivores, we are *classifying* animals by _____.”
- When students have finished reading, reread the sentence and have students fill in the blank.
 - » what they eat
- If there is time, ask students to name other ways that animals could be sorted.
 - » Answers may vary but could include size, shape, number of legs, how they move, what is on the outside of their bodies, etc.

Activity Page 1.4



**ENGLISH
LANGUAGE
LEARNERS**



Understanding Text Structure

Beginning

Lead students to complete the activity in small groups.

Have them identify one text feature in the Reader and help them define the text feature.

Intermediate

Have students complete this activity page in partners or small groups.

Advanced/ Advanced High

Observe if students are able to complete this activity page independently. Ask students to explain why they think their examples of text features are correct.

ELPS 3.H; ELPS 4.D

Challenge

Students will complete Activity Page 1.4 using a different informational text.

Support

Students may use Activity Page 1.4A to complete Activity Page 1.4.

DISCUSSING THE READING (20 MIN.)

1. **Literal.** What sticky notes did we not mention during our reading?
 - » Maps and Diagrams. Direct students' attention to the map on **page 151** that shows where Komodo Dragons live. Explain that maps are used to show the specific area that is talked about in the text. Direct students' attention to the diagram on **page 37** that shows the different parts of fish. Explain that diagrams label places or the parts of something that is discussed in the text.
2. **Literal.** Name two text features we found in our reading.
 - » Table of Contents, Heading, Bold Print, Photos/Captions, Diagram, Map, Chart, and Glossary
3. **Evaluative.** What text feature do you think is most important?
 - » Answers may vary.
 - Have students take out Activity Page 1.4 and read the directions aloud. Have students complete the project listed on Activity Page 1.4 independently or in small groups.
 - Students will need a piece of white paper or file folder to complete Activity Page 1.4.



Check for Understanding

If students are unable to identify text features in the Reader, then pull students and show examples of each feature in the text.

Lesson 1: Animal Researchers (Meet Rattenborough)

Writing



Primary Focus: Students will also write a short reflection on their experiences as animal researchers. **TEKS 3.7.A**

FIELD JOURNAL (15 MIN.)

- During the unit, you will be stopping to record your thoughts as animal researchers. Each journal entry will have a prompt for writing.

TEKS 3.7.A Describe personal connections to a variety of sources, including self-selected texts.

- Today's Field Journal will be a reflection piece on animal researchers. The journal entry today asks: Did you enjoy being an animal researcher today? Explain. What did you like and dislike about being an animal researcher?
- Students will record their answers on Activity Page 1.5.

Activity Page 1.5



**ENGLISH
LANGUAGE
LEARNERS**

Composing/Writing

Beginning

Work with a small group to write a short reflection.

Intermediate

Have students work with a partner to write a longer reflection.

Advanced/ Advanced High

Have students work independently to write a longer, more detailed reflection.

ELPS 5.G

Activity Page 1.6



Lesson 1: Animal Researchers (Meet Rattenborough)

Language



Primary Focus: Students will use conventional spelling when adding suffixes *-ed* and *-ing* to root words. **TEKS 3.2.A.vi; TEKS 3.2.B.vii**

INTRODUCING THE ROOT WORDS (10 MIN.)

- Post or display Digital Projection DP.U2.L1.1

▶ Projection DP.U2.L1.1

Root Word	<i>-ed</i>	<i>-ing</i>

- Tell students that starting with today's lesson, they will be assigned a list of spelling words. The day they receive spelling words is considered Day 1. They will be assessed on the words on Day 5.
- Explain that the root words this week are verbs to which students will be adding suffixes.
- Have students take out Activity Page 1.6 and record the spelling words as directed. Students will be asked to write the root word plus the forms of these words when the suffixes *-ed* and *-ing* are added. Students will also be given two Challenge Words, *give* and *live*.

TEKS 3.2.B.vii Demonstrate and apply spelling knowledge by: spelling words using knowledge of suffixes, including how they can change base words such as dropping e, changing y to i, and doubling final consonants; **TEKS 3.2.A.vi** Demonstrate and apply phonetic knowledge by: decoding words using knowledge of suffixes, including how they can change base words such as dropping e, changing y to i, and doubling final consonants.



Foundational Skills

Beginning

Work with a small group and circle the prefixes and underline the suffixes in each spelling word.

Intermediate

Have students work in pairs to circle the prefixes and underline the suffixes in each spelling word.

**Advanced/
Advanced High**

Have students work independently to circle the prefixes and underline the suffixes in each spelling word.

ELPS 5.C

Support

If students are having difficulty with suffixes, focus on one suffix at a time. Have students read the root word, then the suffix, and blend them together to read the new word.

Challenge

Have students brainstorm other root words with the *-ed* or *-ing* endings.

- As you introduce each of the spelling words, write it in the table, pronouncing each word as you write it. Have students take out Activity Page 1.6 and record the spelling work on their paper.

Note: The following table already includes the Spelling Words.

Root Word	<i>-ed</i>	<i>-ing</i>
Hop		
Rub		
Ship		
Grab		
Patch		
Plan		
Stretch		
Finish		
Discuss		
Submit		

- Explain that a root word is what a word is called before any prefixes or suffixes are added to the word.
- Point out the vowel sound(s) in each word to students.
- When you reach the multi-syllable words (*finish*, *discuss*, and *submit*), model for students how to chunk each word into syllables to say and spell the word. Explain that when there are words with more than one syllable, it can be helpful to divide a word into syllables if we don't know how to read or spell it.

ADDING SUFFIXES -ED AND -ING (15 MIN.)

- Tell students that you will now complete the remainder of the table by adding the suffixes *-ed* and *-ing* to each root word.
 - A suffix is a syllable placed after a root word. Suffixes change the meaning of the root word.
- Remind students that each root word is a verb and ask what the suffix *-ed* on the end of a verb signals.
 - » past tense; the action has already happened

2

Classifying Animals

PRIMARY FOCUS OF LESSON

Reading

Students will explain how text features help readers identify information about classifying living things. **TEKS 3.9.D.ii; TEKS 3.10.C**

Speaking and Listening

Students will define and determine the author's point of view about animal classification. **TEKS 3.1.A; TEKS 3.7.F; TEKS 3.9.D.i; TEKS 3.10.A; TEKS 3.10.B**

Language

Students will identify nouns, verbs, and adjectives to explain their functions in sentences. **TEKS 3.11.D.ii; TEKS 3.11.D.iii; TEKS 3.11.D.iv**

FORMATIVE ASSESSMENT

Activity Page 2.1

Living Things: Text Features Scavenger Hunt

Identify and provide evidence of text features in the

Reader. **TEKS 3.9.D.ii**

Activity Page 2.3

Nouns, Verbs, and Adjectives Identify nouns, verbs, and adjectives in sentences.

TEKS 3.11.D.ii; TEKS 3.11.D.iii; TEKS 3.11.D.iv

TEKS 3.9.D.ii Recognize characteristics and structures of informational text, including: features such as sections, tables, graphs, timelines, bullets, numbers, and bold and italicized font to support understanding; **TEKS 3.10.C** Explain the author's use of print and graphic features to achieve specific purposes; **TEKS 3.1.A** Listen actively, ask relevant questions to clarify information, and make pertinent comments; **TEKS 3.7.F** Respond using newly acquired vocabulary as appropriate; **TEKS 3.9.D.i** Recognize characteristics and structures of informational text, including: the central idea with supporting evidence; **TEKS 3.10.A** Explain the author's purpose and message within a text; **TEKS 3.10.B** Explain how the use of text structure contributes to the author's purpose; **TEKS 3.11.D** Edit drafts using standard English conventions, including: (ii) past, present, and future verb tense; (iii) singular, plural, common, and proper nouns; (iv) adjectives, including their comparative and superlative forms.

LESSON AT A GLANCE

	Grouping	Time	Materials
Reading (45 min.)			
Reviewing Text Features	Small Group	10 min.	<input type="checkbox"/> What am I? cards <input type="checkbox"/> White paper
Introducing the Reading	Independent	10 min.	<input type="checkbox"/> Chart paper <input type="checkbox"/> <i>Rattenborough's Guide to Animals</i> <input type="checkbox"/> Activity Page 2.1
Whole Group Reading	Whole Group	15 min.	
Discussing the Reading	Independent	10 min.	
Speaking and Listening (50 min.)			
Introducing the Read-Aloud	Whole Group	10 min.	<input type="checkbox"/> Activity Page 1.1 (from yesterday's lesson)
Presenting the Read-Aloud	Whole Group	20 min.	<input type="checkbox"/> Author's Purpose Chart <input type="checkbox"/> Digital Flip Book: U2.L2.1–10 <input type="checkbox"/> Activity Page 2.2 <input type="checkbox"/> Chart Paper
Discussing the Read-Aloud	Whole Group	15 min.	
Word Work: <i>Classify</i>	Whole Group	5 min.	
Language (25 min.)			
Nouns, Verbs, and Adjectives	Whole Group	25 min.	<input type="checkbox"/> Activity Page 2.3 <input type="checkbox"/> Parts of Speech Chart (Digital Projections)
Take-Home Materials			
Writing: Field Journal Entry			<input type="checkbox"/> Activity Page 2.4

ADVANCE PREPARATION

Reading

- Prepare one set of What Am I? cards for small groups.

Speaking and Listening

- Create an Author's Purpose chart with the following questions:
 - Why did the author write the text or passage?
 - Does the author want to answer, explain, or describe a topic?
- Prepare five pieces of chart paper with the following titles: Paolo Piranha, Hilda Hippo, Tabitha Toad, Anna Anaconda, and Ebenezer Egret.
- Identify the following digital images on the program's digital components site to project during the Read-Aloud: U2.L2.1-10.

Language

- On chart paper, create the following or prepare Digital Projection DP.U2.L2.1

Parts of Speech	
Nouns are words that name people, places, or things.	
Common nouns are general and are not capitalized.	Proper nouns are specific and are capitalized.
Verbs are words that show action.	
Adjectives are words that describe nouns.	

What Am I? Card Game

- Prepare one set of cards for each small group.

<p>I am a place where readers go to find the definition of unknown words. What am I?</p> <p>Answer: Glossary</p>	<p>We often go together to give the reader a picture of what the text is about and a description of the picture. What am I?</p> <p>Answer: Photo and Captions</p>
<p>I am used to show parts of something that is labeled or places discussed in the text. What am I?</p> <p>Answer: Diagram</p>	<p>I am used to show that words or concepts are important in the reading. What am I?</p> <p>Answer: Bold Print Words</p>
<p>I am used to summarize information that is in the reader. What am I?</p> <p>Answer: Chart</p>	<p>I give the reader an overview of what texts are in the Reader or book and where to find each text. What am I?</p> <p>Answer: Table of Contents</p>
<p>I give the reader information about the key topics in a text. What am I?</p> <p>Answer: Heading</p>	<p>I am used to show the specific area that is talked about in the text. What am I?</p> <p>Answer: Map</p>

Universal Access

- In this lesson, students will also read “Classifying Living Things” as a whole group. Prepare students to engage with the content by doing/setting up the following:
 - Review text features chart from Activity Page 1.4A

Table of Contents	Gives the reader an overview of what texts are in this Reader and where to find each text.
Heading	Gives the reader information about the key topics in a text.
Bold Print Words	Show important words or concepts in the reading.
Photo and Captions	Photos visually show you what the text is about and captions describe the photo.
Chart	Summarizes information that is in the Reader.
Map	Shows specific areas that are talked about in the text.
Glossary	Gives the definition of unknown words.
Diagram	Labels places or the parts of something discussed in the text.

- Assist students in finding examples of each text feature in the Reader.
- Preview the following vocabulary words from the reading: *kingdom*, *life cycle*, *adapt*, *characteristics* and *classify*.
- In this lesson, students will also listen to a Read-Aloud about classifying living things by characteristics. Prepare students to engage with the content by doing/setting up the following:
 - Remind students that scientists put living things into categories to classify them.
 - Introduce the author’s purpose using the Author’s Purpose chart. Discuss each purpose (answer, explain, and describe) and use real world examples to explain each purpose.

Lesson 2: Classifying Animals

Reading



Primary Focus: Students will explain how text features help readers identify information about classifying living things. **TEKS 3.9.D.ii; TEKS 3.10.C**

VOCABULARY FOR READING

- The following are vocabulary words used in this lesson. Preview the words with the students before the lesson and refer back to them at appropriate times. The words also appear in the glossary in the back of the student reader.

kingdom, a major group into which all living things are classified (kingdoms)

life cycle, the stages through which a living thing goes from birth until death

adapt, to change

characteristic, something that makes a person, thing, or group different (characteristics)

classify, to put things into groups based on similarities or type (classifying, classified)

Vocabulary Chart for: “Classifying Living Things”

Type	Tier 3 Domain-Specific Words	Tier 2 General Academic Words
Vocabulary	kingdom life cycle	adapt characteristics classify
Multiple Meaning Core Vocabulary Words	kingdom	
Sayings and Phrases		

TEKS 3.9.D.ii Recognize characteristics and structures of informational text, including: features such as sections, tables, graphs, timelines, bullets, numbers, and bold and italicized font to support understanding; **TEKS 3.10.C** Explain the author’s use of print and graphic features to achieve specific purposes.

Support

Provide students with resource Activity Page 1.4A for support from Lesson 1.

REVIEWING TEXT FEATURES (10 MIN.)

- What am I? card game: In small groups, one student will hold all the cards fanned out in their hand. The student to the right will pick one card and read the question. The student to his/her right will answer the question. If the student does not know the answer, students in the group may give hints to the correct answer. Students will rotate the deck of cards to the next student.



INTRODUCING THE READING (10 MIN.)

TEKS 3.10.C

- Write the phrase “classifying living things” on the board or chart paper.
- “What text features would you look for in the Reader to help you define and classify living things?”
 - » Possible student responses: a heading that says “living things,” a picture of living things, the word *classify* in bold print.
- “Why do you think authors include these text features?”
 - » Possible student responses: so readers can find information quickly and accurately.
- Pass out white paper to each student. In the center, students will write “Classifying Living Things.” Ask students to turn to the Table of Contents, locate the chapter “Classifying Living Things,” and then turn to the first page of the chapter.
- Timed Activity (five minutes): Have students skim **pages 10–19** using text features. Students may add information to their web that they learned about classifying living things from skimming the text using the text features.
- Have students come up to the board or chart paper and add information about classifying living things. Students may explain the text feature they used to find the information.

Support

Have students work in small groups to skim the text.



TEKS 3.10.C Explain the author’s use of print and graphic features to achieve specific purposes.

2 Classifying Living Things



Rattenborough here! Do you remember who I am? I'm here now to help you learn about how scientists sort, or **classify**, living things into groups. Since I am an expert on animals, we will focus mainly on animals.

First, I'm going to ask you two very important questions. How do you know if something is living or nonliving? What important **characteristics** do all living things have?

- All living things create energy from food.
- All living things can have babies or make other living things just like themselves.
- All living things have a **life cycle**. They start out small and then grow.
- All living things change to fit in better with their **habitat**.

10



*All living things are **classified** by their **characteristics**.*

11

WHOLE GROUP READING (15 MIN.)

Pages 10–11

- Read the title of the chapter together as a class, “Classifying Living Things.” Explain that the heading, “Classifying Living Things” is a heading that helps you to identify the information quickly.
- On **page 10**, have students locate the word *classify* in the first paragraph. Remind students that bold printed words are important concepts in the reading. Ask students, “Where in the Reader could we find the definition of *classify* quickly?”
 - » the glossary
- Whole group read: As a whole class, read aloud the first paragraph on **page 10**.
- Have student read the caption and look at the images on **page 11**.

- Ask students to read **pages 10–11** to themselves to find the answer to the question: “What are characteristics of all living things?”
- When students are finished reading, have students look back at the images on **page 11** and point out how they represent the four characteristics of living things.
 - » eat food, start out small and then grow, can have babies, and fit in with their habitat



Check for Understanding

“How did the image on **page 11** help you to determine the characteristics of all living things?”

- » Possible student response: All the pictures on **page 11** show one characteristic that classifies things as living.
-

Plants make up one group of living things. We know this because plants have the same **characteristics** that all living things have.

- Plants create energy from food. They make their own food using the sun, water, and gases in the air.
- Plants make seeds that become new plants.
- Plants grow from small seeds into seedlings and become adult plants.
- Plants can **adapt** to their **habitat**. For example, all plants need water, but a cactus in a dry desert does not need as much water as other plants.



*Plants have the **characteristics** that all living things have.*

Pages 12–13

- Have students look at the pictures and read the caption on **page 13**.
- Ask students to read **page 12** to themselves to discover plant characteristics.

Animals of all shapes and sizes are living things, too. So, animals also have the same **characteristics** that all living things have.

- Animals get energy from the food they eat.
- Animals can have babies.
- Baby animals are small but grow into adult animals.
- Animals can **adapt** to their **habitat**. For example, the fur of polar bears looks white so they can blend in with the snow where they live.



*Animals have the **characteristics** that all living things have.*

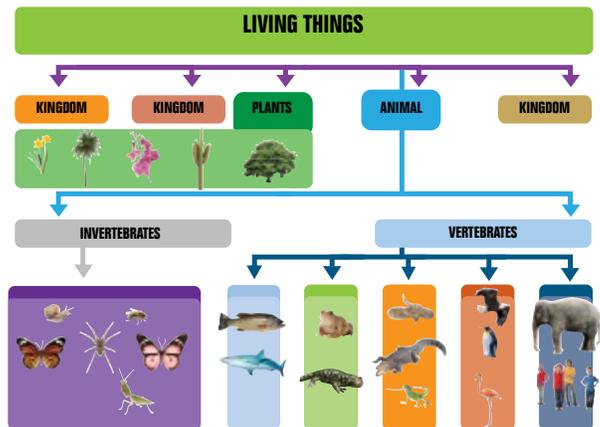
Pages 14–15

- Have students look at the pictures and read the caption on **page 15**.
- Ask students to read **page 14** to themselves to find out animal characteristics.

Plants and animals are both living things, but plants and animals are different in important ways. For example, animals move from place to place, but plants do not.

Scientists study how living things are alike and different and sort, or **classify**, them into large groups called **kingdoms**. There are five **kingdoms** of living things. You have just learned about two—the plant **kingdom** and the animal **kingdom**. (You will learn about the other **kingdoms** in later grades.) The living things in each **kingdom** can then be sorted into more specific groups.

Scientists study animals within the animal **kingdom** and **classify** them by the **characteristics** they share with other animals. One way scientists **classify** animals into more specific groups is by checking if an animal has a backbone. Insects do not have backbones, but birds and fish do. So, animals with a backbone are in different, more specific groups within the animal **kingdom**. Insects make up the largest group in the animal **kingdom**. But there are other large groups of animals, such as birds and fish. You will learn more about other major groups in future chapters.



Scientists **classify** living things into five **kingdoms**. They **classify** animals into other groups by their **characteristics**.

Pages 16–17

- Ask students to scan the bold words on **page 16**. What word is bold?
 - » kingdom
- What does that tell you about the word *kingdom*?
 - » That it is an important word in the reading.
- “How does the chart on **page 17** help your understanding of the classification of living things?
 - » the chart shows how living things are classified into five different kingdoms. We already read about two of the kingdoms: plants and animals.
- As a whole class, read aloud **pages 16–17**.

We **classify** the things around us so we can get to know our world better. As we learn about living things, we also learn about ourselves and our place in the world.

So far, scientists have **classified** over 1 million different kinds of animals. Most of these are insects! Many scientists think there may be close to 10 million other animals that still have not been **classified**!

That's all for now! Rattenborough, over and out! I'll be back in the next chapter to tell you more about how animals are **classified** into different groups.



Insects are the largest group of animals.

Pages 18–19

- As a whole class, read aloud **pages 18–19**.

DISCUSSING THE READING (10 MIN.)

1. **Literal.** How do scientists classify animals?
 - » based on certain characteristics and behaviors; One thing scientists look for is if an animal has a backbone.
 2. **Inferential.** Why do scientists classify animals?
 - » to better understand animals and how they are alike and different.
- Have students take out Activity Page 2.1 and complete independently.



Check for Understanding

If students cannot identify text features in the Reader, then pull students aside to assist in identifying specific text features from Activity Page 2.1.

Lesson 2: Classifying Animals

Speaking and Listening



Primary Focus: Students will define and determine the author's point of view about animal classification. **TEKS 3.1.A; TEKS 3.7.F; TEKS 3.9.D.i; TEKS 3.10.A; TEKS 3.10.B**

VOCABULARY

- The following are core vocabulary words used in this lesson. Preview the words with the students before the lesson. Students are not expected to be able to use these words immediately, but with repeated exposure throughout the lessons they will acquire a good understanding of most of the words. Students may also keep a “unit dictionary” notebook along with definitions, sentences, and/or other writing exercises using these vocabulary words.

kingdom, a major group into which all living things are classified (kingdoms)

characteristic, something that makes a person, thing, or group different (characteristics)

classify, to put things into groups based on similarities or type (classifying, classified)

TEKS 3.1.A Listen actively, ask relevant questions to clarify information, and make pertinent comments; **TEKS 3.7.F** Respond using newly acquired vocabulary as appropriate; **TEKS 3.9.D.i** Recognize characteristics and structures of informational text, including: the central idea with supporting evidence; **TEKS 3.10.A** Explain the author's purpose and message within a text; **TEKS 3.10.B** Explain how the use of text structure contributes to the author's purpose.

Challenge

Have students create additional text features that will support the information from the Reader.

Activity Page 2.1



**ENGLISH
LANGUAGE
LEARNERS**

Reading
Understanding Text
Structures

Beginning

Lead students to complete the activity in small groups. Have students identify and define one text feature in the Reader.

Intermediate

Have students complete this activity page in partners or small groups.

Advanced/ Advanced High

Observe that students are able to complete this activity page independently. Ask students to explain why they think their examples of text features are correct.

ELPS 4.F

vertebrates, animals that have a backbone

invertebrates, animals that do not have a backbone

Activity Pages
1.1 and 2.2



**ENGLISH
LANGUAGE
LEARNERS**



Reading
Reading/Viewing Closely

Beginning

Ask students to say whether the statements are true or false. For example, the author wrote the paragraph to explain how to do something, as well as to describe an object, process, or place.

Intermediate

Ask students to work in groups to determine if the author is explaining, describing, or answering a question.

**Advanced/
Advanced High**

Have students work independently to determine the author's purpose. Monitor student answers on the activity page.

ELPS 4.G

Vocabulary Charts for "Classifying Animals by Characteristics"

Type	Tier 3 Domain-Specific Words	Tier 2 General Academic Words
Vocabulary	vertebrates invertebrates kingdom	characteristics classify
Multiple Meaning Core Vocabulary Words		
Sayings and Phrases		

INTRODUCING THE READ-ALOUD (10 MIN.)

TEKS 3.10.A; TEKS 3.10.B

- Pass out Activity Page 1.1: Animal Webcam Observations. Ask students to describe what they saw and know about these animals. Ask students to share observations and descriptions of animals viewed on the webcams.
- "How were some of the animals alike on the webcam? How were they different?"
- Explain that in order to classify all living things, scientists put them into categories called kingdoms. Remind students that they heard about kingdoms during the reading.
- Explain that during the read aloud, we will also be focusing on the point of view of the author. When we focus on the author's point of view, we ask ourselves:
 1. Why did the author write the text or passage?
 2. Does the author want to answer, explain, or describe a topic?
- Display the Author's Purpose chart in the room. Explain to students that people who write books or articles have a point of view. They have an idea or opinion that they want you to learn about through their writing.
- Have student take out Activity Page 2.2 for whole group Read-Aloud. Read aloud and complete the front side of Activity Page 2.2 as a whole group.

PRESENTING THE READ-ALOUD (20 MIN.)

- Tell students that in today's Read-Aloud, they will hear about five groups of animals, and that they should listen to find out the names of these animal groups and why scientists group them as they do. We will also focus on the

point of view of the author. We will be pausing during the text to analyze a short passage to determine the author's point of view.

- Write on the board: Listen for five groups of animals, their names, and why scientists group them as they do.

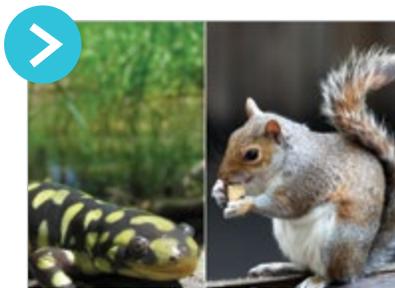


Show Image U2.L2.1 Rattenborough, animal expert with animals and Earth

Aha! I'm back. Does anyone remember me? It's me, Rattenborough, animal expert and world traveler! We've explored lots of animal habitats

together, haven't we? From hot savannas to cold arctic regions, we've watched hungry carnivores eat their prey with very sharp teeth while herbivores feast on grasses nearby. Today I've got great fun in store for you! I'm going to present a slide show! But before I do that, I'd like to tell you a little about how scientists understand animals.

Think about all of the different types of animals on Earth—grasshoppers, penguins, rabbits, lions, salmon, turtles, and salamanders are just a few! What other animals can you name? Wow, you know lots of animals! How do you tell them apart? How do you recognize, or identify, them?



Show Image U2.L2.2 Salamander and squirrel

One way that we make sense of our world is by sorting things into categories, or groups. Look closely at these pictures of a salamander and a squirrel, and notice their **characteristics**. Can you

name any ways that a salamander and a squirrel are alike? How are they different? What other characteristics can you think of to help sort animals into categories?

TEKS 3.10.A Explain the author's purpose and message within a text; **TEKS 3.10.B** Explain how the use of text structure contributes to the author's purpose.

- Pause to discuss Point of View: Explain to students that as they listen to the following paragraph they will complete the back side of Activity Page 2.2. They will think about: Why did the author write the passage? and Did the author want to answer, explain, or describe a topic?



Show Image U2.L2.3

Taxonomists: From Linnaeus to today

In the mid-1700s, about 250 years ago, a Swedish man named Carolus Linnaeus [la-nee-us] became fascinated by the many different

ways that people all over the world were grouping animals. Some people grouped animals by how they looked, others grouped them by their habits and still others by where animals lived. It was all a great mumbo-jumbo, so Linnaeus decided to use their ideas to create a worldwide system to **classify**, or group, animals based on their shared characteristics. This science of classifying **organisms** is called **taxonomy**. Using new ideas and tools, scientists have continued to study organisms and the ways they are similar and different. Over time, ideas about how to classify animals have changed somewhat.



Check for Understanding

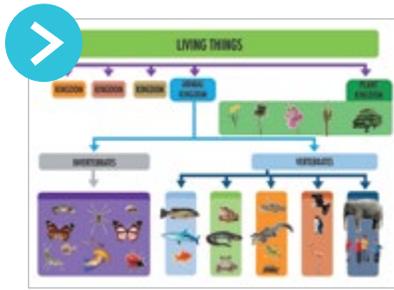
Walk around the room to monitor student responses on the back side of Activity Page 2.2.

Challenge

Ask: How do you think the author feels about animal classification? How do you think the author feels about animal classification?

- » Classifying animals based on their characteristics is good because it was all mumbo-jumbo before.

- As a whole group, review student responses.
- Point of view: Why did the author write the passage?
 - Possible student responses: the author wrote the passage to explain why Carolus Linnaeus created a way to classify animals.
- Did the author want to answer, explain or describe a topic?
 - Possible student responses: the author wanted to explain how animals are classified.



Show Image U2.L2.4 “Living Things” chart

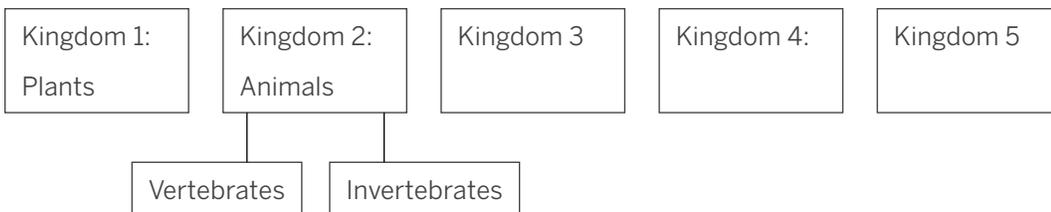
Scientists currently recognize three groups of living organisms based on important parts within their cells.

Scientists generally agree that these

groups of organisms are then divided into **kingdoms**, the main groups into which all living organisms have been further classified. Plants and animals are the two kingdoms that I know the most about, and today I’m here to talk to you about my favorite one! That’s right—the animal kingdom!

Taxonomists identify animals by their characteristics, or special features that set them apart from others. They divide the five animal kingdoms into smaller and smaller groups, with each smaller group having more and more in common with one another. Each group has a specific name. For example, you and I not only belong to the same kingdom—the animal kingdom—but we both belong to the same phylum [*fy-lum*]*—the phylum known as chordata—because we share similar body characteristics.*

Animal Classification



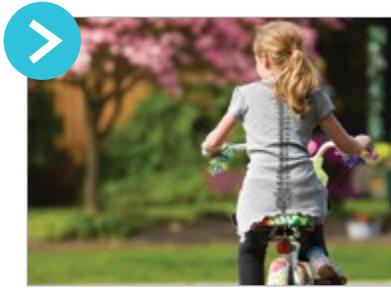
Support

Draw a picture on the board representing the five kingdoms.

See diagram to the left.

Challenge

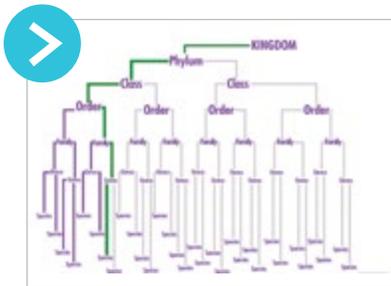
Have students research and create a taxonomy diagram.



Show Image U2.L2.5 Child's spine

Most animals in the phylum chordata are **vertebrates**. A vertebrate has a backbone. Do you have a backbone? Yes, you do. And so do I! That is one

of our common characteristics, one of the ways that scientists group us to show relationships between us. My backbone is smaller than yours, because I'm much smaller. But if you look closely at this image, you can see how similar the bones are!



Show Image U2.L2.6 Taxonomy diagram

Vertebrates belong to the animal kingdom and are in the phylum *chordata*. This phylum is divided into even more groups called classes.

A class is divided into smaller groups called *orders*. An order is divided into smaller groups called *families*. A family is divided into smaller groups, each called *genus*. And a genus is divided into even smaller groups called *species*. There are many, many species within each group!



Show Image U2.L2.7 Invertebrate and Vertebrate Graphic

Now that you know that a vertebrate is an animal with a backbone, what do you think an invertebrate is? Yes, that's correct! An invertebrate is an

animal with no backbone! A little more than 95 percent of all animals on Earth are invertebrates. Think about it: more than 95 percent of all

the species of animals on Earth are invertebrates—that’s a lot! And most of them are fairly small.

Fewer than 5 percent of all animal species are vertebrates. That means that you and I, and all vertebrates, belong to a very small percentage of all the animals on Earth! Mammals—that includes all humans—are literally just a speck!



Show Image U2.L2.8
Rattenborough’s Scrapbook Page,
“Vertebrate Animals Around the World”

Now that you’ve heard a little about how taxonomists sort animals into categories, I’m ready to begin the

slide show of my world-wide travels, and I’m going to teach you all kinds of amazing things about animals. I met the most wonderful new animal friends while I traveled the globe, and so throughout this domain, I will show you my slides so that you can meet them, too! They represent five vertebrate groups of animals. As they are introduced, remember to think about how a scientist might classify each one of my new friends. How is each one like you and how is each one different from you?

Here’s Paolo [*pow-lo*] Piranha from Colombia. This is Tabitha Toad from Brazil. Here’s Anna Anaconda from Peru. This is Ebenezer [*eb-uh-nee-zer*] Egret from South Africa. And meet Hilda Hippo from Tanzania. Please welcome Paolo, Tabitha, Anna, Ebenezer, and Hilda to your classroom. They are going to appear from time to time in my slides as you learn about the five vertebrate groups of animals. Be sure to keep a sharp eye out for them—you never know when one of them might turn up!

Aren’t they a handsome bunch? They all belong to the animal kingdom like you and me. And, they are like us in another way: they all have backbones.

Now, things get tricky. We are all animals and we are all vertebrates, but we are not all the same, are we? Heavens, no! We have lots of differences as well. You and I belong to the class, or group, called mammals. What makes mammals different from other classes of animals is that they have fur or hair, and the mothers give birth to live babies and feed their babies with the milk their bodies produce. You will learn more about these and other characteristics of mammals another day.

My friend Hilda Hippo is indeed a mammal, even though it is hard to see the little bit of hair around her mouth and on the tips of her ears and tail. When I was in Tanzania, Hilda and I had a visit with a proud new mother hippopotamus! Look at her with her baby.

So, I'm a mammal, you're a mammal, and Hilda is a mammal. But my other friends have different classifications. One of them is in the reptile class—a scaly creature that likes to warm itself in the sunshine— Anna Anaconda! Isn't she beautiful? She's one of the largest snakes in the world. Though she is not poisonous, her strong muscles help her constrict, or squeeze, her prey!

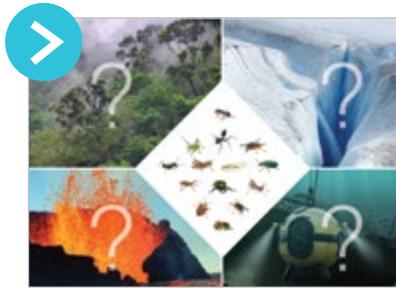
Another of my friends is an amphibian, which means that she lays eggs and lives both in and out of water. Most animals in the amphibian class have smooth, wet skin, but my friend's skin is rather dry and leathery. Who is she? Right again—Tabitha Toad! She looks a lot like her close relative, the frog, doesn't she? Her skin helps protect her as it is camouflaged, or able to blend into the environment.

My last two friends should be easy to classify because their classification names are much more common to all of us. Which one of my friends is a member of the bird class? Yes—Ebenezer Egret! Ebenezer is a warm-blooded vertebrate with feathers.

Paolo Piranha is the last of my friends to be classified today. Which group does Paolo belong to? Paolo Piranha is a fish. He has fins and gills, and lives in water. Piranhas, though small, are thought by many to be dangerous because of their very sharp teeth. Don't worry. Paolo, like many other piranhas, usually feeds on dead and injured wild animals.

Taxonomists believe that all of the vertebrate animals on Earth can be classified into one of these five animal groups—fish, amphibians,

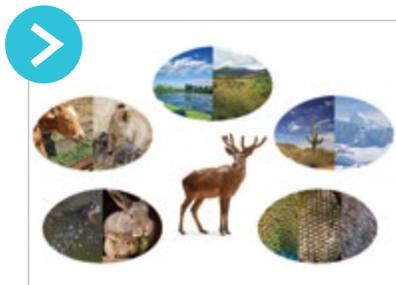
reptiles, birds, and mammals. In the fish group, there are three different fish classes; fish also have the largest number of species among vertebrates. Even though there are more than 60,000 known species of vertebrates on Earth, there are nearly a million and a half invertebrates—and a million of those are insects!



Show Image U2.L2.9 **Unexplored Places on Earth**

Scientists continue to discover thousands of new insect species each year. How can this be? It's because there are still unexplored areas of the

Earth—far into the rainforests, inside the cold ice of glaciers, within the hot lava of volcanoes, and deep down in the ocean. Perhaps one day *you* will discover new animals yourselves, examine and classify them by their different characteristics, and add to our understanding of taxonomy.



Show Image U2.L2.10 **Classification questions**

Let's think about what you've learned today. Scientists classify organisms, including animals, in order to show relationships between them. Animals

are classified by common characteristics. Vertebrate animals have backbones, whereas invertebrates do not. Some are warm-blooded, whereas others are cold-blooded. We will learn more about warm-blooded and cold-blooded animals in other readings and Read-Alouds.

Let's think about other ways that scientists might classify animals. It is important to consider where animals live—their habitats. Do they live in water or on land? Do they live in warm climates or cold climates? What covers their bodies—feathers or scales, fur or hair? Do they lay eggs

or do they give birth to live creatures that look like smaller versions of themselves? What kinds of food do they eat—plants, animals, or both? These are all important questions for taxonomists to ask as they work to group animals into categories that are easily studied.

In the upcoming Read-Alouds, you will learn much more about how animals are classified. Next time, we will pick up with the slide show so that I can teach you about the groups of animals to which Tabitha Toad, Anna Anaconda, and Paolo Piranha belong. Can anyone make a prediction about which of my friends are warm-blooded animals like me? Well, you'll have to wait until next time to see if you are right!

DISCUSSING THE READ-ALoud (15 MIN.)

- Timed Activity (10 min): Point to the chart papers posted around the room. Explain that each chart paper lists one of the animals discussed in the passage. With a pencil, students will move from chart paper to chart paper and add additional information they learned about each animal.
- As a whole group, review the information listed on the animal charts (5 min.).
Teacher note: Ensure that the charts have correct information listed for each animal. Students should have classified the animals as amphibian, mammal, bird, fish or reptile. They should also include that they are vertebrates, and have backbones.



WORD WORK: CLASSIFY (5 MIN.)

TEKS 3.7.F

- In the Read-Aloud you heard, “. . . [the scientist] Linnaeus decided to use [people’s] ideas to create a worldwide system to *classify*, or group, animals based on their shared characteristics.”
- The word *classify* means to sort or group animals or things according to common characteristics.
- In order to organize, study, and compare animals, scientists classify them by their common or shared characteristics.
- Have you ever had to classify something? What was it? If not, can you imagine something that you might have to classify this school year? Be sure to use the word *classify* when you tell about it.
- Ask two or three students. If necessary, guide and/or rephrase the students’ responses to make complete sentences: “I have had to classify . . .”



TEKS 3.7.F Respond using newly acquired vocabulary as appropriate.

- What’s the word we’ve been talking about? What part of speech is the word *classify*?
- Use a Making Choices activity for follow-up. Directions: I will name a person. I want you to think about what types of things this person may classify in his or her job. For example, if I say, “teacher,” you might say, “The teacher may classify her students into groups of boys and girls.” Be sure to use the word *classify* in a complete sentence when you share. (Answers may vary for all examples.)
 1. A grocery store worker
 - » A grocery store worker may classify the food in the grocery store.
 2. A librarian/media specialist
 - » The librarian/media specialist may classify the books, magazines, and videos in the library.
 3. An astronomer
 - » An astronomer may classify the stars, planets, comets, and galaxies in the universe.
 4. A musician
 - » A musician may classify sheet music, instruments, and composers.
 5. A mail carrier
 - » A mail carrier may classify zip codes, letters, and packages.

Lesson 2: Classifying Animals

Language



Primary Focus: Students will identify nouns, verbs, and adjectives to explain their functions in sentences. **TEKS 3.11.D.ii; TEKS 3.11.D.iii; TEKS 3.11.D.iv**

NOUNS, VERBS, AND ADJECTIVES (25 MIN.)

- Tell students that today, they will review parts of speech. Remind them that they studied four parts of speech in second grade: nouns, verbs, adjectives, and adverbs. Review the Parts of Speech poster that you prepared in advance with students.

TEKS 3.11.D Edit drafts using standard English conventions, including: (ii) past, present, and future verb tense; (iii) singular, plural, common, and proper nouns; (iv) adjectives, including their comparative and superlative forms.

- Refer to the previously created chart or display Digital Projection DP.U2.L2.1.

➤ Projection DPU2.L2.1

Parts of Speech	
Nouns are words that name people, places, or things.	
Common nouns are general and are not capitalized.	Proper nouns are specific and are capitalized.
Verbs are words that show action.	
Adjectives are words that describe nouns.	

Nouns

- Direct students to the poster you prepared. Beginning with nouns, ask students to help make a list on the board of nouns that name things they can see in the room. (desk, board, Sandra, paper, pencil, girl, boy, door, window, Mrs. Smith, floor, wall, etc.)
- Remind students about the difference between the *features* of common and proper nouns. (Common nouns name people, places, or things in general, while proper nouns name specific people, places, or things.) Examples could be: boy, school, city (common nouns), Jake Johnson, Washington School, and New York City (proper nouns).

Verbs

- Next, move to verbs and redirect students to the poster you prepared. Remind students that many verbs are action words (words that are actions you can do). Ask students to create a list of verbs. Examples could be: *take, give, run, jump, hop, skip, and fly.*

Adjectives

- Now, move to adjectives and redirect students to the poster you prepared. Remind students that the *features* of adjectives are that they can answer the questions *how many, what kind of, what color, what shape, etc.*
- Have students look back at the list of nouns on the board and add adjectives to describe them. (*wooden desk, white board, lined paper, sharpened pencil, smart girl, tall boy, closed door, broken window, clean floor, covered wall, etc.*)
- Remind students that the words *a, an, and the* are all a special kind of adjective called articles.



Using Nouns and Noun Phrases

Beginning

Work with a small group to list nouns on the board and add adjectives to describe them.

Intermediate

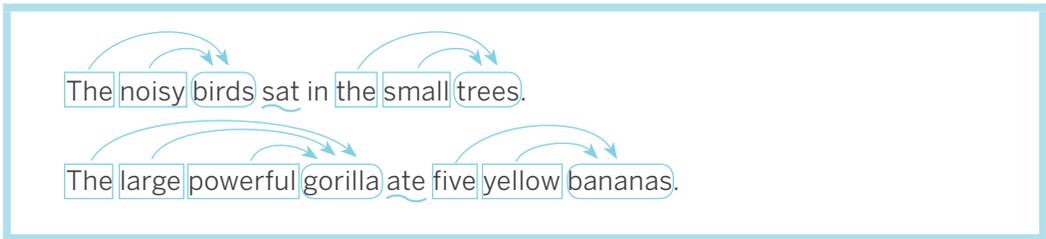
In small groups, have students brainstorm nouns and add adjectives to describe them.

Advanced/ Advanced High

Have students work independently to brainstorm nouns and add adjectives to describe them.

ELPS 5.F

- Next, write the following sentences on the board and ask students to direct you in identifying the nouns, verbs, and adjectives.
 - The noisy birds sat in the small trees.
 - The large, powerful gorilla ate five yellow bananas.
- Circle the nouns, draw a wiggly line under the verbs, and draw a box around the adjectives. Draw an arrow from the adjective to the noun it describes.



- Have students turn to Activity Page 2.3 and go over the first few sentences together. Have students complete the remainder of the Activity Page independently.

End Lesson

Lesson 2: Classifying Animals

Take-Home Materials

- Have students complete Activity Page 2.4.

Activity Page 2.3



Activity Page 2.4



**ENGLISH
LANGUAGE
LEARNERS**

Using Nouns and
Noun Phrases
Expanding Noun Phrases

Teacher-led/modeled to
expand noun phrases using
images from the text.

ELPS 5.F

Support

Complete Activity
Page 2.3 as a teacher-
guided activity.

3

Vertebrate or Invertebrate?

PRIMARY FOCUS OF LESSON

Reading

Students will identify the connection between vertebrates and invertebrates.

✚ **TEKS 3.7.C**

Speaking and Listening

Students will identify the important points from two informational texts on

✚ vertebrate and invertebrates. **TEKS 3.1.A; TEKS 3.6.E; TEKS 3.6.F; TEKS 3.6.H; TEKS 3.9.D.i**

Language

✚ Students will determine the meaning of words formed when *-ed* or *-ing* are added to a known root word. **TEKS 3.3.C**

FORMATIVE ASSESSMENT

Activity Page 3.3

✚ **Compare Two Texts** Identify how two texts are alike and different. **TEKS 3.6.H**

✚ **TEKS 3.7.C** Use text evidence to support an appropriate response; **TEKS 3.1.A** Listen actively, ask relevant questions to clarify information, and make pertinent comments; **TEKS 3.6.E** Make connections to personal experiences, ideas in other texts, and society; **TEKS 3.6.F** Make inferences and use evidence to support understanding; **TEKS 3.6.H** Synthesize information to create new understanding; **TEKS 3.9.D.i** Recognize characteristics and structures of informational text, including: the central idea with supporting evidence; **TEKS 3.3.C** Identify the meaning of and use words with affixes such as im- (into), non-, dis-, in- (not, non), pre-, -ness, -y, and -ful.

LESSON AT A GLANCE

	Grouping	Time	Materials
Reading (50 min.)			
Introducing the Reading	Whole Group	10 min.	<input type="checkbox"/> Vertebrate and invertebrate cards <input type="checkbox"/> Vertebrate and Invertebrate Chart (Digital Projections) <input type="checkbox"/> Chart paper <input type="checkbox"/> <i>Rattenborough's Guide to Animals</i> <input type="checkbox"/> Activity Page 3.1
Whole Group Reading	Whole Group	25 min.	
Discussing the Reading	Whole Group	15 min.	
Speaking and Listening (55 min.)			
Introducing the Read-Aloud	Whole Group	5 min.	<input type="checkbox"/> Vertebrate and invertebrate cards <input type="checkbox"/> Digital Flip Book: U2.L2.7, U2.L3.1–6 <input type="checkbox"/> Activity Pages 3.2, 3.3 <input type="checkbox"/> Yellow and orange markers
Presenting the Read-Aloud	Independent	25 min.	
Discussing the Read-Aloud	Whole Group	25 min.	
Language (15 min.)			
Nouns, Verbs, and Adjectives	Small Group	10 min.	<input type="checkbox"/> Activity Page 3.4 <input type="checkbox"/> Parts of Speech poster (Digital Projections)
Spelling: Blank Busters	Independent	5 min.	
Take-Home Material			
Blank Busters			<input type="checkbox"/> Activity Page 3.4

Reading

- Prepare vertebrate and invertebrate cards for each student.

Vertebrate

Invertebrate

- On chart paper, create the following or prepare Digital Projection DP.U2.L3.1.

Vertebrates or Invertebrates?	
Before Reading	After Reading
Humans Vertebrate: Invertebrate:	Humans Vertebrate: Invertebrate:
Horse Vertebrate: Invertebrate:	Horse Vertebrate: Invertebrate:
Butterfly Vertebrate: Invertebrate:	Butterfly Vertebrate: Invertebrate:
Snake Vertebrate: Invertebrate:	Snake Vertebrate: Invertebrate:
Lobsters Vertebrate: Invertebrate:	Lobsters Vertebrate: Invertebrate:
Goldfish Vertebrate: Invertebrate:	Goldfish Vertebrate: Invertebrate:
Earthworm Vertebrate: Invertebrate:	Earthworm Vertebrate: Invertebrate:

Speaking and Listening

- Identify the following digital images on the program’s digital components site to project during the Read-Aloud: U2.L2.7, U2.L3.1–6.

Language

- Display the poster you created for Lesson 2 (DP.U2.L2.1) that says:

Parts of Speech	
Nouns are words that name people, places, or things.	
Common nouns are general and are not capitalized.	Proper nouns are specific and are capitalized.
Verbs are words that show action.	
Adjectives are words that describe nouns.	

Universal Access

- In this lesson, students will also read “Vertebrate or Invertebrate?” Prepare them to engage with the content by doing/setting up the following:
 - Review with students key vocabulary from the text: *vertebrate* and *invertebrate*.
 - Show students pictures of the following images: human, horse, butterfly, snake, lobster, goldfish, and earthworm. Have a discussion about the pictures and ask students if they think each image is an example of a vertebrate or invertebrate.
- In this lesson, students will listen to the Read-Aloud, Vertebrate Animals. Prepare students to engage with the content by doing/setting up the following:
 - Define the following: compare (alike) and contrast (different).
 - Ask students how two items are alike and different. How are water and soda alike? How are they different?
 - Practice pronouncing the following vocabulary words: *vertebrates* and *invertebrates*.

Lesson 3: Vertebrate or Invertebrate?

Reading



Primary Focus: Students will identify the connection between vertebrates and invertebrates. **TEKS 3.7.C**

VOCABULARY FOR READING

- The following are vocabulary words used in this lesson. Preview the words with the students before the lesson and refer back to them at appropriate times. The words also appear in the glossary in the back of the student reader.

spine, backbone

vertebrates, animals that have a backbone

invertebrates, animals that do not have a backbone

Vocabulary Chart for “Vertebrate or Invertebrate?”

Type	Tier 3 Domain-Specific Words	Tier 2 General Academic Words
Vocabulary	vertebrate invertebrate spine	
Multiple-Meaning Core Vocabulary Words	spine	
Sayings and Phrases		

INTRODUCING THE READING (10 MIN.)

- Vertebrate or Invertebrate Quiz:** Pass out the vertebrate and invertebrate cards to each student. Explain that the teacher will call out an animal. Students will have to decide if they think the animal is a vertebrate or invertebrate. Students will show their response by holding up the corresponding card. The teacher will record the student responses on the chart paper titled, “Vertebrate or Invertebrate?” in the Before Reading column. **Note:** The teacher will record the number of students that selected vertebrate and invertebrates on the chart.

TEKS 3.7.C Use text evidence to support an appropriate response.

- Refer to the previously created chart or display digital Projection DPU2.L3.1.

➤ **Projection DPU2.L3.1**

Vertebrates or Invertebrates?	
Before Reading	After Reading
Humans Vertebrate: Invertebrate:	Humans Vertebrate: Invertebrate:
Horse Vertebrate: Invertebrate:	Horse Vertebrate: Invertebrate:
Butterfly Vertebrate: Invertebrate:	Butterfly Vertebrate: Invertebrate:
Snake Vertebrate: Invertebrate:	Snake Vertebrate: Invertebrate:
Lobsters Vertebrate: Invertebrate:	Lobsters Vertebrate: Invertebrate:
Goldfish Vertebrate: Invertebrate:	Goldfish Vertebrate: Invertebrate:
Earthworm Vertebrate: Invertebrate:	Earthworm Vertebrate: Invertebrate:

- Tell students that today we will be reading and listening to passages about vertebrates and invertebrates.
- Write *vertebrate* and *invertebrate* on the board. From *vertebrate*, draw a line and write “an animal with a backbone.” From *invertebrate*, draw a line and write “an animal without a backbone.” Explain that many times, scientists refer to a backbone as a spine.
- Explain to students that throughout the reading, they will write key concepts and animals on their vertebrate and invertebrate cards. Students will use these notes to help them determine if the animals on the chart paper are vertebrates or invertebrates.



Rattenborough, here again! You have learned that scientists who study the animal **kingdom classify** animals into different groups, based on different **characteristics**. Some **characteristics** scientists study are:

- what makes up the animal's skin, such as hair or **scales**
- whether animals give birth to live babies or lay eggs
- whether mothers feed their babies milk from their own bodies
- whether animals are **warm-blooded** or **cold-blooded**



Scientists **classify** living things by different **characteristics**, such as what is on their skin, if they lay eggs or have live babies, how they feed their babies, and whether they are **warm-blooded** or **cold-blooded**.

WHOLE GROUP READING (25 MIN.)

Pages 20–21

- Read the title of the chapter together as a class, “Vertebrate or Invertebrate?”
- Ask students, “Where in the Reader could we find the definition for vertebrate quickly?”
 - » the glossary
- Have students read the caption and look at the images on **page 21**.
- Ask: “Looking at the pictures and caption, what information can we gain from these text features?”
 - » We learn that scientists classify living things by different characteristics.

- Ask students to read **pages 20–21** to themselves and think about this question: “How do the photos and caption support the text?”
- When students are finished reading, restate the question and ask them to answer.
 - » The text states that scientists classify animals by their skin, how they give birth, how and what mothers feed their babies, and whether they are warm- or cold-blooded. All of the photos show pictures of each of the ways animals are classified.

Another key **characteristic** that scientists study is whether animals have a backbone. Animals that have a backbone are called **vertebrates**. Humans are **vertebrates**. Place your hand on the back of your neck until you feel a bump. Now, rub your hand up and down the middle of your back. Do you feel bumpy bones that run in a row down your back, from your neck down to your waist? That's your backbone. Another name for a backbone is a **spine**.

The backbone or **spine** wraps around and protects an important part of your body called the spinal cord. The spinal cord is a bundle of nerves. Messages travel up and down your spinal cord from your brain to other parts of your body. This is the way that your brain sends signals telling the other parts of your body what to do.



*Humans have a backbone and are classified as **vertebrates**.*

Pages 22–23

- Have students read the caption and look at the image on **page 23**. Have students feel the series of bones in their back that make up their backbone or spine.
- Ask students to read **pages 22–23** to themselves and record any important information on their vertebrate or invertebrate cards.
- When students are finished reading, have them share the important information they wrote on their cards.



Check for Understanding

If students did not identify the backbone/spine as being a connection to vertebrates, then reread the first paragraph aloud and highlight the sentence: Animals that have backbones are called vertebrates.

Many other animals also are **vertebrates**. All **mammals**, **reptiles**, fish, and birds have a backbone, so they are all **vertebrates**. They have some type of spinal cord, too.

Animals with a backbone come in all different shapes and sizes. Apes, rhinos, horses, rabbits, bats—and yes, rats and humans, too—are all **mammals** and **vertebrates**. Lizards, turtles, snakes, and crocodiles are **reptiles** and **vertebrates**. Huge sharks and tiny goldfish are also **vertebrates**. Small hummingbirds and large eagles are **vertebrates**, too.

But there are many more animals that do not have a backbone. Animals without a backbone are called **invertebrates**. Insects are the largest group in the animal **kingdom**. Insects are also the largest group of **invertebrates**. Insects include flies, wasps, beetles, cockroaches, ladybugs, and butterflies. Other kinds of **invertebrates** include earthworms and spiders.

Some interesting **invertebrates** live in the sea. Lobsters, shrimp, and crabs do not have a backbone. The giant octopus is an **invertebrate** as well. Have you ever seen a jellyfish or a starfish? They are also **invertebrates**. So, these animals do not have a backbone or spinal cord.

Challenge

Have students categorize the vertebrate animals they listed by another characteristic (mammals, reptiles, fish, and birds).

Support

Pair up with students who have difficulty identifying vertebrate animals. Assist the students in going back into the text to find the animals.

Pages 24–25

- Explain to students that as the text is read aloud, they will need to record five examples of vertebrates on their vertebrate card.
- Read aloud **page 24**.
- Ask students to share with a partner the five examples of vertebrates they recorded on their vertebrate card.
 - » Students may choose among apes, rhinos, horses, rabbits, bats, rats, humans, lizards, turtles, snakes, crocodiles, sharks, goldfish, hummingbirds, and eagles.
- Explain to students that as the text is read aloud, they will need to record five examples of invertebrates on their invertebrate card.
- Read aloud the first paragraph on **page 25**.
- Ask students to share with a partner the five examples of invertebrates they recorded on their invertebrate card.
 - » Students may choose among flies, wasps, beetles, cockroaches, ladybugs, butterflies, earthworms, and spiders.

DISCUSSING THE READING (15 MIN.)

- Go back to the chart used at the beginning of the lesson. Explain to students that the animals on the chart will be called out again. Students must first decide if the animal is a vertebrate or invertebrate and then hold up the corresponding card to show their response. Students may also use their notes from their cards to help them classify the animals.

Note: The teacher will record the number of students that selected vertebrate and invertebrates on the chart.

- As a whole group, complete Activity Page 3.1.



Check for Understanding

If students are having difficulty making connections between vertebrates and invertebrates, then find pictures of various animals and have students classify them as vertebrates or invertebrates.

Activity Page 3.1



**ENGLISH
LANGUAGE
LEARNERS**

Reading/Viewing
Closely

Beginning

Students should complete this activity page in small groups. Have them explain why they think vertebrates and invertebrates are alike and different. Help them show you where they can confirm their answer in the text.

Intermediate

Have students complete the Activity Page in partners or small groups. Prompt them to ask each other how and why vertebrates and invertebrates are alike and different.

Advanced/ Advanced High

Observe if students are able to complete the activity page independently.

ELPS 2.I; ELPS 3.H;

ELPS 4.D

Lesson 3: Vertebrate or Invertebrate?

Speaking and Listening



Primary Focus: Students will identify the important points from two informational texts on vertebrate and invertebrates. **TEKS 3.1.A; TEKS 3.6.E; TEKS 3.6.F;**

TEKS 3.6.H; TEKS 3.9.D.i

VOCABULARY FOR “VERTEBRATE ANIMALS”

- The following are core vocabulary words used in this lesson. Preview the words with students before the lesson. Students are not expected to be able to use these words immediately, but with repeated exposure throughout the lessons, they will acquire a good understanding of most of the words. Students may also keep a “unit dictionary” notebook along with definitions, sentences, and/or other writing exercises using these vocabulary words.

column, a set of objects arranged in a vertical, or up and down, arrangement; a supporting base

exoskeleton, the tough, rigid outer covering that invertebrate animals have for protection and to keep their bodies from drying out

TEKS 3.1.A Listen actively, ask relevant questions to clarify information, and make pertinent comments; **TEKS 3.6.E** Make connections to personal experiences, ideas in other texts, and society; **TEKS 3.6.F** Make inferences and use evidence to support understanding; **TEKS 3.6.H** Synthesize information to create new understanding; **TEKS 3.9.D.i** Recognize characteristics and structures of informational text, including: the central idea with supporting evidence.

nerves, parts of the body that send messages to and from the brain through the spinal cord

spine, backbone

vertebrates, animals that have a backbone

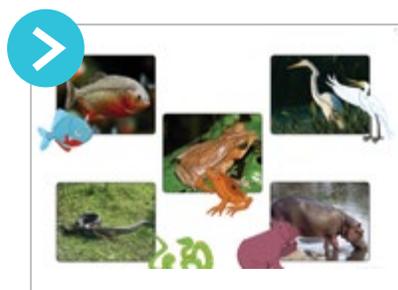
Vocabulary Chart for “Vertebrate Animals”		
Type	Tier 3 Domain-Specific Words	Tier 2 General Academic Words
Vocabulary	exoskeleton nerves spine vertebrate	column
Multiple-Meaning Core Vocabulary Words	spine	column
Sayings and Phrases		

INTRODUCING THE READ-ALOUD (5 MIN.)

- Ask: “What is classification?”
 - » A classification is a grouping together of things based on how they are alike and the separating of things based on how they are different.
- Explain to students that they are going to listen to a text that focuses on vertebrate animals. Students will add additional notes to their vertebrate and invertebrate cards from earlier in the lesson. After listening to the text, they are going to determine the main point and supporting details of passages from the reading and Read-Aloud selections.

PRESENTING THE READ-ALOUD (25 MIN.)

- Say: “During the Read-Aloud of the first paragraph, listen for the most important point.”



Show Image U2.L3.1 Animals and Their Spines

Hello, everybody. Rattenborough, world traveler and presenter of animals, back for another exciting day of slide show and tell! Remember my

friend Hilda the Hippo? We are actually like her. Do you know how? We are all vertebrates. That's right—vertebrates have backbones. And animals without backbones are called *invertebrates*. Because you and I are both vertebrates, we'll talk about vertebrates first. Let's take a look at the hippopotamus.



Check for Understanding

What is the important point from the first paragraph in the Read-Aloud?

- » Vertebrates have backbones and invertebrates do not.

When you look at the outside of an animal, you can't see the backbone because it is on the inside. But sometimes you can tell where the backbone is. Under a vertebrate's skin, there is a ridge. This is the backbone, or **spine**, that starts near its head and runs all the way down its back to its tail. Find your backbone again. Remember those bumpy bones? Each bump you feel is a separate **vertebra**. They form a row from your neck all the way down your back to your tailbone. Your spine serves a very important purpose. Your spine protects your spinal cord, that large bundle of **nerves** that sends messages from your brain to every part of your body.

Let's look at the backbones of the five animal species to which my five friends belong. We've seen that a hippopotamus has a backbone. Next let's look at one of Ebenezer's fellow egrets. Its backbone, or spinal **column**, helps it hold its head up high and protects its spinal cord. Like all egrets, Ebenezer could not live without his backbone. All birds have backbones, or vertebrae.

Support

Review the five animal species with backbones: reptiles, amphibians, fish, mammals, and birds.

Support

Tell students to add notes to their vertebrate and invertebrate cards during the next part of the read aloud..

Support

What additional information did you add to your vertebrate note card?

- » Some animals have lighter and more bendable cartilage instead of hard bone.

Snakes don't look like they have backbones, do they? Even though snakes **slither**—or slip and slide along—they absolutely *do* have backbones! A snake's vertebrae, like Anna Anaconda's, run the length of its body and swing low to the ground as its muscles help it move along the ground or climb up trees. A pair of ribs is attached to each vertebra, protecting the body parts inside the snake's body. All reptiles have backbones. So, you can't always tell from the outside whether an animal is a vertebrate with a spine (backbone), or whether it's an invertebrate.

How about fish? Would you say fish have backbones? The answer is yes! All fish have backbones, just as reptiles, birds, and mammals do. It's very tricky to see, but if you took an x-ray of its body, you would see that all the other tiny bones that make up the skeleton of the fish are connected to its spine. Paolo told me that even though all fish have backbones, some fish—like sharks and stingrays—have backbones that are made of lighter and more bendable **cartilage** instead of hard bone, allowing them to be more flexible and travel more quickly.

That leaves amphibians. Take a look at my animal friends one more time; pay close attention to the toad next to Tabitha. It's hard to tell when you look at a toad's body that there is a backbone inside! Now tell me—do toads have backbones? Yes, to be sure, they certainly do! Toads are vertebrates, too! All amphibians have backbones! That means that all five of the animals you've seen today are vertebrates. They all have backbones. The question I'm going to present to you, students, is this: Do all animals on Earth have backbones?

What are your predictions, boys and girls? We know that mammals—which include hippopotami, me, you, birds, fish, reptiles, and amphibians—are all vertebrates, too. Have we covered all the animal groups on Earth? Aha! Trick question! If you said no, your predictions were correct.

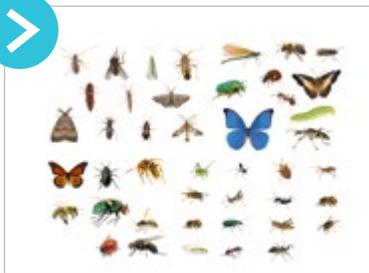


Check for Understanding

Ask students what they recall about insects from the Reader.

Do you remember if there are more vertebrates or more invertebrates on Earth? Good ideas! Look at this image that I shared with you earlier. Remember, more than 95 percent of all animal species are invertebrates, and insects are the biggest group of invertebrates. And there are still so many invertebrates yet to be discovered and classified!

As you can see in the image, vertebrates are actually only a teeny tiny group here on Earth. Because we tend to think and talk mostly about vertebrates, we sometimes forget that most of the animals in the world are actually invertebrates—and most of those are insects!



Show Image U2.L3.2 Insects

Think how many insects there must be on our planet! They make up three-quarters of all the species in the animal kingdom! Can you

name a few of the many animals in the insect group? Flies, wasps, beetles, cockroaches, ladybugs, and butterflies are all insects. There are surely a lot more species of insects than there are species of amphibians, mammals, birds, fish, and reptiles all put together!

Even though insects are by far the largest group of invertebrates, they are not the only invertebrates. Here's another question for you to think about. Close your eyes and pretend you are a taxonomist for a moment. Can you think of any other animals without backbones? Here's a hint: instead of internal vertebrae, these animals have an external, or outer, hard body covering.



Show Image U2.L3.3 Insects and Arachnids

The largest group of invertebrates is made up of arthropods. Insects make up the largest group of arthropods.

Another large group of arthropods includes arachnids. Spiders are arachnids, and so are ticks, daddy longlegs, and scorpions. Insects have six legs and three body parts. The ant in this image has very long antennae—they almost look like legs! In comparison, arachnids have eight legs and two body parts. Instead of having flexible internal skeletons, all of the arthropods wear a tough **exoskeleton**, or protective covering, on the outside. I bet you can recognize some of these common examples of insects and arachnids.



Show Image U2.L3.4 Crustaceans

A crustacean is another kind of invertebrate and also a type of arthropod. Crustaceans have exoskeletons and usually live in water.

Copepods are the smallest of the crustaceans. They are barely visible, but they are a very important source of food for fish in the ocean. Can anyone think of other animals that are classified as crustaceans? Good ideas! Some of the more common crustaceans include shrimp, lobsters, fiddler crabs, and blue crabs. These animals all have a hard exoskeleton, which protects the body and keeps it from drying out. Have you ever seen a crab? If you eat a blue crab like this one or a lobster, you have to remove its hard exoskeleton to find the tasty meat inside.



Show Image U2.L3.5 Other Invertebrates

Snails, jellyfish, and earthworms are also invertebrates. Other spineless creatures include coral, sea anemones, and sea stars. Many invertebrates are

small and hidden and may not even seem like animals, but they are by far the largest group of animals populating the Earth.

Challenge

Have students create a master list of all vertebrates and invertebrates discussed in the reading and Read-Aloud.



Show Image U2.L3.6 Classification of a Housecat

What a lot of ways there are to classify animals! The purpose of this classification system is to understand each organism better by

the characteristics that make it unique. Vertebrates and invertebrates are two types of animals in the world of taxonomy. It is just one way of classifying animals, but I think it is a very helpful way, don't you? You and I may not look at all alike, or much like Ebenezer, Tabitha, or Anna, but we have a very distinct similarity to one another. We all have backbones!

Look at this chart that shows how a group of familiar organisms are related to each other. On the top row, you can see a group of living organisms: a housecat, a mountain lion, a tiger, a seal, a turtle, a grasshopper, and a tree. In the next row titled "Kingdom," notice that one of the living organisms is no longer included: the tree. The tree actually belongs to a different kingdom. This row now shows only organisms that are part of the animal kingdom. In the next row, titled "Phylum," the grasshopper is no longer included. All of the rest of the animals represented here are vertebrates, part of the chordata phylum. In looking at the "Class" row, you may notice that the turtle is no longer included. The turtle is in the reptile class, and all of the other animals shown are mammals. In the row labeled "Order," the mouse is not included because it is not a carnivore like the other

animals shown. What’s true about all the animals in the next row, “Family?” That’s right; they are all different types of cats. In the “Genus” row, you can see that the housecat and mountain lion are more closely related than the tiger. And the very last row represents one specific animal, a species of housecat.

This process of starting out with many animals and ending up with just one is called the process of elimination. As we went down the list, we eliminated—or removed—any animals that no longer had anything in common.



DISCUSSING THE READ-ALOUD (25 MIN.)

TEKS 3.6.E; TEKS 3.6.F

1. **Literal.** What is a vertebrate?
 - » an animal with a backbone/spine
2. What groups of animals are considered vertebrates?
 - » reptiles, amphibians, fish, mammals, and birds
3. **Evaluative.** What is another name for the backbone in vertebrates?
 - » spinal column or spine
4. Why is the backbone or spinal column of vertebrates so important?
 - » It protects the bundle of nerves—the spinal cord—that carries messages to the brain.
5. **Inferential.** What very large group of animals is not in the vertebrate group?
 - » insects
6. **Evaluative.** *Think-Pair-Share.* How would your life be different if you did not have a backbone?
 - » Answers may vary, but students may say they might have an exoskeleton, or protective covering, on the outside.
 - Have students take out Activity Page 3.2.
 - Say: “The foldable will be used throughout the unit to record our findings about the animals listed.”
7. **Literal.** What groups of animals are considered vertebrates?
 - » reptiles, amphibians, fish, mammals, and birds (students will circle vertebrate or invertebrate on their foldable for each animal listed)

Activity Page 3.2



TEKS 3.6.E Make connections to personal experiences, ideas in other texts, and society; **TEKS 3.6.F** Make inferences and use evidence to support understanding.

- Have students take out Activity Page 3.3 and an orange or yellow marker.
- Teacher Modeling: Read aloud the short passages on the front side. Model finding and highlighting topics that are the same using a yellow marker. Model circling information that is different using an orange marker.
- Independently, have students compare and contrast the two texts. Students will continue to highlight topics that are the same with a yellow marker and topics that are different with an orange marker.
- If time permits, students may begin drawing the animals listed on the front of their foldable. Note: Students may draw any insect, fish, amphibian, reptile, bird, and mammal of their choice.



Check for Understanding

If students could not identify similar and different information in both passages, then have them reread the passages on Activity Page 3.3 and draw a picture to summarize the passages. Have students compare their drawings. What is alike? What is different?

Activity Page 3.3



Support

Teacher-led discussion in small groups to complete Activity Page 3.3.



**ENGLISH
LANGUAGE
LEARNERS**

Reading Closely

Beginning

Work with a small group and determine if these sentences are alike or different:

- Insects include flies, wasps, beetles, cockroaches, ladybugs, and butterflies.
- Other invertebrates include earthworms and spiders; spiders are arachnids.

Intermediate

Provide partners with the same sentences from the Activity Page and determine if they are alike or different.

Advanced/Advanced High

Provide students with the same sentences from the Activity Page and independently determine if they are alike or different.

ELPS 4.E

Challenge

Students complete Activity Page 3.3 independently.

Lesson 3: Vertebrate or Invertebrate?

Language



Primary Focus: Students will determine the meaning of words formed when *-ed* or *-ing* are added to a known root word. **TEKS 3.3.C**

ENGLISH LANGUAGE LEARNERS



Using Verbs and Verb Phrases

Beginning

Working with a small group, have students create a sentence using the following words: *dog*, *ran*, and *brown*.

Intermediate

Have students work in a small group to create a sentence using the following words: *dog*, *ran*, and *brown*.

Advanced/ Advanced High

Have students work independently to create a sentence using the following words: *dog*, *ran*, and *brown*.

ELPS 5.F

NOUNS, VERBS, AND ADJECTIVES (10 MIN.)

- Review the Parts of Speech poster that you prepared in advance with students from Lesson 2 (DP.U2.L2.1).

Parts of Speech	
Nouns are words that name people, places, or things.	
Common nouns are general and are not capitalized.	Proper nouns are specific and are capitalized.
Verbs are words that show action.	
Adjectives are words that describe nouns.	

- Divide the class into three groups. Assign one group to be the nouns, one group to be the verbs, and the last group to be the adjectives.
- Tell students you will read sentences to them and they are to stand up when they hear the part of speech that they represent.
- Tell students they will practice with the first sentence by listening to you read it twice: once, quickly, while students merely listen, and then again, slowly, while students stand up at their part of speech.
- Read the following sentence to the students:
 - My green dinosaur sings silly songs.
- Read it again slowly, pausing after each word so students can stand up for their part of speech (nouns = *dinosaur*, *songs*; verb = *sings*; adjectives = *my*, *green*, *silly*).
 - Your little sister makes goofy faces. (nouns = *sister*, *faces*; verb = *makes*; adjectives = *your*, *little*, *goofy*)

TEKS 3.3.C Identify the meaning of and use words with affixes such as im- (into), non-, dis-, in- (not, non), pre-, -ness, -y, and -ful.

- The furry black kitten mewed and scratched my leg. (nouns = *kitten, leg*; verbs = *mewed, scratched*; adjectives = *furry, black, my*)
- Assign groups of students to a new part of speech.
 - Tammy eats tasty pizza, juicy peaches, and a green salad. (nouns = *Tammy, pizza, peaches, salad*; verb = *eats*; adjectives = *tasty, juicy, a, green*)
 - Our favorite uncle asks snoopy questions and expects truthful answers. (nouns = *uncle, questions, answers*; verbs = *asks, expects*; adjectives = *our, favorite, snoopy, truthful*)
 - Spicy spaghetti and fat meatballs taste great. (nouns = *spaghetti, meatballs*; verb = *taste*; adjectives = *spicy, fat, great*)
- If there is additional time, have students make up sentences that have nouns, verbs, and adjectives and follow the procedure outlined above.

SPELLING: BLANK BUSTERS (5 MIN.)

- Tell students that they will practice writing their spelling words for the week.
- Tell students to take out Activity Page 3.4.
- Ask all students to read the statement in Number 1 silently and fill in the blank. Point out to students that the root words are listed in the box on the worksheet but they may need to use other forms of a root word with *-ed* or *-ing* added. These other words are not listed on the worksheet but are listed on the table displayed in the classroom with this week's spelling words.
- When students have completed Number 1, call on one student to read Number 1 aloud with the blank filled in with the spelling word.
- Discuss the proper spelling of the word in the blank, referencing the table of this week's spelling words. Have students compare their spelling with the spelling in the table. Also, discuss the correct answer to be sure students understand why it is correct.
- Have students finish and complete Activity Page 3.4 for take-home work.

~~~~~  
 End Lesson  
 ~~~~~

Activity Page 3.4



Activity Page 3.4



Lesson 3: Vertebrate or Invertebrate?

Take-Home Material

- Have students complete Activity Page 3.4.

4

Warm- or Cold-Blooded?

PRIMARY FOCUS OF LESSON

Speaking and Listening

Students will identify the central idea in passages about warm- and cold-blooded animals. **TEKS 3.1.A; TEKS 3.7.F; TEKS 3.9.D.i**

Reading

Students will identify supporting details in a passage about warm- and cold-blooded animals. **TEKS 3.6.G; TEKS 3.9.D.ii**

Writing

Students will write a short reflection about an interesting animal to further research. **TEKS 3.7.B**

Language

Students will determine the meaning of words formed when *un-* and *non-* are added to a known root word. **TEKS 3.2.A.v; TEKS 3.3.C**

FORMATIVE ASSESSMENT

- Activity Page 4.2** **Warm-Blooded and Cold-Blooded Animals** List statements that refer to warm-blooded or cold-blooded animals. **TEKS 3.6.G**
- Activity Page 4.3** **Field Journal** Identify which animal you would want to be and why. **TEKS 3.7.B**
- Activity Page 4.4** **Prefixes *un-* and *non-*** Write the correct word in each sentence. **TEKS 3.2.A.v; TEKS 3.3.C**

TEKS 3.1.A Listen actively, ask relevant questions to clarify information, and make pertinent comments; **TEKS 3.7.F** Respond using newly acquired vocabulary as appropriate; **TEKS 3.9.D.i** Recognize characteristics and structures of informational text, including: the central idea with supporting evidence; **TEKS 3.6.G** Evaluate details read to determine key ideas; **TEKS 3.9.D.ii** Recognize characteristics and structures of informational text, including: features such as sections, tables, graphs, timelines, bullets, numbers, and bold and italicized font to support understanding; **TEKS 3.7.B** Write a response to a literary or informational text that demonstrates an understanding of a text; **TEKS 3.2.A.v** Demonstrate and apply phonetic knowledge by: decoding words using knowledge of prefixes; **TEKS 3.3.C** Identify the meaning of and use words with affixes such as *im-* (into), *non-*, *dis-*, *in-* (not, non), *pre-*, *-ness*, *-y*, and *-ful*.

LESSON AT A GLANCE

	Grouping	Time	Materials
Speaking and Listening (45 min.)			
Introducing the Read-Aloud	Whole Group	10 min.	<input type="checkbox"/> Activity Page 3.2, 4.1 <input type="checkbox"/> Central Idea and Supporting Details chart (Digital Projections) <input type="checkbox"/> Digital Flip Book: U2.L4.1–7
Presenting the Read-Aloud	Whole Group	20 min.	
Discussing the Read-Aloud	Whole Group	10 min.	
Word Work: <i>Constant</i>	Whole Group	5 min.	
Reading (30 min.)			
Introducing the Reading	Whole Group	5 min.	<input type="checkbox"/> Central Idea and Supporting Details Chart (Digital Projections) <input type="checkbox"/> <i>Rattenborough's Guide to Animals</i> <input type="checkbox"/> Half sheets of blank paper <input type="checkbox"/> Activity Page 4.2
Presenting the Reading	Whole Group	15 min.	
Discussing the Reading	Independent	10 min.	
Writing (15 min.)			
Field Journal	Independent	15 min.	<input type="checkbox"/> Activity Page 4.3
Language (30 min.)			
Morphology	Whole Group/ Independent	20 min.	<input type="checkbox"/> Activity Page 3.4, 4.4 <input type="checkbox"/> Prefix Chart (Digital Projections)
Spelling	Whole Group	10 min.	
Take-Home Material			
Warm-Blooded and Cold-Blooded Animals			<input type="checkbox"/> Activity Page 4.5

ADVANCE PREPARATION

Speaking and Listening

- On chart paper create the following or prepare Digital Projection DP.U2.L4.1

Central Idea and Supporting Details

Central Idea

The central idea is what the text is mostly about.

Clues to Finding the Central Idea:

- “What is the text mostly about?”
- Look at the title.
- Look at the pictures and captions.
- Check the first and last sentence.
- Notice words that are repeatedly used.

Supporting Details

These support the central idea.

Clues to Finding Supporting Details:

- facts that tell you more about the central idea
 - details that tell you more about the central idea
- Identify the following Digital images on the program’s digital components site to project during the Read-Aloud: U2.L4.1–7.

Language

- On chart paper create the following or prepare Digital Projection DP.U2.L4.2.

Prefix

A **prefix** is a syllable placed in front of a root word. Prefixes change the meaning of the root word.

Universal Access

Flashcards Matching Game

- Give each small group 12 index cards. Three cards read “warm-blooded.” Three cards read “cold-blooded.” Three cards have photos of warm-blooded animals: dog, bear and bird. Three cards have photos of cold-blooded animals: snake, toad, and crocodile.

- Students must match the photo with the correct card. Teacher circulates and assists if students are struggling to match cards correctly.
- Ask students to define “warm-blooded” and “cold-blooded” on the flashcards. Students can collaborate or work individually on definition.

Start Lesson

Lesson 4: Warm- or Cold-Blooded?

Speaking and Listening



Primary Focus: Students will identify the central idea in passages about warm- and cold-blooded animals. **TEKS 3.1.A; TEKS 3.7.F; TEKS 3.9.D.i**

VOCABULARY FOR “COLD-BLOODED AND WARM-BLOODED ANIMALS”

- The following are core vocabulary words used in this lesson. Preview the words with the students before the lesson. Students are not expected to be able to use these words immediately, but with repeated exposure throughout the lessons they will acquire a good understanding of most of the words. Students may also keep a “unit dictionary” notebook along with definitions, sentences, and/or other writing exercises using these vocabulary words.

cold-blooded, having a body temperature that changes with the temperature of the environment

constant, not changing very much and staying steady and even

huddle, to crowd or squeeze together in a group

internal, on the inside or center of an object or organism

warm-blooded, being able to control internal body temperature by making heat within the body and having ways to cool the body down when needed

TEKS 3.1.A Listen actively, ask relevant questions to clarify information, and make pertinent comments; **TEKS 3.7.F** Respond using newly acquired vocabulary as appropriate; **TEKS 3.9.D.i** Recognize characteristics and structures of informational text, including: the central idea with supporting evidence.

Activity Page 4.1



Vocabulary Chart for “Cold-Blooded and Warm-Blooded Animals”		
Type	Tier 3 Domain-Specific Words	Tier 2 General Academic Words
Vocabulary	cold-blooded warm-blooded	constant huddle internal
Multiple-Meaning Core Vocabulary Words		
Sayings and Phrases		

INTRODUCING THE READ-ALoud (10 MIN.)

- Remind students that in the previous lesson they learned about vertebrates and invertebrates. Ask students what they recall about the lesson.
- Have students take out Activity Page 4.1, “All My Best Friends Represent Vertebrates.” Tell students that this is a fun and easy way to remember the names of the five animal groups that Rattenborough’s good friends belong to. Introduce the mnemonic chorally. Go over what each letter stands for: “A” for Amphibians, “M” for Mammals, “B” for Birds, “F” for Fish, “R” for Reptiles, and “V” for Vertebrates. Explain that the sixth letter and word helps to make this memory aid make sense and names the bigger group the five groups belong to.
- Tell students that today’s lesson will focus on identifying the central idea and supporting details.
- Refer to the previously created chart or display digital Projection DPU2.L4.1. Read the chart aloud to the class.
 - **Projection DPU2.L4.1**
- Guess the Central Idea: Explain that during today’s Read-Aloud, students are going to listen for the central idea. However, before listening to the Read-Aloud, the class will play a game called “Guess the Central Idea.” Explain that students will be given one clue at a time. After each new clue is given, students may guess the central idea.

- **Mystery Central Idea 1**

- I am a vertebrate.
- I swim in fresh water and salt water.
- I move around using my fins and breathe oxygen through my gills underwater.
 - » Answer: fish

- **Mystery Central Idea 2**

- I am an invertebrate.
- I have a red shell with black spots.
- I sometimes find my way into your house.
 - » Answer: ladybug

- **Mystery Central Idea 3**

- I am a vertebrate.
- I slither along the ground and climb up trees.
- I have a pair of ribs attached to my vertebra.
 - » Answer: snake

- Explain that all the clues given, or supporting details, were about the central idea.
- Purpose for Listening: Tell students that we will be listening to the Read-Aloud and determining the central idea.
- Have students take out Activity Page 3.2 (foldable from Lesson 3) to fill in during the Read-Aloud.

Activity Page 3.2



PRESENTING THE READ-ALoud (20 MIN.)

Support

Review the five animals that are vertebrates: amphibians, mammals, birds, fish, and reptiles.

Explain that the five animals from this list will be sorted again as warm or cold-blooded animals.

Challenge

Have students identify the central idea and supporting details in the Read-Aloud.



Show Image U2.L4.1

Rattenborough's scrapbook page, "Vertebrate Animals Around the World"

Hi, boys and girls. I have brought along my slide show once again.

Today we're going to look at slides

of my friends, some of whom are **cold-blooded** animals and some of whom are **warm-blooded** animals. By the sound of it, you would think that warm-blooded animals have warm blood and cold-blooded animals have cold blood, but this is not the case. The body temperature of a cold-blooded animal changes according to the surroundings, or environment of that animal, whereas a warm-blooded animal maintains about the same temperature all of the time. I heard that you are keeping a foldable to sort, or classify, animals into groups. What a great idea! You are practicing taxonomy, the study of classifying organisms, exactly like taxonomists do!

You're going to be learning how to sort animals in lots of different ways. Today we are going to sort these five vertebrate groups into two smaller groups. By discovering some common characteristics, you'll learn how to tell which animals are cold-blooded and which animals are warm-blooded. Now I'd like to help you understand a little more about cold-blooded animals.



Show Image U2.L4.2

Paolo and piranhas

Paolo Piranha lives in the country of Colombia on the continent of South America. He's a fish. His body temperature, the measure of how

warm his body is on the inside, changes with his surroundings. Right now, his temperature is the same as the water in which he is swimming. When *you* go swimming, chances are the water is colder

than your body temperature. Paolo does not ever feel cold in water, because there is no difference between his temperature and the water temperature where he lives.



Show Image U2.L4.3 Taking child's temperature

Have any of you ever used a thermometer? Perhaps when you are sick, your parents or a nurse might measure your temperature with a

thermometer. When warm-blooded people get ill, their temperatures often rise, or go up. A person's normal body temperature is about 98.6 degrees Fahrenheit, and it remains **constant**, or about the same, most of the time. That's very different from Paolo! The way in which an animal's body temperature is controlled determines whether it is a cold-blooded or warm-blooded animal.

My friend Paolo told me that his **internal**, or inside, body temperature is never constant. It does not stay the same. He cannot heat his body from the inside like you, so his temperature must change with his surroundings in order for his body to work properly. He becomes hot when it is hot around him and cold when it is cold around him.

- Picture Pause: Explain to students that during the next part of the Read-Aloud, they should listen for the central idea.

So, you see, although you and Paolo are both vertebrates, you also have differences. One of you is cold-blooded and one of you is warm-blooded. You're right! You are warm-blooded. So that makes Paolo ... Yes! Cold-blooded! Most fish are cold-blooded. In fact, most animals on Earth are cold-blooded. Two of my other friends are cold-blooded as well. Does anyone know who else among them is cold-blooded? Great answers! Next, I'd like to tell you a little about Anna Anaconda.

- Picture Pause: Model for the whole class that the central idea is that vertebrates are warm- and cold-blooded. This is what the paragraph is mostly about.



Show Image U2.L4.4 **Anna and anaconda**

Like Paolo, Anna lives in the rainforest of South America, but in the country of Peru. Does anyone remember what group of animals Anna belongs to?

That's right! Anna Anaconda is classified as a reptile, and she shares some of Paolo's characteristics. They're both cold-blooded, but that doesn't mean that they don't enjoy being warm. Anna loves the heat! Her body is very long indeed, and she told me that one of her favorite things to do is **bask** in the sun. The sun helps her stay warm, and her body soaks up the heat from the warm ground as well. Because she cannot control her own body temperature, Anna depends upon the sun and her warm surroundings to keep properly warm. In fact, my other cold-blooded friend, Tabitha Toad, likes the sun, too!



Show Image U2.L4.5 **Tabitha and toad**

Frogs and toads share some of the same characteristics as fish and reptiles. They use their surroundings to maintain—or keep constant—the

proper body temperature. Yes, indeed, Tabitha Toad is cold-blooded, just like Paolo and Anna.

And, like Paolo and Anna, Tabitha is very comfortable around water. She comes from the Amazon rainforest in the country of Brazil. But just because her home is near the largest river in the world, it doesn't mean she lives in water all the time. Tabitha and all toads are actually more comfortable on land, whereas frogs prefer to be wet. Tabitha is an amphibian, which means that she can live both in and out of the water.

- Picture Pause: Explain to students that during the next part of the Read-Aloud, they should listen for the central idea.

So, there you have it—fish, reptile, amphibian—three groups of cold-blooded creatures. Their body temperatures change depending upon where they are, becoming warm when their surroundings are warm and cold when it's cold around them. Because they do not have constant body temperatures, they can easily become too hot or too cold. They have developed characteristics and behaviors so that they can live in certain habitats.

- Picture Pause: Ask students to recall the central idea: Fish, reptiles, and amphibians are all cold-blooded.
- Have students classify fish, reptiles, and amphibians as cold-blooded on Activity Page 3.2.



Show Image U2.L4.6 Ebenezer and egret

Let's learn a little about two of my other friends, my warm-blooded friends—a bird, Ebenezer Egret, and a fellow mammal, Hilda Hippo.

Mammals and birds produce their own body heat internally, which keeps their body temperatures constant.

One thing's for sure: Ebenezer Egret does not put on a winter coat like you do when it's cold outside! Of course, he doesn't need to put on an extra coat because he already has a brilliant coat of feathers! Feathers help keep Ebenezer warm. Want to know an interesting fact that Ebenezer shared with me while I was visiting South Africa? Egrets' beautiful white feathers were once prized by hat-makers who used them for the sake of women's hat fashion and beauty—not warmth. Imagine that! Birds that live in cold climates sometimes travel south for the winter to make it easier to stay warm and find more available food. Often, physical characteristics help an animal



**ENGLISH
LANGUAGE
LEARNERS**

Speaking and Listening Exchanging Information and Ideas

Beginning

In a small group, ask students to fill in the blanks to the following sentences: Some vertebrates are ____ and some are cold-blooded. Amphibians, ____, and ____ are ____-blooded.

Intermediate

With a partner, have students discuss the difference between cold-blooded and warm-blooded animals.

Advanced/ Advanced High

Independently, have students list warm-blooded animals. Additionally, have them describe something a warm-blooded animal does to stay warm.

ELPS 3.D; ELPS 3.E;

ELPS 3.G

stay warm. Ebenezer wears a coat of feathers, and I wear a coat of fur. Are you wondering what Hilda Hippo uses for a little additional warmth because she doesn't have fur? Let's take a look and see!



Show Image U2.L4.7 Hilda and hippopotamus

I have a bit of news for you—in the hot tropical climates of Africa where Hilda Hippo lives, trying to stay cool is a more common occurrence than

trying to stay warm. Hilda's body design is perfect for helping her stay cool! She has a nice layer of blubber that insulates her and helps her float. Hippopotami spend lots of time in the water of lakes and rivers to escape the heat. Can you see any other characteristics of the hippopotamus that help it stay in the water for long periods of time? Good observations! Notice how having its nostrils, eyes, and ears on the top of its head lets the hippopotamus keep most of its body under water where it can stay cool!

Ebenezer also uses water to stay cool. Even though egrets can't swim, they do spend lots of time wading in the water, mostly to get their dinner! They feast on fish and toads and plenty of insects in order to store up the energy needed to control their body temperature.

Well, everybody, our time is up for today. You have learned a lot about the taxonomy of cold-blooded and warm-blooded animals, so now you can fill in your Foldable. I can't wait to see all of you again and continue with the show! Bye for now!

DISCUSSING THE READ-ALoud (10 MIN.)

- Have students finish classifying animals as warm-blooded or cold-blooded on Activity Page 3.2.
1. **Literal.** What groups of animals did you hear about that are cold-blooded?
 - » fish, amphibians, reptiles

2. What groups of animals did you hear about that are warm-blooded?
 - » birds and mammals
3. **Literal.** What do we mean when we say an animal is warm-blooded?
 - » It regulates its body temperature internally to keep a constant internal temperature all the time.
4. Describe some ways that warm-blooded animals help their bodies stay warm when it is especially cold outside.
 - » They eat food, hibernate, have feathers or fur.
5. Describe some things a warm-blooded animal does to help its body cool off when the outside temperatures are especially hot.
 - » sweat, pant, drink water, go in cool water
6. **Evaluative.** You learned that humans are warm-blooded animals. Why is it that humans can live in many different environments?
 - » Warm-blooded animals regulate their body temperature internally; energy from food helps warm them; they add or remove layers of clothing; they heat or cool their house; etc.



WORD WORK: CONSTANT (5 MIN.)

TEKS 3.7.F

- In the Read-Aloud, you heard, “A person’s normal body temperature is about 98.6 degrees Fahrenheit and it remains *constant*”
- Something that is constant does not change very much; it stays steady and even.
- “Miguel’s grandfather is a constant support to him when he needs help with his math homework.”
- Have you ever noticed something or someone in your life that is constant, or that stays steady? What or who is it? Be sure to use the word *constant* when you tell about it.
- Ask two or three students. If necessary, guide and/or rephrase the students’ responses to make complete sentences: “The thing in my life that stays constant is _____.”
- What’s the word we’ve been talking about? What part of speech is the word *constant*?



TEKS 3.7.F Respond using newly acquired vocabulary as appropriate.

- Use a Making Choices activity for follow-up. Directions: “I am going to name a situation. If what I name is an example of something that is steady and constant, say, ‘That is constant.’ If what I name is an example of something that changes a lot and is not constant, say, ‘That is not constant.’”
 - On some days, Janine is friendly to me and on other days she doesn’t talk to me.
 - » *That is not constant.*
 - My aunt is always willing to talk when I have a problem to solve.
 - » *That is constant.*
 - My pet snake’s temperature goes up and down depending on whether she is lying under the heat lamp or not.
 - » *That is not constant.*
 - Eating a good breakfast every day helps me think clearly at school.
 - » *That is constant.*
 - Sam’s internal body temperature stays about the same whether it is a cold, blustery winter night or a hot, muggy summer afternoon.
 - » *That is constant.*

Lesson 4: Warm- or Cold-Blooded?

Reading



Primary Focus: Students will identify supporting details in a passage about warm- and cold-blooded animals. **TEKS 3.6.G; TEKS 3.9.D.ii**

VOCABULARY FOR “WARM-BLOODED AND COLD-BLOODED ANIMALS”

- The following are vocabulary words used in this lesson. Preview the words with the students before the lesson and refer back to them at appropriate times. The words also appear in the glossary in the back of the student reader.

mammal, an animal that gives birth, has hair, feeds milk from its own body to its young, and is warm-blooded

TEKS 3.6.G Evaluate details read to determine key ideas; **TEKS 3.9.D.ii** Recognize characteristics and structures of informational text, including: features such as sections, tables, graphs, timelines, bullets, numbers, and bold and italicized font to support understanding.

reptile, a cold-blooded animal with tough, scaly skin that uses its surroundings to control its body temperature

scale, a thick, small disc on the outside of the bodies of some animals, such as fish and reptiles (scales)

temperature, the measurement of how hot or cold something is

constant, not changing very much and staying steady and even

cold-blooded, having a body temperature that changes with the temperature of the environment

warm-blooded, being able to control internal body temperature by making heat within the body and having ways to cool the body down when needed

Vocabulary Chart for “Warm-Blooded and Cold-Blooded Animals”		
Type	Tier 3 Domain-Specific Words	Tier 2 General Academic Words
Vocabulary	mammal reptile scale cold-blooded warm-blooded	constant temperature
Multiple-Meaning Core Vocabulary Words		
Sayings and Phrases		

INTRODUCING THE READING (5 MIN.)

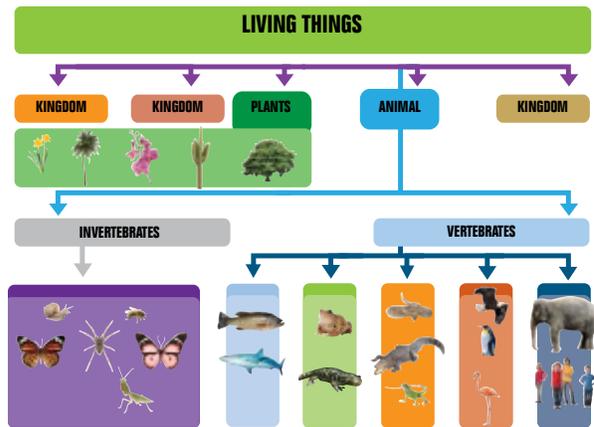
- Review the Central Idea and Supporting Details chart to the whole group. Explain that in the Read-Aloud, the focus was on finding the central idea. During the reading, the focus will be on identifying the central idea and supporting details. Explain that supporting details support the central idea. Supporting details are facts or details that tell you more about the central idea.
- Explain to students that today’s reading is also about warm- and cold-blooded animals.
- Tell students that today’s chapter is called “Warm-Blooded and Cold-Blooded Animals.”
- Ask students to turn to the Table of Contents, locate the chapter, and then turn to the first page of the chapter.

Chapter **4** **Warm-Blooded and Cold-Blooded Animals**



Rattenborough, here again! In Chapter 2, you learned how scientists **classify** living things into one group called **kingdoms**. You learned about the animal and plant **kingdoms**. You also learned that animals and other living things are classified into more specific groups.

Today, you will learn more about the animal **kingdom**. You will learn that there are many kinds of animals that have different **characteristics**. Scientists study these different **characteristics** to divide the animal **kingdom** into more specific groups.



Scientists **classify** living things by different **characteristics**.

PRESENTING THE READING (15 MIN.)

Pages 26–27

- Read the title of the chapter together as a class: “Warm-Blooded and Cold-Blooded Animals.”
- “Where in the Reader could we find the definition of *warm-blooded* quickly?”
 - » the glossary
- Note for students that the word *warm-blooded* is not capitalized in the glossary but is capitalized in the title of the chapter.
- Ask students to find the word in the glossary.
- Call on one student to identify where the word is and read the definition.
- Redirect students’ attention to **page 26**. Have them locate the word *cold-blooded* in the title. Again, note for students that the word *cold-blooded* is not capitalized in the glossary but is capitalized in the title of the chapter.

- Have one student read Rattenborough's greeting in the first paragraph on **page 26**. Have students read the caption and look at the image on **page 27**.
- Read aloud **pages 26–27**. Using the image on **page 27**, ask students to point out differences they see among the different groups of animals.
 - » one is birds, one is fish, one is insects, etc.

Do you think this crocodile is a **mammal**?



Many animals—such as cats, mice, rats, cows, elephants, tigers, and even people—belong to a group called **mammals**. So, you and I are **mammals**! All **mammals** have hair, but some have more hair, or fur, than others. You have to get pretty close to an elephant to see its hair, but it is a **mammal**.

Another **characteristic** of **mammals** is that they give birth to live babies. **Mammal** babies begin breathing, moving, and looking for food as soon as they are born. **Mammal** mothers make milk to feed their newborns. This is another key **characteristic** of all **mammals**.

Answer: No!

Why not?

- Crocodiles have **scales**, not hair or fur.
- Crocodiles lay eggs and baby crocodiles hatch from those eggs.
- A baby crocodile does not get milk from its mother. Its first meal might be a bug. Later, he'll eat bigger animals.

Crocodiles belong to a different group of animals called **reptiles**, along with snakes, lizards, and turtles.

Pages 28–29

- Ask students to read **page 28** to themselves to answer the question: “What are some characteristics of mammals?”
- When students have finished reading, restate the question and ask students to answer.
 - » have hair, give birth to live babies, mothers make milk to feed newborns
- Explain to students that the central idea of the paragraph is mammals. The supporting details are all of the characteristics of mammals.
- Tell students to read **page 29** to themselves to answer the question: “What characteristics do crocodiles have?”
- When students have finished reading, restate the question and ask students to answer.
 - » scales, lay eggs from which babies hatch, babies do not get milk from their mother

- Ask students: “What is the central idea of the passage?”
 - » crocodiles
- What are the supporting details?
 - » scales, lay eggs, babies do not get milk from their mother



Exchanging Information and Ideas

Beginning

Students use a concept map and write “warm-blooded” in center circle. As a small group, add one supporting detail/characteristic about warm-blooded animals.

Intermediate

With a peer, students complete concept map with “warm-blooded” in the center and provide three supporting details/characteristics.

Advanced/ Advanced High

Independently, students draw a concept map with “warm-blooded” in the center and provide four supporting details about warm-blooded animals or mammals. When finished, have them share their concept map and discuss with another student.

ELPS 1.C; ELPS 3.E;

ELPS 4.D

Support

Draw a picture with the central idea (mammals) and supporting details (have hair, give birth to live babies, mothers make milk to feed newborns).

Scientists also **classify** animals as **mammals** or **reptiles** based on how the animals control their body **temperature**. All animals need to keep a **constant temperature** inside their bodies for their bodies to work properly. If an animal gets too hot or too cold, its body will not work the way it should. An animal may become sick or even die.

Mammals are **warm-blooded** animals. When **warm-blooded** animals are in a cold place, they use energy from food they eat to help keep their bodies warm. Some **warm-blooded** animals shiver to keep warm. When they shiver, their bodies make heat to keep warm.

When **warm-blooded** animals are somewhere hot, their bodies react in a different way to cool off. Some **warm-blooded** animals, like people, sweat to stay cool. Dogs pant to stay cool. Other **warm-blooded** animals drink lots of water as a way to cool off. Did you know that cows need to drink almost a bathtub full of water a day?

Warm-blooded animals act in different ways to maintain a **constant temperature** inside their bodies. **Mammals** can live in **habitats** with different **temperatures** because their bodies do not rely on the environment. **Warm-blooded** animals, like **mammals**, must eat often to make energy to heat or cool their bodies. Most **warm-blooded** animals need to eat every day. Some need to eat every hour!

Pages 30–31

- Write *constant* and *temperature* on the board. Have students find the words on **page 30**. Tell students that these words are often used together in this chapter, but that each word has its own meaning and can be found separately in the glossary. Note for students that *temperature* is also used in this chapter.
- Tell students to find the word *constant* in the glossary. Ask students to read its definition.
- Repeat the procedure for *temperature*. Then, ask students if they can give a definition for *constant temperature*.
 - » how hot or cold something is that does not change
- Tell students to read **page 30** to themselves.

- Ask students if they see any new vocabulary words.
 - » no
- Pass out one half-sheet of paper to each student. Tell students to read **page 31** to themselves and write the central idea and supporting details on the piece of paper.
- When students are finished with their piece of paper, have students crumple up the paper and place it in the center of the room. Teacher reads aloud from one piece of paper from the pile. Class discusses the paper to determine if the correct central idea and supporting details are listed.
 - » Central idea: warm-blooded animals cool off in different ways. Supporting details: animals sweat, pant, and drink lots of water



Check for Understanding

If students had difficulty finding the central idea and supporting details, project the passage from **page 31** and underline the central idea and supporting details.

Reptiles are **cold-blooded** animals. The body **temperature** of **cold-blooded** animals changes depending on the outside **temperature**. They become hot when it is hot outside and cold when it is cold outside. But **cold-blooded** animals must also keep a **constant temperature** for their bodies to work properly.

Cold-blooded animals do not use energy from their bodies to stay warm or cool. Instead they use what is around them to keep warm or keep cool. Crocodiles stay in water or mud in order to stay cool on hot days. If they need to warm up on cooler days, they bask in the sun.

While **warm-blooded** animals can live in just about any **habitat**, **cold-blooded** animals can only live in certain **habitats**.

Cold-blooded animals do not need to eat as often as **warm-blooded** animals. This is because they do not need lots of food to make energy to warm or cool their bodies. Most crocodiles only eat once a week, but they can live for months and sometimes years without eating!



Cold-blooded animals like these crocodiles cool off by taking a swim when it's too hot. When it's cool outside, they warm up in the sun.

Pages 32–33

- Tell students to read **pages 32–33** to themselves.

DISCUSSING THE READING (10 MIN.)

- Have students take out Activity Page 4.2 and complete independently. Students may use their Reader to go back into the text to support their answers.

Activity Page 4.2



**ENGLISH
LANGUAGE
LEARNERS**

Writing
Exchanging Information
and Ideas

Beginning

Students write a short response with a peer using the sentence starter: "I want to learn more about ____."

Intermediate

Students write a short response with a peer using the sentence starter: "I want to learn more about ____." Add another sentence: "I like this animal because ____."

Advanced/Advanced High

Students write a short reflection independently and expand on the topic sentence. Students state at least two reasons why the animal is interesting.

ELPS 5.G

Activity Page 4.3



Lesson 4: Warm- or Cold-Blooded?

Writing



- ✚ **Primary Focus:** Students will write a short reflection about an interesting animal to further research. **TEKS 3.7.B**

✚ FIELD JOURNAL (15 MIN.) **TEKS 3.7.B**

- Have students take out Activity Page 4.3.
- The journal entry today asks "If you could be one animal in the readings from today, which would you be? Give three reasons why you chose your animal."
- Students will record their answers on Activity Page 4.3.

Lesson 4: Warm- or Cold-Blooded?

Language



- ✚ **Primary Focus:** Students will determine the meaning of words formed when *un-* and *non-* are added to a known root word. **TEKS 3.2.A.v; TEKS 3.3.C**

✚ MORPHOLOGY (20 MIN.) **TEKS 3.2.A.v; TEKS 3.3.C**

Introduce Prefixes *un-* and *non-*

- Remind students that this week's spelling words focus on adding the suffixes *-ed* and *-ing* to root words. Tell students that, today, they will continue to study root words, but they will focus on a different type of word part called a prefix.
- Explain that prefixes are added to the beginning of words while suffixes are added to the end of words.

- ✚ **TEKS 3.7.B** Write a response to a literary or informational text that demonstrates an understanding of a text; **TEKS 3.2.A.v** Demonstrate and apply phonetic knowledge by: decoding words using knowledge of prefixes; **TEKS 3.3.C** Identify the meaning of and use words with affixes such as *im-* (into), *non-*, *dis-*, *in-* (not, non), *pre-*, *-ness*, *-y*, and *-ful*.



Beginning

Write sticky notes: “un–,” “safe,” and “well.” On back of “un– ” write “not.” Join sticky notes to form “un+safe” and “un+well.”

Intermediate

Write sticky notes: “un–,” “safe,” and “well.” On back of “un–” write “not.” Join sticky notes: “un+safe.” Repeat: “un+well.” What’s difference between feeling safe vs. unsafe; well vs. unwell?

Advanced/

Advanced High

Write sticky notes: “un–,” “safe,” “necessary,” and “well.” Discuss meaning of “necessary” vs. “unnecessary” with peer. Discuss how adding prefix changes meaning.

ELPS 1.C; ELPS 1.F

Activity Page 4.4



Support

Complete Activity Page 4.4 as a teacher-guided activity.

- Refer to the previously created chart or display Digital Projection DP.U2.L4.2.

➤ Projection DPU2.L4.2

Prefix

A **prefix** is a syllable placed in front of a root word. Prefixes change the meaning of the root word.

- Emphasize for students that the *features* of prefixes are that they are added to the beginning of a root word, they change the meaning of the root word, they add a syllable to the beginning of the root word, and they may change the part of speech of the word.
- Tell students that the two prefixes they will study this week are *un–* and *non–*. Explain that both *un–* and *non–* have the same meaning, which is “not.”
- Write the word *safe* on the board or chart paper. Discuss the meaning of the word.
 - » Protected from harm or danger; It is safe to cross the street when the police officer signals us to go.
- Add the prefix *un–* to *safe* and have students read the prefix, read the new word, and then discuss the meaning of the new word.
 - » not protected from harm or danger
- Ask students for examples of things that could be described as *unsafe*.
 - » Answers may vary but could include broken glass, wires hanging down, riding a bicycle without a helmet, etc.
- Write the root word *living* on the board or chart paper. Briefly discuss the meaning of *living* (*alive*) and then use it in a sentence. (*You are a living descendant of your grandparents.*)
- Note for students that the root word of *living* is *live*, one of this week’s Challenge Words.
- Add the prefix *non–* to *living* and have students read the prefix, read the new word, and then discuss the meaning of the new word (*not alive*).
- Students will complete Activity Page 4.4.

SPELLING (10 MIN.)

- Review the spelling words that you introduced earlier this week using the table displayed on the board.

Root Word	-ed	-ing
hop	hopped	hopping
rub	rubbed	rubbing
ship	shipped	shipping
grab	grabbed	grabbing
patch	patched	patching
plan	planned	planning
stretch	stretched	stretching
finish	finished	finishing
discuss	discussed	discussing
submit	submitted	submitting
Challenge Word: give		
Challenge Word: live		

- Ask students to turn to Activity Page 3.4, which they completed at home last night.
- Call on one student at a time to share a Blank Busters statement with the class to see if students can fill in the blank with the correct spelling word form.
- Discuss the correct answer with the class and the correct spelling, using the table of this week's spelling words.
- Continue in this manner for the remaining time with other students' Blank Busters statements.

~~~~~  
End Lesson  
 ~~~~~

Lesson 4: Warm- or Cold-Blooded?

Take-Home Material

- Students will read Activity Page 4.5 and choose one paragraph from the reading to complete the graphic organizer at the bottom of the page.

Challenge

Have students list additional *un-* and *non-* words from their Reader. Have students define each word based on the root word and prefix.

Activity Page 3.4



Activity Page 4.5



5

Fins and Gills

PRIMARY FOCUS OF LESSON

Language

Students will use conventional spelling for doubling or not doubling a final consonant when adding the suffixes *-ed* and *-ing* to root words.

✚ **TEKS 3.2.B.vii**

Reading

Students will identify text features to gain greater understanding about fish.

✚ **TEKS 3.9.D.ii**

Speaking and Listening

Students will identify information about fish and explain how specific text

✚ features support their learning about fish. **TEKS 3.7.E; TEKS 3.7.F; TEKS 3.9.D.ii**

Students will present findings learned about fish from the text

✚ features. **TEKS 3.1.C; TEKS 3.13.H**

Language

Students will identify nouns, verbs and adjectives in a sentence.

✚ **TEKS 3.11.D.ii; TEKS 3.11.D.iii; TEKS 3.11.D.iv**

FORMATIVE ASSESSMENT

Activity Page 5.1

Spelling Assessment Use conventional spelling for doubling or not doubling a final consonant when adding the suffixes *-ed* and *-ing* to root words.

✚ **TEKS 3.2.B.vii**

Activity Page 5.4

Fish and Gills Exit Slip Identify and explain text

✚ features in the Reader. **TEKS 3.9.D.ii**

✚ **TEKS 3.2.B.vii** Demonstrate and apply spelling knowledge by: spelling words using knowledge of suffixes, including how they can change base words such as dropping e, changing y to i, and doubling final consonants; **TEKS 3.9.D.ii** Recognize characteristics and structures of informational text, including: features such as sections, tables, graphs, timelines, bullets, numbers, and bold and italicized font to support understanding; **TEKS 3.7.E** Interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating; **TEKS 3.7.F** Respond using newly acquired vocabulary as appropriate; **TEKS 3.1.C** Speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively; **TEKS 3.13.H** Use an appropriate mode of delivery, whether written, oral, or multimodal, to present results; **TEKS 3.11.D** Edit drafts using standard English conventions, including: (ii) past, present, and future verb tense; (iii) singular, plural, common, and proper nouns; (iv) adjectives, including their comparative and superlative forms.

LESSON AT A GLANCE

	Grouping	Time	Materials
Language (20 min.)			
Spelling Assessment	Whole Group	20 min.	<input type="checkbox"/> Activity Page 5.1
Reading (40 min.)			
Introducing the Reading	Small Group	15 min.	<input type="checkbox"/> Chart Paper <input type="checkbox"/> List of Text Features
Small Group Reading	Small Group	15 min.	<input type="checkbox"/> <i>Rattenborough's Guide to Animals</i> <input type="checkbox"/> Sticky notes for Small Group 2
Discussing the Reading	Small Group	10 min.	<input type="checkbox"/> Activity Page 5.2
Speaking and Listening (55 min.)			
Introducing the Read-Aloud	Small Group	10 min.	<input type="checkbox"/> Fish cards <input type="checkbox"/> <i>Rattenborough's Guide to Animals</i>
Presenting the Read-Aloud	Whole Group	20 min.	<input type="checkbox"/> Activity Pages 5.3, 5.4
Discussing the Read-Aloud	Whole Group	10 min.	
Word Work: <i>Aquatic</i>	Whole Group	5 min.	
Partner Presentations	Partner	10 min.	
Language (5 min.)			
Parts of Speech	Whole Group	5 min.	<input type="checkbox"/> Parts of Speech poster (Digital Projections) <input type="checkbox"/> Activity Page 5.4
Take-Home Material			
Parts of Speech			<input type="checkbox"/> Activity Page 5.5 <input type="checkbox"/> Activity Page 3.2 (Fish section only)
Animal Classification Foldable			

Reading

- Prepare the text feature cards. Each student will need one card.

Text Features

table of contents

heading

bold print words

photo and captions

chart

map

glossary

diagram

Speaking and Listening

- Prepare fish cards. Each small group will need one set of fish cards.

piranha

salmon

African lungfish

goldfish

tuna

eel

shark

stingray

bass

trout

Language

- On chart paper, create the following or prepare Digital Projection DPU2.L2.1.

➤ Projection DPU2.L2.1

Parts of Speech	
Nouns are words that name people, places, or things.	
Common nouns are general and are not capitalized.	Proper nouns are specific and are capitalized.
Verbs are words that show action.	
Adjectives are words that describe nouns.	

Universal Access

- Show students a picture or video clip that features fish. Ask students, “Where do the fish live?” Students should choose a fish they saw in the image or scene and describe what it looks like (aloud or on paper).
 - Ask students if they have ever seen a fish. “Where did you see the fish? On TV or in a cartoon? How about in person?”
 - Ask students to share. They might mention a fishing trip to the ocean or in a river, stream, or lake. They might mention a field trip to an aquarium.
 - As you respond to student statements, weave key words into the discussion, including *freshwater*, *saltwater*, *aquatic*, *habitat*.
 - This discussion will connect students’ prior experience to the upcoming information in this lesson and activate prior knowledge about fish and key terms.

Lesson 5: Fins and Gills

Language



Primary Focus: Students will use conventional spelling for doubling or not doubling a final consonant when adding the suffixes *-ed* and *-ing* to root words. **TEKS 3.2.B.vii**

SPELLING ASSESSMENT (20 MIN.) **TEKS 3.2.B.vii**

Spelling Assessment

- Have students turn to Activity Page 5.1 for the spelling assessment.
- Call out each word one at a time in the following manner: say the word, say a sentence with the word in it, and then say the word again.
- Tell students that after each word has been read once, you will go back through the list once more.

1. ship	7. plan
2. patch	8. discuss
3. rub	9. stretch
4. finish	10. submit
5. grab	Challenge Word: give
6. hop	Challenge Word: live

- After you have called out all of the words, including the Challenge Words, go back through the list slowly, reading each word just once more.
- Then, ask students to add *-ed* and *-ing* to each root word. Allow students time to complete this portion of the spelling assessment. Remind students not to add *-ed* and *-ing* to the two Challenge Words.
- Ask students to write the following sentence as you dictate it:
Please submit your paper to the teacher.

Note: At a later time today, you may find it helpful to use the template provided at the end of this lesson to analyze students' mistakes. This will help you to understand any patterns that are beginning to develop, or that are persistent among individual students.

Activity Page 5.1



TEKS 3.2.B.vii Demonstrate and apply spelling knowledge by: spelling words using knowledge of suffixes, including how they can change base words such as dropping e, changing y to i, and doubling final consonants.

Lesson 5: Fins and Gills

Reading



Primary Focus: Students will identify text features to gain greater understanding about fish. **TEKS 3.9.D.ii**

VOCABULARY FOR “FISH”

- The following are vocabulary words used in this lesson. Preview the words with the students before the lesson and refer back to them at appropriate times. The words also appear in the glossary in the back of the Reader.

aquatic, living, growing, or found in water

oxygen, a colorless gas that animals must breathe to stay alive

gill, one of a pair of organs fish use to breathe underwater

fin, a bony spine covered with skin that sticks out from a fish’s body and helps it swim (**fins**)

school, a large group of fish or other aquatic animals that swim together (**schools**)

migrate, to travel back and forth from one place to another

Vocabulary Chart for “Fish”		
Type	Tier 3 Domain-Specific Words	Tier 2 General Academic Words
Vocabulary	aquatic gills scales	
Multiple-Meaning Core Vocabulary Words	scale	
Sayings and Phrases		

TEKS 3.9.D.ii Recognize characteristics and structures of informational text, including: features such as sections, tables, graphs, timelines, bullets, numbers, and bold and italicized font to support understanding.

INTRODUCING THE READING (15 MIN.)

- Remind students that they have learned that scientists who study the animal kingdom classify animals into different groups based on different characteristics, or features.
- Remind students that the animal kingdom is separated into categories made up of warm-blooded and cold-blooded animals, vertebrates, and invertebrates.
- Tell students that today's reading and Read-Aloud are all about fish.
- Timed Activity: Pass out a piece of chart paper to small groups. Have students brainstorm everything they know about fish for ten minutes—their appearance, where they live, what they eat, etc.
- Have small groups share out their responses.
- Pass out the Text Features cards to each student. Have students brainstorm possible text features that may be present in the reading and Read-Aloud.

SMALL GROUP READING (15 MIN.)

Note: The Guided Reading Supports that follow are intended for use while you work with students in Small Group 1.

- Small Group 1: Read with students the chapter with the teacher. Follow the Guided Reading Supports that follow as you guide students through the chapter.
- Small Group 2: Ask these students to read the chapter independently and complete Activity Page 5.2.

Activity Page 5.2



**ENGLISH
LANGUAGE
LEARNERS**

Reading
Understanding Text
Structures

Beginning

With a small group, model identifying in a text.

Intermediate

With a small group of students, the teacher will watch students locate two of the text features on the page and confirm student answers are correct.

Advanced/ Advanced High

Student will complete Activity Page 5.2 independently and teacher will confirm student answers.

ELPS 4.F

Challenge

Have students find additional text features in the “Fish” chapter.

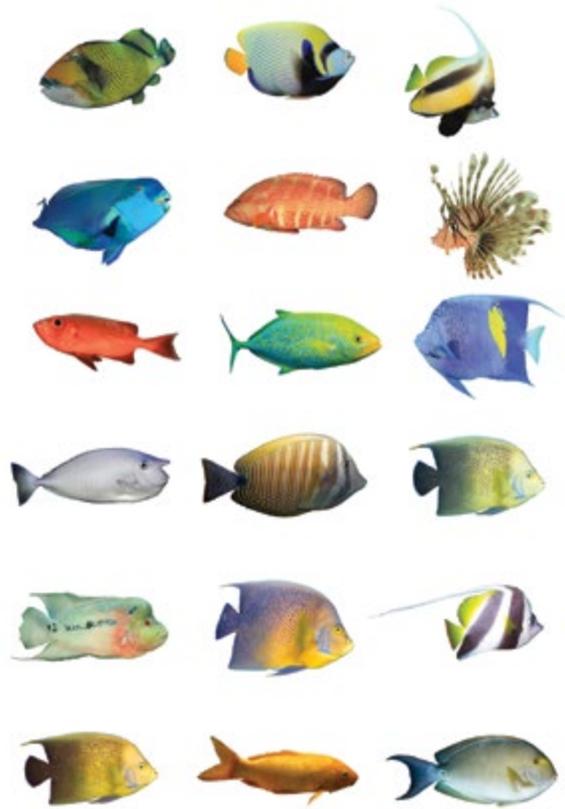
Support

Have students take out Activity Page 1.4A to review Text Features.



Rattenborough here again! You have learned that scientists study the **characteristics** of animals. They do this to divide the animal **kingdom** into different groups, such as **mammals** and **reptiles**. Today you are going to learn about another group of animals within the animal **kingdom**—fish.

Fish are **aquatic** animals, meaning that they spend their lives **underwater**. Most fish are **cold-blooded**. Their body **temperature** changes with the **temperature** of the water. Fish are also **vertebrates**. In fact, they are the largest group of animals on Earth that are **vertebrates**. Earth is covered mostly by water, so it makes sense that fish are the most common **vertebrates**. There are many different types and sizes of fish.



Fish come in many sizes and colors.

GUIDED READING SUPPORTS

Pages 34–35

- Pass out 8 sticky notes to each student. Have students write one text feature on each sticky note: table of contents, heading, bold print word, photo and caption, chart, map, glossary, and diagram.
- Ask, “What is the heading of this chapter?”
 - » *fish*
- Have student place the “heading” sticky note by the heading.
- Read the title of the chapter together as a group: “Fish.”
- “Where in the Reader could we find the definition of *aquatic* quickly?”
 - » the glossary

Support

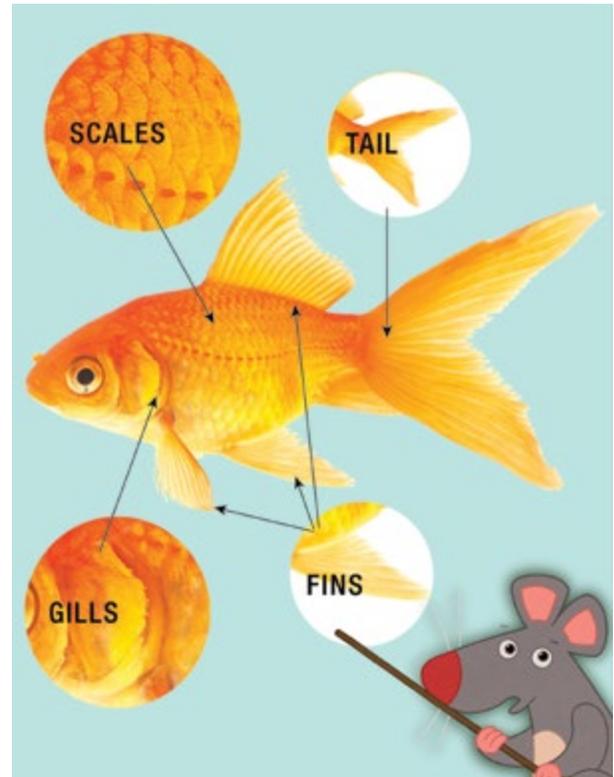
Supply students with additional sticky notes and identify additional headings in the text.

- Have students place the “glossary” and “bold print words” sticky notes in their Reader.
- Ask students to find the word *aquatic*.
- Remind students that authors use bold print to highlight important words or concepts in the text.
- Call on one student to identify where the word is and read the definition.
- Redirect students’ attention to **page 34**. Have one student read aloud the greeting from Rattenborough found in the first paragraph.
- Have students place the “photo and caption” sticky note by the picture and caption on **page 35**.
- Have students look at the image on **page 35** and discuss the different types and sizes of fish displayed.

Fish lay eggs **underwater**. They also eat and sleep under water. Fish do not sleep in the same way **mammals** sleep. Fish can't close their eyes because they don't have eyelids. When they sleep, they float around or find a place to hide while they rest.

Like other animals, fish need to breathe **oxygen**. But fish do not have lungs like people and they do not breathe **oxygen** from the air. Instead, they have **gills** just behind their heads. Fish **gills** take **oxygen** out of the water, so that fish can breathe. But **gills** do not work well outside water. They cannot take **oxygen** out of the air. A fish will die quickly—within several minutes—if it is removed from water.

Fish have **scales** that cover their skin. **Scales** are rounded and smooth, and there is usually an inner and outer layer. The **scales** protect the skin and help fish move easily through the water. Fish also use the different **fins** on their body and their tails to swim. They are able to glide through the water, rapidly changing direction by using their **fins** and tail.



Pages 36–37

- Ask students to read **pages 36–37** and identify another text feature.
- When students have finished reading, ask students what text feature they found.
 - » diagram

Most fish live in saltwater, because most water on Earth is salty. Tropical fish that live in the warm ocean are very colorful. They look as if an artist painted interesting patterns on their bodies. Many fish also live in freshwater, including streams, rivers, lakes, and ponds.



*These tropical fish live in a saltwater **habitat**.*

38

39

Pages 38–39

- Ask students to read **pages 38–39** to themselves.
- When students are finished, discuss and place the sticky note “table of contents” in the correct location.
- At this point, students will have two sticky notes that have not been placed: chart and map. Discuss how a chart and/or map could have been used in this chapter. (A chart could show saltwater and freshwater fish and a map could locate different fish around the world).

Some fish travel in groups called **schools**. One type of fish that travels in **schools** is salmon. Salmon live in both saltwater and freshwater. Some types of salmon are born in freshwater streams and rivers. After about a year, they make their way to the ocean where they live for one to five years. Then, they **migrate** back to the exact same stream where they were born. They lay eggs and the **life cycle** begins again.

Salmon don't use a map to help them find their way back home. Most scientists think they use their strong sense of smell to find their way. They swim upstream, against the river's current, sometimes swimming hundreds of miles. They leap over waterfalls and rocks to get to the same stream where they were born. They go through all this hard work to reach their home to lay their eggs.

Hopefully, along the way, a grizzly bear or fisherman won't catch them first. It just so happens that salmon are among the tastiest of all fish!

Pages 40–41

- Ask students to read **pages 40-41** to themselves to find the answer to the question, “What makes salmon a unique type of fish?”
- When students have finished reading, discuss the answer to the question. Answers may include: they live in fresh and salt water; they migrate back to the same stream where they were born in order to lay eggs; they use their sense of smell to find their way back without a map; they leap over rocks and waterfalls while swimming against the current.

DISCUSSING THE READING (10 MIN.)

- As a whole group, review Activity Page 5.2.



Check for Understanding

If students could not match text features on Activity Page 5.2, organize students based on text feature(s) that need further instruction. Review the definition of each text feature and provide students with additional examples in the Reader.

Lesson 5: Fins and Gills

Speaking and Listening



Primary Focus: Students will identify information about fish and explain how specific text features support their learning about fish.

✚ **TEKS 3.7.E; TEKS 3.7.F; TEKS 3.9.D.ii**

Students will present findings learned about fish from the text features.

✚ **TEKS 3.1.C; TEKS 3.13.H**

VOCABULARY FOR READ-ALoud

aquatic, living, growing, or found in water

gill, one of a pair of organs fish use to breathe underwater

scales, thick, small discs on the outside of the bodies of some animals, such as fish and reptiles

✚ **TEKS 3.7E** Interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating; **TEKS 3.7F** Respond using newly acquired vocabulary as appropriate; **TEKS 3.9.D.ii** Recognize characteristics and structures of informational text, including: features such as sections, tables, graphs, timelines, bullets, numbers, and bold and italicized font to support understanding; **TEKS 3.1.C** Speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively; **TEKS 3.13.H** Use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

Activity Page 5.3



ENGLISH LANGUAGE LEARNERS



Reading Understanding Text Structure

Beginning

Provide students with a list of text features and ask students yes or no question such as, “Did you use the bold words in the Read-Aloud?”

Intermediate

Pair intermediate learners with advanced learners. Model answering one interview question on Activity Page 5.3.

Advanced/ Advanced High

Pair advanced students together. Supply one sample interview question and supervise while students write an answer to sample question.

ELPS 4.F

Vocabulary Chart for “Fish: Fins and Gills”

Type	Tier 3 Domain-Specific Words	Tier 2 General Academic Words
Vocabulary	aquatic gills scales	
Multiple-Meaning Core Vocabulary	scales	
Sayings and Phrases		

INTRODUCING THE READ-ALoud (10 MIN.)

- Pass out fish cards (one set for each small group). Have students sort the cards based on characteristics or prior knowledge.
- Have students turn to Activity Page 5.3. Explain to students that during the Read-Aloud, they will record information about fish using text features. At the end of the lesson, students will interview a partner to complete the back side: Student Interview questions 1 and 2. Explain that Picture Pauses will be used throughout the Read-Aloud so students can add information to the graphic organizer on Activity Page 5.3.

PRESENTING THE READ-ALoud (20 MIN.)

- Tell students to turn to the table of contents and locate today’s chapter: “Fish: Fins and Gills.” Have students turn to the first page of the chapter and follow along during the Read-Aloud.



Student Reader pages 42–44 Rainforest with Paolo

Hello everyone! Today I'm going to tell you more about my friend Paolo Piranha and the group to which he belongs. So far, you've learned that scientists classify living things

by common characteristics in order to study them and show relationships.

You have learned about cold-blooded and warm-blooded animals. Who remembers if Paolo is cold-blooded or warm-blooded and can explain what that means? Ah, bravo! Right! Paolo Piranha's internal body temperature varies with his surroundings. When Paolo is swimming in warm water, his body temperature is higher than when he is swimming in cold water.

Who remembers another way scientists classify animals? I'll give you a hint. It has to do with bones. Right! Some animals have backbones—what's another word for animals with backbones? Yes, animals with backbones are called vertebrates. And those without backbones are called invertebrates. Paolo is one of many kinds of animals capable of swimming. Having a strong backbone is one type of body design that helps Paolo and other fish to be good swimmers.

You have also learned a little bit about taxonomy, the science of classification. Fish are members of Animalia [an-uh-may-lee-uh], or the animal kingdom, just like you and me, but they belong to a different animal group. Today I'm going to teach you a little more about animals that are classified as fish. So, to say that in three words: fish are aquatic! They don't live on land. They live in water! All species of fish are aquatic.

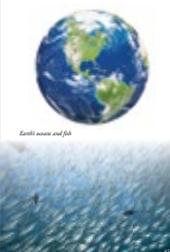
- Picture Pause: As a whole group, identify one piece of information to add to the Fish graphic organizer on Activity Page 5.3. (Fish: cold-blooded, vertebrates, and aquatic)

Support

Explain that *aquatic* means anything living or growing near water. *Aqua* is a Latin word meaning *water*. Explain that anytime you see *aqua*, the word is related to water, as in *aquarium*.

You have also learned a little bit about taxonomy, the science of classification. Fish are members of Animalia (an-uh-may-kuh-lee), or the animal kingdom, just like you and me, but they belong to a different animal group. You are a mammal like Florida Flippie and myself. Elephants are birds, and Frodo is a fish! Fish are vertebrates and they are cold-blooded. There are many different types and sizes of fish, represented by many species. Today I'm going to teach you a little more about aquatic species of animals that are classified as fish. So, to say that all these words fish are aquatic. They don't live on land. They live in water! All species of fish are aquatic.

Fish make up the largest group of vertebrates on Earth. Let's take a look at my picture that shows a view of planet Earth from space. There is a lot more water than land. Nearly three quarters of the earth's surface is covered by water. Fish are swimming about in the earth's water—from ponds and streams to rivers, lakes, and oceans. They have adapted to almost every water habitat on Earth except for some very hot springs and the extremely salty Dead Sea. Aside from these places, fish can live anywhere! It's no wonder that fish make up the largest group of vertebrates on Earth.



Earth's oceans and fish

Student Reader page 44–45 Earth's oceans and fish

Fish make up the largest group of vertebrates on Earth. Let's take a look at my picture that shows a view of planet Earth from space. There is a *lot*

more water than land. Nearly three quarters of the earth's surface is covered by water. Fish are swimming about in the earth's waters—from ponds and streams to rivers, lakes, and oceans. It's no wonder that fish make up the largest group of vertebrates on Earth.

Most of those wet, watery fish habitats are salty because most of the earth's water is salt water. If you ever swim in the ocean, you may get a little taste of the salty sea. Sharks, cod, and flounder are all saltwater fish.

Most of those wet, watery fish habitats are salty because most of the earth's water is salt water. If you ever swim in the ocean, you may get a little taste of the salty sea. Sharks, cod, and flounder are all saltwater fish.

Freshwater fish live in lakes, rivers, streams, and ponds. What do you think fish waste is? Run and reuse an common freshwater fish, and some humans actually find them very tasty. Come to think of it—I find fish quite delicious when I can get my paws on fish scraps!

Some fish, such as salmon, spend part of their lives in freshwater rivers and part in the salty seawater. Salmon begin their lives in rivers where they stay for anywhere from six months to three years, depending on the species. Then they make an often-dangerous journey out to sea, facing predators and changing water temperatures along the way. They live in the saltwater ocean for about four years before returning to the freshwater rivers to lay their eggs. Their migration often covers several hundred miles.

Let's stop for a moment to think about the different ways that taxonomists classify Trout, a South American piranha from the Amazon River. He's a cold-blooded, aquatic vertebrate. He's a fish to be sure. The question is whether he is a saltwater fish or a freshwater fish. Which of these types of water is he better? That's right! A freshwater river. Unlike homes in the Amazon River, one of the largest rivers in the world, Piranha live in freshwater environments, mostly rivers, so they are classified as freshwater fish.



Red-Bellied Piranha

Student Reader page 46 Trout and salmon

Freshwater fish live in lakes, rivers, streams, and ponds. What do you think fresh water is? Bass and trout are common freshwater fish, and some

humans actually find them very tasty. Come to think of it—I find fish quite delicious when I can get my paws on fish scraps! Some fish, such as salmon, spend part of their lives in freshwater rivers and part in the salty seawater. Salmon begin their lives in rivers where they stay for anywhere from six months to three years, depending on the species. Then they make an often-dangerous journey out to sea, facing predators and changing water temperatures along the way. They live in the saltwater ocean for about four years before returning to the freshwater rivers to lay their eggs. Their migration often covers several hundred miles.

Challenge

Research fish and add additional information to Activity page 5.3.

- Picture Pause: With a partner, add additional information about fish to Activity Page 5.3.

know that all animals need to breathe oxygen in order to live. Fish do not have lungs, so we have to wonder how in the world—or in this case under water—do they breathe?

<p>Sometimes animals are classified by their physical characteristics. Through piranhas do have very sharp teeth, they are not the bloodthirsty carnivores they are sometimes portrayed to be, always ready to attack humans. Indeed, members of the well-known species of piranha do have the most of other fish in large groups, but that's not all they are. Most piranhas are omnivores. You have noticed carnivores and omnivores earlier in this Reader. Who can tell me what the difference is? That's right—carnivores never piranha eat both animals and plants, eating seeds and fruit that fall into the water. Many piranha like fish for various reasons that have already died. You will continue to hear about the different kinds that many different animals eat—that will help you describe animals. Later you will hear about how the shape and size of animals' teeth give you clues about what they eat.</p> <p>So, you already know several common characteristics of fish. But there are more. Can you think of any others? If you can't think, you know that all animals need to breathe oxygen in order to live. Fish do not have lungs, so we have to wonder how in the world—or in this case under water—do they breathe?</p>	 <p>Diagram of fish</p> <p>Look closely at this fish and see if you can spot its breathing machine. The respiratory, or breathing, organ of a fish are called gills. All fish have gills. They take water in through their mouths and the water passes over their gills. The gills take in oxygen from the water, allowing them to breathe. You will die quickly if you don't get enough air because you draw oxygen out of the air. But fish will die quickly if they do not have water, because their oxygen comes from water.</p>
---	--

Student Reader page 49–50 Diagram of fish

Look closely at this fish and see if you can spot its breathing machine. The respiratory, or breathing, organs of a fish are called gills. All fish have gills. They take water in through their mouths and the water passes over their gills. The gills take in oxygen from the water, allowing them to breathe. You will die quickly if you don't get enough air because you draw oxygen out of the air. But fish will die quickly if they do not have water, because their oxygen comes from water.

They take water in through their mouths and the water passes over their gills. The gills take in oxygen from the water, allowing them to breathe. You will die quickly if you don't get enough air because you draw oxygen out of the air. But fish will die quickly if they do not have water, because their oxygen comes from water.

The African lungfish is the only fish I know that has lungs in addition to gills and can survive out of the water. We call this an exception to the rule, or a “pattern-breaker.” Before the dry season, when the water dries up and leaves a sun-baked riverbed behind, the lungfish buries itself deep in the mud and builds a cocoon-like sheath around itself, staying there for a year or more until water returns to the river. Okay then, fish breathe with gills, and you breathe with lungs. That's one big difference between you and fish. *What's another?*

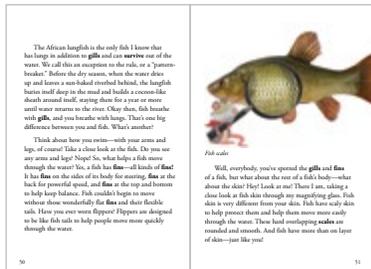
- Picture Pause: Students add additional information about fish to Activity Page 5.3.

<p>The African lungfish is the only fish I know that has lungs in addition to gills and can survive out of the water. We call this an exception to the rule, or a “pattern-breaker.” Before the dry season, when the water dries up and leaves a sun-baked riverbed behind, the lungfish buries itself deep in the mud and builds a cocoon-like sheath around itself, staying there for a year or more until water returns to the river. Okay then, fish breathe with gills, and you breathe with lungs. That's one big difference between you and fish. What's another?</p> <p>Think about how you swim—with your arms and legs, of course! Take a close look at the fish. Do you see any arms and legs? Nope! So, what helps a fish move through the water? Yes, a fish has fin—all kinds of fin! It has dorsal on the side of its body for steering, pectoral on the back for powerful speed, and anal on the top and bottom to help keep balance. Fish wouldn't be able to move without these wonderfully fin and their flexible tails. Have you ever worn flippers? Flippers are designed to be like fish tails to help people move more quickly through the water.</p>	 <p>Fish swim</p> <p>Well, everybody, you've opened the gills and fins of a fish, but what about the rest of a fish's body—what about the skin? Hey! Look at that! There I am, taking a close look at fish skin through our magnifying glass. Fish skin is very different from your skin. Fish have scaly skin to help protect them and help them move more easily through the water. These hard overlapping scales are rounded and smooth. And fish have more than one layer of skin—just like you!</p>
--	--

Student Reader page 50 Child snorkeling and fish swimming

Think about how you swim—with your arms and legs, of course! Take a close look at the fish. Do you see any arms and legs? Nope! So, what helps a fish

move through the water? Yes, a fish has fins—all kinds of fins! It has fins on the sides of its body for steering, fins at the back for powerful speed, and fins at the top and bottom to help keep balance. Fish couldn't begin to move without those wonderfully flat fins and their flexible tails. Have you ever worn flippers? Flippers are designed to be like fish tails to help people move more quickly through the water.



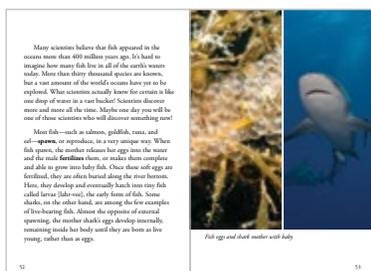
Student Reader pages 51–52

Fish scales

Well, everybody, you've spotted the gills and fins of a fish, but what about the rest of a fish's body—what about the skin? Hey! Look at me! There I am,

taking a close look at fish skin through my magnifying glass. Fish skin is very different from your skin. Fish have scaly skin to help protect them and help them move more easily through the water. These hard overlapping scales are rounded and smooth. And fish have more than one layer of skin—just like you!

Many scientists believe that fish appeared in the oceans more than 400 million years ago. It's hard to imagine how many fish live in all of the earth's waters today. More than thirty thousand species are known, but a vast amount of the world's oceans have yet to be explored. What scientists actually know for certain is like one drop of water in a vast bucket! Scientists discover more and more all the time. Maybe one day you will be one of those scientists who will discover something new!



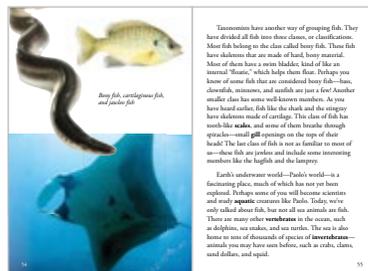
Student Reader page 52

Fish eggs and shark mother with baby

Most fish—such as salmon, goldfish, tuna, and eels—spawn, or reproduce, in a very unique way. When fish spawn, the mother releases her eggs into

the water and the male fertilizes them, or makes them complete and able to grow into baby fish. Once these soft eggs are fertilized, they are often buried along the river bottom. Here, they develop and eventually hatch into tiny fish called larvae [*lahr-vee*], the early form of fish. Some sharks, on the other hand, are among the few examples of live-bearing fish. Almost the opposite of external spawning, the mother shark's eggs develop internally, remaining inside her body until they are born as live young, rather than as eggs.

- Picture Pause: Students add additional information about fish to Activity Page 5.3.



Student Reader page 55

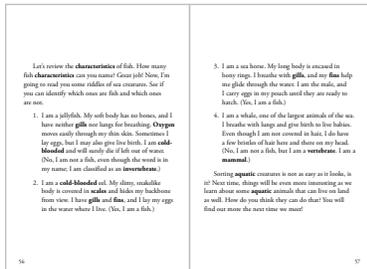
Bony fish, cartilaginous fish, and jawless fish

Taxonomists have another way of grouping fish. They have divided all fish into three classes, or

classifications. Most fish belong to the class called bony fish. These fish have skeletons that are made of hard, bony material. Most of them have a swim bladder, kind of like an internal “floatie,” which helps them float. Perhaps you know of some fish that are considered bony fish—bass, clownfish, minnows, and sunfish are just a few! Another smaller class has some well-known members. As you have heard earlier, fish like the shark and the stingray have skeletons made of cartilage. This class of fish has tooth-like scales, and some of them breathe through spiracles—small gill openings on the tops of their heads! The last class of fish is not as familiar to most of us—these fish are jawless and include some interesting members like the hagfish and the lamprey.

Earth's underwater world—Paolo's world—is a fascinating place, much of which has not yet been explored. Perhaps some of you will become scientists and study aquatic creatures like Paolo. Today, we've only talked about fish, but not all sea animals are fish.

There are many other vertebrates in the ocean, such as dolphins, sea snakes, and sea turtles. The sea is also home to tens of thousands of species of invertebrates—animals you may have seen before, such as crabs, clams, sand dollars, and squid.



Student Reader pages 56–57 Jellyfish, eel, seahorse, and humpback whales

Let's review the characteristics of fish. How many fish characteristics can you name? Great job! Now, I'm going to

read you some riddles of sea creatures. See if you can identify which ones are fish and which ones are not.

1. I am a jellyfish. My soft body has no bones, and I have neither gills nor lungs for breathing. Oxygen moves easily through my thin skin. Sometimes I lay eggs, but I may also give live birth. I am cold-blooded and will surely die if left out of water. (No, I am not a fish, even though the word is in my name; I am classified as an invertebrate.)
2. I am a cold-blooded eel. My slimy, snakelike body is covered in scales and hides my backbone from view. I have gills and fins, and I lay my eggs in the water where I live. (Yes, I am a fish.)
3. I am a sea horse. My long body is encased in bony rings. I breathe with gills, and my fins help me glide through the water. I am the male, and I carry eggs in my pouch until they are ready to hatch. (Yes, I am a fish.)
4. I am a whale, one of the largest animals of the sea. I breathe with lungs and give birth to live babies. Even though I am not covered in hair, I do have a few bristles of hair here and there on my head. (No, I am not a fish, but I am a vertebrate. I am a mammal.)

Sorting aquatic creatures is not as easy as it looks, is it? Next time, things will be even more interesting as we learn about some aquatic animals that can live on land as well. How do you think they can do that? You will find out more the next time we meet!

DISCUSSING THE READ-ALoud (10 MIN.)

1. **Literal.** How do fish move through the water?
 - » They use their fins and tails.
2. **Inferential.** Why are scales an important physical characteristic of fish?
 - » They offer protection and help them move through the water.
3. **Evaluative.** You and a friend are discussing whether or not a shark is a fish. How would you convince your friend that a shark is a fish?
 - » Like other fish, sharks live in water and have gills through which they take in oxygen; they have scaly skin; their tails and fins help them move through the water.



WORD WORK: AQUATIC (5 MIN.)

TEKS 3.7.F

- In the Read-Aloud, you heard Rattenborough say, “Today I’m going to teach you a little more about the aquatic species of animals that are classified as fish.”
 - *Aquatic* means “having to do with water.”
 - Eli visited the pet store every weekend because he loved to watch the turtles swimming and playing in their aquatic environment.
 - Have you ever seen something that was aquatic? Where were you? Would you consider yourself to be aquatic? What aquatic activities do you do? Be sure to use the word *aquatic* when you tell about it. (Ask two or three students. If necessary, guide and/or rephrase the students’ responses to make complete sentences: “At the creek we watched aquatic animals _____” or “I like the aquatic activity of _____.”)
 - Have you ever heard of something described as aquatic? What part of speech is the word *aquatic*?
 - Use a Making Choices activity for follow-up. Directions: “I am going to say a phrase that describes something that is aquatic or not aquatic. If the phrase is about something that is aquatic, say, ‘That is aquatic.’ If the phrase is not about something aquatic, say, ‘That is not aquatic.’”
1. a monkey swinging from branch to branch in the jungle.
 - » *That is not aquatic*
 2. raking leaves in the yard.
 - » *That is not aquatic*
 3. swimming in a lake.
 - » *That is aquatic*



TEKS 3.7.F Respond using newly acquired vocabulary as appropriate.

4. walking to the cafeteria.
 - » *That is not aquatic*
5. a dolphin jumping and diving in the waves.
 - » *That is aquatic*
6. the huge tank of ocean animals in the aquarium.
 - » *That is aquatic*
7. doing cartwheels and flips on the trampoline.
 - » *That is not aquatic*



PARTNER PRESENTATIONS (10 MIN.)

TEKS 3.1.C; TEKS 3.13.H

- Have students turn to the back side of Activity Page 5.3. Explain to students that in the next part of the lesson they will be the interviewer and interviewee. The interviewer, the one who is asking the questions, will record their partner's answers. The interviewee, the one who is answering their questions, may use his or her notes on Activity Page 5.3 to answer the questions.
- Teacher model: Provide the students with the directions below very quickly, leave out words, and speak softly.
 - Explain to students that we are preparing to give small group presentations at the end of the unit. Remind students to speak clearly and slowly so the interviewer can record their ideas.
 - “Did you understand the directions?”
 - » No
- Teacher model: Provide the students with the directions again speaking clearly and slowly.
 - Explain to students that we are preparing to give small group presentations at the end of the unit. Remind students to speak clearly and slowly so the interviewer can record their ideas.
 - “Did you understand the directions?”
 - » Yes
 - What was the difference?
 - » Directions were given clearly and slowly
- Allow students time to review their notes as preparation for their interview.
- Pair students up to complete Activity Page 5.3.



TEKS 3.1.C Speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively; **TEKS 3.13.H** Use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

Activity Page 5.4



ENGLISH LANGUAGE LEARNERS



Language Exchanging Information and Ideas

Beginning

Write, “My black cat jumped on the couch.” With a small group, highlight the nouns, verbs, and adjectives with different colored markers.

Intermediate

Write, “My black cat jumped on the couch.” With a partner, have students highlight the nouns, verbs, and adjectives with different colored markers.

Advanced/ Advanced High

Write, “My black cat jumped on the couch; I carried my lunch to school.” Independently, have students highlight the nouns, verbs, and adjectives with different colored markers.

ELPS 1.C



Check for Understanding

As students are completing the Student Interviews, walk around the room to monitor student presentations. Provide whole group feedback on clarity and pace.

- Exit Slip: Have students complete Activity Page 5.4 independently.



Check for Understanding

If students could not identify what they learned from a text feature, then pull small groups aside and review Exit Slips of students with various answers (correct and incorrect). Ask students to identify correct answers.

Note: Copy student Exit Slips and take off student names.

Lesson 5: Fins and Gills

Language



Primary Focus: Students will identify nouns, verbs and adjectives in a sentence. **TEKS 3.11.D.ii; TEKS 3.11.D.iii; TEKS 3.11.D.iv**

PARTS OF SPEECH (5 MIN.)

- Review with students the definitions of nouns (common and proper), verbs (action and linking), and adjectives, pointing out the Parts of Speech poster DP.U2.L2.1.

TEKS 3.11.D Edit drafts using standard English conventions, including: (ii) past, present, and future verb tense; (iii) singular, plural, common, and proper nouns; (iv) adjectives, including their comparative and superlative forms.

➤ Projection DP.U2.L2.1

Parts of Speech	
Nouns are words that name people, places, or things.	
Common nouns are general and are not capitalized.	Proper nouns are specific and are capitalized.
Verbs are words that show action.	
Adjectives are words that describe nouns.	

- Write the following sentences on the board:
 - Rob carried his best trumpet to school.
 - Ted, Janet, and Alex are in the school play.
- Have students direct you to mark the sentences by drawing circles around nouns, wiggly lines under verbs, boxes around adjectives, and arrows from adjectives to the nouns they describe.
- Have students complete Activity Page 5.5 for homework.

~~~~~  
End Lesson  
~~~~~

Lesson 5: Fins and Gills

Take-Home Material

- Students will complete Activity Page 5.5 and complete the “Fish” section on Activity Page 3.2.

Activity Page 5.5



Activity Page 3.2



Spelling Analysis Chart

Student Name

1. ship
2. shipped
3. shipping
4. patch
5. patched
6. patching
7. rub
8. rubbed
9. rubbing
10. finish
11. finished
12. finishing
13. grab
14. grabbed
15. grabbing
16. happen
17. happened
18. happening
19. plan
20. planned
21. planning
22. discuss
23. discussed
24. discussing
25. stretch
26. stretched
27. stretching
28. submit
29. submitted
30. submitting

Challenge Word: give

Challenge Word: live

SPELLING ANALYSIS DIRECTIONS

Unit 2, Lesson 5

- Students are likely to make the following errors:
 - doubling all of the final consonants before adding the suffixes
 - not doubling any of the final consonants before adding the suffixes
- While either of the above student-error scenarios may occur, you should still be aware that misspellings may be due to many other factors. You may find it helpful to record the actual spelling errors that the student makes in the analysis chart. For example: Is the student consistently making errors on specific vowels? Which ones?
 - Is the student consistently making errors on double consonants?
 - Is the student consistently making errors at the end of the words?
 - Is the student consistently making errors on particular beginning consonants?
 - Did the student write words for each feature correctly?
 - Also, examine the dictated sentence for errors in capitalization and punctuation.

6

From Water to Land

PRIMARY FOCUS OF LESSON

Speaking and Listening

- Students will identify clue words used to sequence the stages of metamorphosis. **TEKS 3.1.A; TEKS 3.9.D.iii**

Reading

- Students will record key information about amphibians. **TEKS 3.6.G; TEKS 3.7.E**

Language

- Students will produce compound sentences. **TEKS 3.11.D.i; TEKS 3.11.D.viii**

- Students will determine the meaning of words formed when *-ed* and *-ing* are added to a known root word. **TEKS 3.3.C**

FORMATIVE ASSESSMENT

- Activity Page 6.4** **Compound Sentences** Write compound sentences. **TEKS 3.11.D.i; TEKS 3.11.D.viii**

- TEKS 3.1.A** Listen actively, ask relevant questions to clarify information, and make pertinent comments; **TEKS 3.9.D.iii** Recognize characteristics and structures of informational text, including: organizational patterns such as cause and effect and problem and solution; **TEKS 3.6.G** Evaluate details read to determine key ideas; **TEKS 3.7.E** Interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating; **TEKS 3.11.D** Edit drafts using standard English conventions, including: (i) complete simple and compound sentences with subject-verb agreement, (viii) coordinating conjunctions to form compound subjects, predicates, and sentences; **TEKS 3.3.C** Identify the meaning of and use words with affixes such as im- (into), non-, dis-, in- (not, non), pre-, -ness, -y, and -ful.

LESSON AT A GLANCE

	Grouping	Time	Materials
Speaking and Listening (35 min.)			
Introducing the Read-Aloud	Small Group	5 min.	<input type="checkbox"/> Activity Pages 6.1, 6.2 <input type="checkbox"/> Text Structure Chart (Digital Projections) <input type="checkbox"/> Digital Flip Book: U2.L6.1–6
Presenting the Read-Aloud	Whole Group	20 min.	
Discussing the Read-Aloud	Independent	10 min.	
Reading (45 min.)			
Introducing the Reading	Whole Group	5 min.	<input type="checkbox"/> <i>Rattenborough's Guide to Animals</i> <input type="checkbox"/> Activity Pages 3.2, 6.3
Independent Reading	Independent	20 min.	
Discussing the Reading	Whole Group	20 min.	
Language (40 min.)			
Grammar: Compound Sentences	Whole Group	20 min.	<input type="checkbox"/> Activity Pages 6.4, 6.5
Spelling	Whole Group	20 min.	<input type="checkbox"/> Root Words chart (Digital Projections)
Take-Home Materials			
Letter to Family			<input type="checkbox"/> Activity Page 6.6

ADVANCE PREPARATION

Speaking and Listening

- On chart paper, create the following or prepare Digital Projection DP.U2.L6.1.

Text Structures How does the author organize information in a text?		
Different Types of Text Structures	Defined	Clue Words
Time	Explains when an event took place	Before Now Later
Sequence	Explains the order in which events happened	First Next Then After Last Finally
Cause and Effect	Explains why things happen	Because Then If So As a result When
Comparison	Shows difference and similarities between two or more things	However On the other hand Like Unlike Same

- Identify the following Digital images on the program's digital components site to project during the Read-Aloud: U2.L6.1–6

Language

- Write the following sentences on the board for use during the Grammar lesson:
 1. Dancers wear special shoes, and football players also wear special shoes.
 2. Jamal chose chocolate cake for dessert, and his brother chose ice cream.
 3. Squirrels and dogs are furry animals.
 4. Fish swim in the lake and lay eggs.
- On chart paper, create the following or prepare Digital Projection DP.U2.L6.2

Root Word	-ed	-ing

Universal Access

- Write the following words in the center of three different pieces of poster board: *Change*, *Transformation*, *Metamorphosis*. Place each poster in different corners of the room. Next, students perform a gallery walk. They walk silently around the room and write what they think the word means or what it reminds them of. They can write a sentence, words, phrases, or draw a simple picture. Each student should write on each poster board.
- Show a time-lapse video of a metamorphosis, readily available on the Internet. A good video to show is the metamorphosis of a caterpillar into a butterfly (or a tadpole into a frog if you can find it). Then write on the board: “The caterpillar *transformed* into a butterfly. The caterpillar *changed* into a butterfly over time.”
- Then preview some of the sequence words: “First, I entered the classroom. Next, I sat down at my desk. Then, the teacher started talking to us.” Students can repeat aloud, emphasizing the first word of the sentence based on teacher modeling.

Start Lesson

Lesson 6: From Water to Land

Speaking and Listening



Primary Focus: Students will identify clue words used to sequence the stages of metamorphosis. **TEKS 3.1.A; TEKS 3.9.D.iii**

VOCABULARY “AMPHIBIANS: FROM LAND TO WATER”

- The following are core vocabulary words used in this lesson. Preview the words with the students before the lesson. Students are not expected to be able to

TEKS 3.1.A Listen actively, ask relevant questions to clarify information, and make pertinent comments;
TEKS 3.9.D.iii Recognize characteristics and structures of informational text, including: organizational patterns such as cause and effect and problem and solution.

use these words immediately, but with repeated exposure throughout the lessons they will acquire a good understanding of most of the words. Students may also keep a “unit dictionary” notebook along with definitions, sentences, and/or other writing exercises using these vocabulary words.

amphibian, an animal that can live on land and in water (**amphibians**)

shed, to drop, cast off, or separate from something

transformation, changing appearance

Vocabulary Charts for “Amphibians: From Water to Land”		
Type	Tier 3 Domain-Specific Words	Tier 2 General Academic Words
Vocabulary	amphibian	shed transformation
Multiple-Meaning Core Vocabulary Words		shed
Sayings and Phrases		

INTRODUCING THE READ-ALOUD (5 MIN.)

- **Common Bond:** Have students take out Activity Page 6.1 and provide time for students to complete.
- Tell students that in today’s Read-Aloud, they will learn more about another group of animals: amphibians. Explain to students that the word *amphibian* means “living two lives” or “living in two worlds.” Ask students to predict what they think this means as it pertains to the amphibians animal group.
- Explain to students that one way to understand the text is to think about the connections to the text. Readers are always thinking: How does this event connect to the next event? Or what are the steps in this text? Authors share information in a few different formats.
- Project or display the Text Structures chart (DP.U2.L6.1). Read aloud the various text structures listed.
- Explain that during today’s lesson the focus will be on sequence.
- “As you listen today, keep an ear out for the Clue Words from the chart. When you hear one of the sequencing key words, raise your hand.”
- Have students turn to Activity Page 6.2 for whole group completion during the Read-Aloud.

Activity Pages
6.1 and 6.2



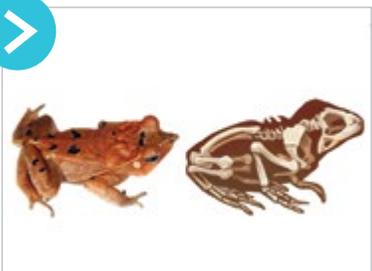


**Show Image U2.L6.1
Rainforest with Tabitha**

I'm back, everybody, and today I've brought some excellent slides of Tabitha Toad and Paolo Piranha to show you, so we can compare how

scientists classify them in the taxonomy of animals. Tabitha is not a fish, but she and Paolo are similar in many ways. It's true that Tabitha and Paolo don't look very much alike, but as the saying goes, you can't judge a book by its cover. When classifying animals, scientists often search for similarities as well as differences.

One similarity between Tabitha and Paolo is that, as you know, they are both members of the animal kingdom. You've learned that scientists classify animals as cold-blooded or warm-blooded. Does anyone know to which category Tabitha belongs? Do you think that her body maintains a constant internal temperature like yours, or does her temperature adjust to her surroundings like a fish does? Yes, her body temperature fluctuates, so she is classified as a cold-blooded animal like Paolo. That's another way that they are similar to one another. They are both animals and they are both cold-blooded.



**Show Image U2.L6.2
Toad, and toad with vertebrae**

Now take a closer look at Tabitha Toad. Can you tell just by looking at her whether she is cold-blooded or warm-blooded? No, but once you

learn a bit more about her habits you will understand how scientists determined that she is cold-blooded. You know that scientists also classify animals according to whether or not they have backbones. Think about what you learned about Tabitha's backbone. Yes, there it is! Just like you and Paolo, Tabitha has vertebrae, a column of bones,

Support

Reread the sentence: “Most amphibians spend part of their lives in water and part on land.” The text explains how frogs begin their lives in water and, as they grow, they move on land.

Challenge

Have students analyze and explain the text structure the author used in the first part of the Read-Aloud (compare/contrast).

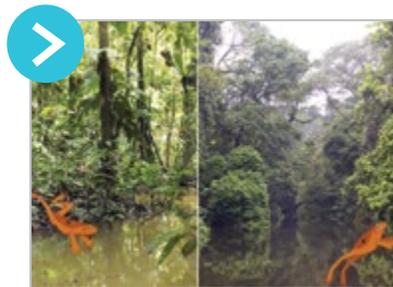
Support

Remind students that we learned about *aquatic* in the lessons about fish. *Aquatic* means having to do with water.

all down her back. Who remembers what scientists call animals with backbones? Right! She’s a vertebrate!

So, Paolo and Tabitha are both cold-blooded vertebrates. Does anyone remember any other fish characteristics? Good answers! Make a prediction about which characteristics Tabitha shares with Paolo. Do Tabitha and other toads have gills, scales, or fins? Do they lay eggs? Or live in water? These are rather tricky questions because toads belong to a group of animals that change during their lifetime. Their bodies change, their habits change, and their habitats change. I’m going to share lots of information with you today, so get ready for some miraculous surprises.

Before we go any further, I want to introduce the name of Tabitha Toad’s group of animals. Some of you may know it already. How do scientists classify toads? Yes, they are members of a class of animals known as **amphibians**. Most amphibians spend part of their lives in water and part on land.



Show Image U2.L6.3

Tabitha jumping in and out of the water

Toads love the water. Like all amphibians, Tabitha began her life as an aquatic animal, living in water. She spends most of her time on dry land

now. In fact, she loves the woodlands, but every spring she makes her way to a small freshwater pond in the wetland.

First, she will lay her eggs. Just before I took this picture, she laid a few thousand eggs in the shallow water. Toads must lay their eggs in water because their soft jelly like coverings can easily dry out in the air. Come and see!

- **Picture Pause:** Stop to identify *first* as a sequence word in the text. As a whole group, write down the following sentence from the text onto Activity Page 6.2:
 - *First*, she will lay her eggs.



Beginning

Write on the board a sequence with arrows. First → Second → Third. First → Next → Then → Last. Provide a personal example students can relate to: First, I _____. Next, _____. Then _____. Last, _____.

Intermediate

In pairs, have students practice using sequence words to describe making a sandwich or getting ready for school.

Advanced/

Advanced High

Have students write *first*, *next*, *then*, and *last* on index cards and arrange them in sequence. Have students practice creating sentences using these words.

ELPS 2.C; ELPS 3.C;

ELPS 4.C



Check for Understanding

If students did not raise their hand when *first* was read aloud, then review the Text Structure chart for the key words for sequencing.



Show Image U2.L6.4

Toad eggs

Most of the eggs will never hatch. Can anyone think of why this is so? There are many ways that eggs can be destroyed: by becoming a tasty meal

for a predator, being washed away in a flood, or drying up if there's not enough rain.

Next, a few hundred toad eggs will hatch into tadpoles. Tadpoles have gills, just like fish, and use their gills to breathe underwater. They are herbivores and eat tiny aquatic plants, but they're in constant danger because other fish can swallow them whole.

- **Picture Pause:** Stop to identify *next* as a sequence word in the text. As a whole group, write down the following sentence from the text onto Activity Page 6.2:
 - *Next*, a few hundred toad eggs will hatch into tadpoles.



Show Image U2.L6.5

Tadpole's metamorphosis

Then, the tadpoles will morph, or change, into very different looking creatures, young amphibians, with very different habits. This

transformation process of changing appearance from one stage to another is called metamorphosis. Skin has covered their gills and they grew lungs for breathing air on land. Tiny legs have also appeared.

- **Picture Pause:** Stop to identify *then* as a sequence word in the text. As a whole group, write down the following sentence from the text onto Activity Page 6.2: Then, the tadpoles will morph, or change, into very different looking creatures, young amphibians, with very different habits.

Then, the tadpoles will morph, or change, into very different looking creatures, young amphibians, with very different habits.

Lastly, young amphibians will grow into adult toads. Those amphibians that survive to adulthood will be hopping and crawling around on land, searching for food, just like Tabitha. Plant life will no longer interest them. Instead, they'll snatch up bugs, worms, spiders, and slugs with their sticky tongues. Most adult amphibians are carnivores. Some of the toad's larger relatives, like bullfrogs, even eat small mammals and birds. The world's biggest frog is the West African Goliath frog. It is the size of a pet cat and eats other frogs, baby crabs, and snakes.

-
- **Picture Pause:** Stop to identify *lastly* as a sequence word in the text. As a whole group, write down the following sentence from the text onto Activity Page 6.2:

- *Lastly*, young amphibians will grow into adult toads.

Frogs and toads are the largest group of amphibians. Because they have so many of the same characteristics, many people have a difficult time telling them apart. The main difference between them is that toads' skin is a bit drier than frogs' skin. Remember that although together they make up the largest group of amphibians, they are not the *only* group of amphibians.



Show Image U2.L6.6 Fish, early amphibian, and fossil

Most scientists generally agree that amphibians evolved from an early group of fish with lobed, or fleshy, fins hundreds of millions of years ago, long before the dinosaurs. Scientists continue to study fossil remains, trying to figure out the exact way in which this slow change occurred over a long period of time.

Next time we meet, you will learn all about the way scientists classify snakes like Anna Anaconda. I'll give you a hint. Remember when I said that salamanders are often mistaken for lizards, but that lizards belong to a different group of animals? Well, Anna belongs to the same group as lizards. Does anyone want to predict the name of that group? Wait and see if you're right. For now, I want to congratulate you all on being such good sleuths, or detectives! Any taxonomist would love to have your help in classifying Earth's animals. See you soon!

Challenge

Research and report on other animals that go through metamorphosis.

DISCUSSING THE READ-ALOUD (10 MIN.)

1. **Literal.** After toads become adults they live on dry land. Why do they go back to the wetlands every spring?
 - » to lay eggs
 2. **Inferential.** In the Read-Aloud, you learned that a tadpole breathes through gills like fish because it lives mostly underwater. How do adult frogs breathe?
 - » with lungs and through their skin
 3. **Evaluative.** *Think-Pair-Share:* *Amphibian* means “living two lives” or “two worlds.” Describe the transformation frogs go through in their lifetimes. Try to use signal words to describe the sequence of their transformation. Students may use their notes from Activity Page 6.2.
- Have students complete Activity Page 6.2 by drawing a picture to show the stages of metamorphosis.

Support

Pull students aside to assist with the drawings on Activity Page 6.2.



Check for Understanding

If students could not identify pictures that represent each stage of metamorphosis, then review the location of the sequence words in the text and provide students with possible picture options.

Lesson 6: From Water to Land

Reading



Primary Focus: Students will record key information about amphibians.

TEKS 3.6.G; TEKS 3.7.E

VOCABULARY FOR READING “AMPHIBIANS”

- The following are vocabulary words used in this lesson. Preview the words with the students before the lesson and refer back to them at appropriate times. The words also appear in the glossary in the back of the student reader.

amphibian, an animal that can live on land and in water (amphibians)

hibernate, to spend a season resting or sleeping (hibernating)

survive, to continue to live (survives)

tadpole, the early form of frogs and toads that has gills and a tail, but no legs (tadpoles)

Vocabulary Chart for “Amphibians”		
Type	Tier 3 Domain-Specific Words	Tier 2 General Academic Words
Vocabulary	Amphibian Tadpole	Hibernate Survive
Multiple-Meaning Core Vocabulary Words		
Sayings and Phrases		

TEKS 3.6.G Evaluate details read to determine key ideas; **TEKS 3.7.E** Interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.

INTRODUCING THE READING (5 MIN.)

- “What are some key vocabulary words that you heard during the Read-Aloud?” List student responses on the board. Ask students to define each word.
 - Possible student responses: *amphibian* (live in water and on land); *morph* (to change form); *aquatic* (having to do with water), *tadpole* (the early stages of a frog that has gills and no legs).
- Write the following vocabulary words on the board if not already listed. Discuss each definition aloud.
 - **amphibian**—an animal that can live on land and in water (**amphibians**)
 - **hibernate**—to spend a season resting or sleeping (**hibernating**)
 - **survive**—to continue to live (**survives**)
 - **tadpole**—the early form of frogs and toads that has gills and a tail, but no legs (**tadpoles**)

INDEPENDENT READING (20 MIN.)

- Tell students that today’s chapter is called “Amphibians.”
- Ask students to turn to the Table of Contents, locate the chapter, and then turn to the first page of the chapter.
- Assign students to read the chapter to find out what special characteristics amphibians have that permit them to live both in water and on land. Remind them that the bolded words in the chapter are found in the glossary and match words previewed. Some words may appear in different forms in the chapter.
- Pass out Activity Page 6.3. As students read, they will record information about amphibians on their graphic organizer.



Check for Understanding

If students did not identify key features of amphibians, then pull students aside to review key points in the reading.

Support

Allow students to use their Reader to review the Reading text for key vocabulary words.

Activity Page 6.3



**ENGLISH
LANGUAGE
LEARNERS**

Reading Condensing Ideas

Beginning

With a small group, record key information about amphibians on Activity Page 6.3.

Intermediate

With a partner, students will record key information about amphibians on Activity Page 6.3.

Advanced/ Advanced High

Independently, students will complete Activity Page 6.3. Teacher verbally points out example if needed.

ELPS 4.G

Challenge

Have students research additional information about amphibians to add to their web on Activity Page 6.3.



Greetings once again from your pal and animal expert, Rattenborough! Are you ready to learn about another group of animals within the animal **kingdom**? The group we are going to talk about today is really interesting. They live both in water and on land. This group of animals is called **amphibians**. The word **amphibian** comes from Latin meaning “both sides of life.”

Amphibians are classified into three more specific groups. Frogs and toads are the largest group. Salamanders and newts make up another. Animals in the third group do not have legs, so they look more like large snakes. We don’t know as much about this group of **amphibians** because they live mostly underground.

To understand the **life cycle** of an **amphibian**, let’s take a closer look at an American toad.

Like all **amphibians**, toads are **cold-blooded**. An **amphibian’s** body **temperature** changes as the outdoor **temperature** changes. Some **amphibians hibernate** during the winter. Some toads dig deep underground. Other **amphibians** like frogs bury themselves in mud at the bottom of a pond. **Hibernating amphibians** can **survive** for months. They do not eat or move, using only the fat stored in their body to stay alive. Frogs and toads—and all **amphibians**—are also **vertebrates**.

Support

Pull a small group of students aside to read the chapter with teacher guidance. Use the Guided Reading supports during the reading.

GUIDED READING SUPPORTS

Pages 58–59

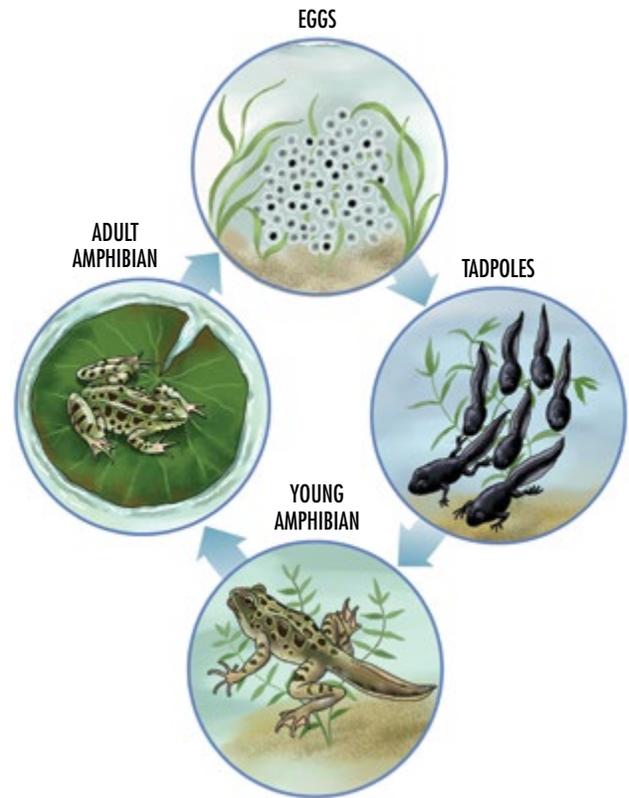
- Read the title of the chapter together as a group: “Amphibians.”
- “Where in the Reader could we find the definition of *amphibian* quickly?”
 - » the glossary
- Ask students to find the word.
- Call on one student to identify where the word is and read the definition. Note for students that the plural form of the word, *amphibians*, appears at the end of the definition.
- Redirect students’ attention to **page 58**. Point out to students that both *amphibian* and *amphibians* appear on this page and in this chapter.

- Ask students to read **page 58** to themselves to find the answer to the question: “What is unique about where amphibians live?”
- When students have finished reading, restate the question and ask students to answer.
 - » Amphibians live both in water and on land.
- Ask students to read **page 59** to themselves to learn whether amphibians are warm-blooded or cold-blooded, vertebrates or invertebrates.
- When students have finished reading, restate the question and ask students to answer.
 - » Amphibians are cold-blooded vertebrates.
- Ask students, “What do some amphibians do during the winter? How?”
 - » Some amphibians hibernate by digging deep underground or burying themselves at the bottom of a pond.

A toad's **life cycle** begins as one of thousands of soft, slimy eggs. The mother lays her eggs close to shore in a pond, lake, or calm spot in a river or stream.

But most of these eggs will never hatch. Instead, they will be eaten by fish or other animals. If the water moves the eggs away from the shore and into direct sunlight, the eggs will dry out and die.

Out of the thousands of eggs laid, a few hundred toad eggs manage to hatch into **tadpoles**. A **tadpole** is very fragile. Its young body is made up mainly of a mouth, a tail, and **gills**. At this stage, **tadpoles** are **aquatic**. Like fish, they use **gills** to breathe underwater.



The life cycle of a frog or toad

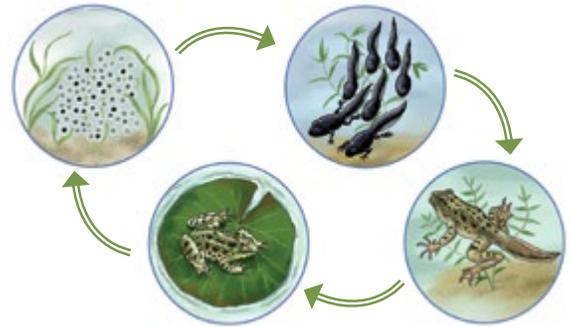
Pages 60–61

- Ask students to read **pages 60–61** to themselves to find the answer to the question: “What happens in the first parts of a toad’s life cycle?”
- When students have finished reading, restate the question and ask students to answer.
 - » The mother lays her eggs near shore in a pond, lake, or calm spot in a river or stream. The eggs that hatch produce tadpoles that are very fragile and use gills to breathe underwater.
- Direct students’ attention to the images on **page 61** and ask what parts of the image represent the first parts of a toad’s life cycle.
 - » the image of the eggs and the image of tadpoles

After a while, **tadpoles** begin swimming around and eating tiny **aquatic** plants. **Tadpoles** tend to stay together in **schools**, like fish. However, this makes it more likely that other animals will be able to catch and eat them. Most **tadpoles** end up as fish snacks.

If a **tadpole survives** for a month, skin will begin to grow over its **gills**. After about six to nine weeks, the **tadpole** also starts to grow little legs. As its body changes, the young frog or toad starts to look less like an **aquatic** animal and more like a land animal.

After a few months, a toad will make its way out of the water to land. At this stage, it may still have a tail, but that won't last long. By this time, its **gills** have become lungs. That means the toad now breathes **oxygen** from the air instead of **oxygen** from the water, like fish. Soon, it will be a full-grown adult toad living and hopping around on land. Adult **amphibians** are **carnivores**, eating insects, small **reptiles**, and even mice.



*Bottom: A young **amphibian** leaving the pond for land.
Top: The **life cycle** of a frog or toad*

Pages 62–63

- Have students read **pages 62–63** to learn about the other parts of a toad's life cycle.
- When students have finished reading, ask them to describe the other parts of a toad's life cycle.
 - » Tadpoles begin swimming around and eating, staying together in schools. After a month, skin will grow over the gills and legs will start to grow. After a few months, the tadpole is a frog or toad and makes its way onto land. Its gills have been replaced by lungs so it can breathe on land.
- Have students read the caption and look at the images on **page 63** to identify which images represent the other parts of a frog or toad's life cycle.
 - » the middle two and the bottom one

Adult toads are very good swimmers and can even swim underwater. But they cannot use their lungs to breathe underwater. Instead, their thin, moist skin absorbs **oxygen** from the water.

Amphibians are a very interesting animal group. **Amphibians** are the only type of animal that have both **gills** and lungs. As adults, they live on land but lay eggs in the water. The Latin meaning of the word **amphibian** makes perfect sense!



*This toad may be preparing to **hibernate** for the winter.*

Pages 64–65

- Ask students to read **pages 64–65** to fill in the blank in the following sentence: “Adult toads’ thin, moist skin ___ oxygen from the water.”
- When students have finished reading, repeat the sentence and call on a student to fill in the blank.
 - » absorbs
- Have students read the caption and look at the image on **page 65**.
- As a small group, add information about amphibians to Activity Page 6.3.

DISCUSSING THE READING (20 MIN.)

- Bring students from small groups back together as a class.
- Ask students what information they added to Activity Page 6.3. Remind students that they may add information about amphibians shared by classmates to their web.
- Independently, have student fill in the “Amphibian” section on Activity Page 3.2: Animal Classification Foldable.

Activity Page 3.2



Lesson 6: From Water to Land

Language



Primary Focus: Students will produce compound sentences.

 **TEKS 3.11.D.i; TEKS 3.11.D.viii**

Students will determine the meaning of words formed when *-ed* and *-ing* are added to a known root word. **TEKS 3.3.C**

 **GRAMMAR (20 MIN.)** **TEKS 3.11.D.i**

- Remind students they have learned to write simple sentences (those that contain one subject and one predicate). In grammar lessons, through the remainder of the year, they will learn to write different kinds of sentences that are more elaborate. Today, they will take the first step to writing different kinds of sentences by learning to identify compound sentences. Compound sentences are sentences that contain more than one independent clause.
- Explain that an independent clause is a clause, or part of a sentence, that has a subject and a predicate. An independent clause can stand alone and make sense as a separate sentence.

Note to Teacher: Some may confuse compound sentences with other types of sentences that simply include a compound subject or a compound predicate. The following examples are offered to provide clarity:

 **TEKS 3.11.D** Edit drafts using standard English conventions, including: (i) complete simple and compound sentences with subject-verb agreement; (viii) coordinating conjunctions to form compound subjects, predicates, and sentences; **TEKS 3.3.C** Identify the meaning of and use words with affixes such as im- (into), non-, dis-, in- (not, non), pre-, -ness, -y, and -ful.

S P

Jamal | chose chocolate cake for dessert, and his brother | chose ice cream.

- Point out, however, the use of the conjunction *and* in a sentence does not automatically mean that a sentence with *and* is a compound sentence.
- Direct students' attention to the third sentence you placed on the board in advance.

Squirrels and dogs are furry animals.

- Ask students if there are one or two subjects in the sentence. There are two. Ask students what the two subjects are. (*squirrels* and *dogs*) Ask students if there are one or two predicates in the sentence. There is one. Ask students what the predicate is. (*are furry animals*) Mark the sentence as follows:

S S P

Squirrels and dogs | are furry animals.

- Tell students that this sentence is not a compound sentence. It has two subjects, but it only has one predicate. Even though the conjunction *and* is used, this sentence does not have more than one independent clause. Therefore, this is not a compound sentence.
- Ask students how you might rewrite the sentence so that it is a compound sentence. The sentence already has two subjects. It needs an additional predicate. The sentence *Squirrels are furry animals, and dogs are furry animals* is a compound sentence because it has two subjects and two predicates.
- Direct students' attention to the third sentence you placed on the board in advance.

Fish swim in the lake and lay eggs.

- Ask students if there are one or two subjects in the sentence. There is one. Ask students what the subject is. (*fish*) Ask students if there are one or two predicates in the sentence. There are two. Ask students what the predicates are. (*swim in the lake* and *lay eggs*) Mark the sentence as follows:

S P P

Fish | swim in the lake and lay eggs.

- Ask students if this is a compound sentence. It is not a compound sentence. It has two predicates, but it only has one subject. This means there is not more than one independent clause. Therefore, this is not a compound sentence.
- Ask students how you might rewrite the sentence so that it is a compound

Activity Page 6.4



sentence. The sentence already has two predicates. It needs an additional subject. The sentence *Fish swim in the lake, and fish lay eggs* is a compound sentence because it has two subjects and two predicates.

- Have students turn to Activity Page 6.4 and complete it as a teacher-guided activity.
- Have students take home Activity Page 6.5 as homework.
- For additional practice, see Pausing Point pages PP6 and PP7.

SPELLING (20 MIN.)

- Refer to the previously created chart or display Digital Projection DP.U2.L6.2

➤ Projection DPU2.L6.2

Root Word	-ed	-ing

- When introducing the words, use these procedures:

Step 1: Introducing the Root Words

- Tell students these are the words on which they will be assessed. This week, students will be responsible for spelling the root words plus the forms of these words when the suffixes *-ed* and *-ing* are added. Explain that all of the spelling words this week are verbs to which students will be adding different suffixes.
- As you introduce each of the spelling words, write it in the table, pronouncing each word as you write it.

Support

Brainstorm with students the benefits and disadvantages of being an amphibian.

Challenge

Have students write an opinion piece supporting their position.



Root Word	-ed	-ing
smile		
rake		
file		
vote		
dine		
quote		
raise		
tire		
translate		
prepare		

Beginning

Have students draw a tree with “root” word *smile* at the bottom. Add branches to tree by adding suffixes *-ed* (*smiled*) and *-ing* (*smiling*).

Intermediate

Have students draw tree with “root” word *smile*. Add sample sentences to each branch: “I like to *smile*. The girl was *smiling*. The girl *smiled*.”

Advanced/

Advanced High

Draw another tree with more challenging words (e.g., *translate* or *prepare*). Add sample sentence to each branch: “I prepared my homework.”)

ELPS 1.C; ELPS 1.F

- Make sure to explicitly point out that the first word is the root word. Explain that a root word is what a word is called before any prefixes or suffixes are added to the word.
- When you reach the multisyllable words (*translate*, *prepare*), model for students how to chunk the word into syllables to say and spell the word. Explain that when we have words with more than one syllable, it can be helpful to divide a word into syllables if we don’t know how to read or spell it.
- Write the word *translate* in the table.
- Ask students to tell you the vowel sounds in the word. Point out that this word has a CVCe pattern with the ‘a_e’ separated vowel digraph standing for one sound, /ae/. You may want to use two fingers to simultaneously point to the ‘a’ and ‘e’ as you did in Unit 1 when reviewing the CVCe syllable pattern.
- Underline the vowels in the word like this:
 - translate
- “How many consonants are between the first two vowels?”
 - » three
- Tell students that when there are three consonants between two vowels, the word can be divided into syllables before or after the second consonant.
- Draw a line between the letters ‘s’ and ‘l’ like this:
 - trans | late

Note: For decoding and spelling purposes, it is not particularly important whether you divide this word as noted above or as “tran | slate.” In fact, you will find this word syllabicated either way in different dictionaries.

- Cover the second syllable, ‘late,’ and tell students that if the word is divided in this way, you would read this first syllable as /tranz/, since syllables ending with consonants are generally pronounced with the short vowel sound.
- Then, cover the first syllable, ‘trans,’ and ask students to read the last syllable, /laet/. Again, remind students that this word has a CVCe pattern (i.e., separated vowel digraph, so the ‘a_e’ stands for one sound, /ae/).
- Tell students that they can now easily see the parts of the word and it is easier to decode.
- Write the word *prepare* in the table.
- Ask students to tell you the vowels in the word. Remind students that this word has a CVCe pattern with the ‘a_e’ separated vowel digraph standing for one sound, /air/.
- Underline the letters that represent the vowel sounds in the word like this:
 - prepare
- “How many consonants are between the first two vowels?”
 - » one
- Tell students that when there is one consonant between two vowels, the word can be divided into syllables before or after that single consonant.
- Draw a line between the letters ‘e’ and ‘p’ like this:
 - pre | pare
- Cover the second syllable, ‘pare,’ and tell students that if the word is divided in this way, you would read this first syllable as /pree/, since syllables ending with vowels are generally pronounced with the long vowel sound.
- Then, cover the first syllable, ‘pre,’ and ask students to read the last syllable, ‘pare.’ Prompt students in blending and saying the word, /pree pair/, and point out this word sounds like an English word that you recognize.

Step 2: Adding the Suffixes *-ed* and *-ing* to the Root Words

- Tell students that you will now complete the remainder of the table by adding the suffixes *-ed* and *-ing* to each root word. Remind students that each root word is a verb and ask what the suffix *-ed* on the end of a verb signals.
 - » past tense; the action has already happened

- Ask students what the suffix *-ing* signals. (present tense; ongoing action that is still happening)
- Working with each root word, add the suffixes *-ed* and *-ing*. Point out to students that when words end with CVCe (Consonant-Vowel-Consonant-e), the final 'e' must be dropped before adding *-ed* or *-ing*.
- Also, point out to students that adding *-ed* sometimes adds a syllable to the word (*voted, quoted, translated*) and sometimes does not (*smiled, raked, filed, dined, tired, prepared*); adding *-ing* always adds a syllable to the word.
- Additionally, point out that the suffix *-ed* is pronounced /t/ in *raked*. The suffix *-ed* is pronounced /d/ in *smiled, filed, dined, raised, tired, and prepared*. In *voted, quoted, and translated*, the suffix *-ed* is pronounced /ed/ and adds an additional syllable.

Root Word	<i>-ed</i>	<i>-ing</i>
smile	smiled	smiling
rake	raked	raking
file	filed	filing
vote	voted	voting
dine	dined	dining
quote	quoted	quoting
raise	raised	raising
tire	tired	tiring
translate	translated	translating
prepare	prepared	preparing
Challenge Word: does		
Challenge Word: done		

- Explain that Challenge Words are words that are used very often. They may not follow spelling patterns and need to be memorized.
- Tell students that they will need to know how to spell these words as they will be included in their spelling assessment. Say each word using correct pronunciation: *does*—/dəz/ and *done*—/dɒn/. Use the Challenge Words in sentences as examples for students: “An amphibian does not eat or move when it is hibernating.” “The cookies are *done*.”
- Tell students that they will share this week’s spelling words on Activity Page 6.6 with a family member at home.

Lesson 6: From Water to Land

Take-Home Materials

Activity Pages 6.5, 6.6



- Students will take home Activity Page 6.5 to complete. Students will share this week's spelling words on Activity Page 6.6 with a family member at home.

7

Frogs

PRIMARY FOCUS OF LESSON

Reading

- Students will ask and answer questions to demonstrate understanding of tree frogs, referring explicitly to the text. **TEKS 3.6.B; TEKS 3.6.E**

Speaking and Listening

- Students will compare and contrast two texts about frogs. **TEKS 3.6.H**

Writing

- Students will write a short reflection about being a frog researcher. **TEKS 3.12.B**

FORMATIVE ASSESSMENT

Activity Page 7.2

Frog Exit Ticket Compare and contrast two texts.

TEKS 3.6.H

Activity Page 7.3

Field Journal Explain which frog you would like to

research. **TEKS 3.12.B**

- TEKS 3.6.B** Generate questions about text before, during, and after reading to deepen understanding and gain information; **TEKS 3.6.E** Make connections to personal experiences, ideas in other texts, and society; **TEKS 3.6.H** Synthesize information to create new understanding; **TEKS 3.12.B** Compose informational texts, including brief compositions that convey information about a topic, using a clear central idea and genre characteristics and craft.

LESSON AT A GLANCE

	Grouping	Time	Materials
Reading (40 min.)			
Frog Scavenger Hunt	Small Group	20 min.	<input type="checkbox"/> Chart Paper <input type="checkbox"/> Frog Scavenger Hunt Cards <input type="checkbox"/> Activity Page 7.1
Introducing the Reading	Whole Group	20 min.	<input type="checkbox"/> <i>Rattenborough's Guide to Animals</i>
Speaking and Listening (50 min.)			
Introducing the Read-Aloud	Small Group	5 min.	<input type="checkbox"/> <i>Rattenborough's Guide to Animals</i>
Presenting the Read-Aloud	Whole Group	15 min.	<input type="checkbox"/> Frog Venn Diagram <input type="checkbox"/> Activity Page 7.2
Compare and Contrast Texts	Small Group	20 min.	
Poison Dart Frog	Whole Group	10 min.	
Writing (30 min.)			
Field Journal	Independent	20 min.	<input type="checkbox"/> Activity Page 3.2, 7.3
Animal Foldable	Independent	10 min.	
Take-Home Material			
Nouns, Verbs, and Adjectives			<input type="checkbox"/> Activity Page 7.4

ADVANCE PREPARATION

- Determine small groups for Frog Scavenger Hunt.
- Print and cut the Frog Fact Cards. Hide the Frog Fact Cards around the classroom, but keep them visible enough for students to find them.

Scavenger Hunt
Frog Clue Card 1

The American green tree frog can be found in most parts of the southeastern United States.

Scavenger Hunt
Frog Clue Card 2

A poison dart frog lives in the rainforests of South America.

Scavenger Hunt
Frog Clue Card 3

A typical American tree frog is only about two inches long, so they are pretty small.

Scavenger Hunt
Frog Clue Card 4

The poison dart frog is only an inch and a half long.

Scavenger Hunt
Frog Clue Card 5

American tree frogs range in color from lime green to yellow.

Scavenger Hunt
Frog Clue Card 6

Many poison dart frogs are brightly colored.

Scavenger Hunt
Frog Clue Card 7

The American tree frog's most distinct characteristic is its long toes with suction cups.

Scavenger Hunt
Frog Clue Card 8

The poison dart frogs secrete poison that seeps out from its skin.

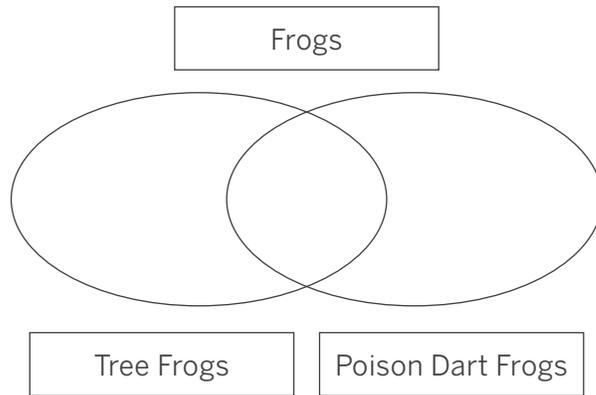
Scavenger Hunt
Frog Clue Card 9

American green tree frogs lay their eggs in or near the water.

Scavenger Hunt
Frog Clue Card 10

Adult poison dart frogs carry their newly hatched tadpoles up into the canopy, or tops of trees, above the rainforest.

- Create a Venn diagram on chart paper for each small group:



Universal Access

- Ask students to raise their hands if they have used a Venn Diagram before. Gesture to the Venn Diagram you have drawn on the board or on chart paper.
 - Ask students to draw two circles on a sheet of paper, or hand out papers with pre-drawn diagrams. Then they can write “same” in the middle and “different” on each side.
- Explain to students that today they will be comparing and contrasting using a Venn Diagram as a tool to help us. Explain that we will be asking ourselves questions such as, How are these two things the same? How are they different?
 - Choose a topic to compare and contrast, such as favorite desserts. Complete a Venn diagram based on student responses.
- Tell students that today they will be comparing and contrasting two types of frogs.
 - Hold up the photos of these two different kinds of frogs. Pass them around the room or walk around the room holding the photos so students can get a closer look.
 - Based on the photos, ask students to compare and contrast the two types of frogs.

Lesson 7: Frogs

Reading



Primary Focus: Students will ask and answer questions to demonstrate understanding of tree frogs, referring explicitly to the text. **TEKS 3.6.B; TEKS 3.6.E**

VOCABULARY FOR READING: TREE FROGS

- The following are vocabulary words used in this lesson. Preview the words with the students before the lesson and refer back to them at appropriate times. The words also appear in the glossary in the back of the student reader.

suction cup, a round, shallow cup that can stick to a surface (**suction cups**)

nocturnal, active during the night

climate, the usual weather patterns in a particular area

orchestra, a group of musicians who play instruments together

Vocabulary Chart for Tree Frogs		
Type	Tier 3 Domain-Specific Words	Tier 2 General Academic Words
Vocabulary	suction cup nocturnal climate orchestra	
Multiple-Meaning Core Vocabulary Words	climate	
Sayings and Phrases		

FROG SCAVENGER HUNT (20 MIN.)

- Graffiti Wall:** Pass out chart paper to small groups. Have students divide the paper into four equal sections. In one section, have students write, “What We Know about Frogs.” In small groups, students may write anything they know about frogs, draw pictures to show their understanding, or

TEKS 3.6.B Generate questions about text before, during, and after reading to deepen understanding and gain information;
TEKS 3.6.E Make connections to personal experiences, ideas in other texts, and society.

Activity Page 7.1



Support

Group students to find clues and answer questions on Activity Page 7.1.

ask questions. In the middle row, have students write, “What we want to know about Frogs.” Give students time to record questions they want to learn.

- Frog Scavenger Hunt: Explain to students that they are frog scientists going on a scavenger hunt to find information about frogs.
- Have students turn to Activity Page 7.1. Explain to students that facts about frogs are listed around the room. Students may need to search high and low for Frog Clues. After they find a Frog Clue, they will answer the question for that Frog Clue on Activity Page 7.1. Tell students that there are 10 Frog Clues in the classroom.
- When all students have finished the Frog Scavenger Hunt, review the questions each group wrote on their chart paper before the hunt.
 - Did we find any answers to the questions on the board?
 - What new questions do we have about frogs? (list additional questions on the board)
- Explain that today we are going to read two texts: one about tree frogs and the other about poison dart frogs. At the end of the day, we will focus on comparing and contrasting the two types of frogs.

INTRODUCING THE READING (20 MIN.)

- On their graffiti walls, have students write “Tree Frogs” in another section on their chart paper. Explain that throughout the reading, we will stop to add information to our graffiti wall about tree frogs.
- Tell students to take out their Reader and turn to the table of contents and locate the chapter “Tree Frogs.” Have students turn to the first page of the chapter and follow along during the reading.

8 Tree Frogs



As you have learned, **amphibians** are **vertebrates** that spend part of their lives in water and part of their lives on land. They start out like fish because they are born with **gills** and can breathe underwater. They later develop lungs, so they can breathe air and live on land. Tree frogs are one type of **amphibian**. They are different from most **amphibians** because they spend most of their lives in trees.

The American green tree frog can be found in most parts of the southeastern United States. A typical American tree frog is only about two inches long, so they are pretty small. But they can be loud if there are a few hundred of them gathered together.



An American green tree frog

Pages 66–67

- Read the title of the chapter together as a class: “Tree Frogs.”
- Read aloud the first paragraph on **page 66** as students follow along in their Reader.
- After reading it, ask students, “What *background* knowledge do you have that was included in this first paragraph?”
 - » Amphibians are vertebrates and can live in water and on land. They have gills to breathe underwater and later develop lungs to breathe air on land.
- What new information was presented in this paragraph about tree frogs?
 - » They spend most of their lives in trees.
- Graffiti Wall: Have students add new information to their Graffiti Wall.
- Read aloud the second paragraph on **page 66** as students follow along in their Reader.

If you live in the southern United States, near water and lots of trees, your summer nights may be filled with the gentle chirps of tree frogs.

American tree frogs range in color from lime green to yellow. A tree frog's most distinct **characteristic** is its long toes with **suction cups**. The **suction cups** allow a tree frog to cling to and climb anything. A tree frog can even stick to a window.

Tree frogs like to stay in the trees, so you are more likely to hear them instead of see them. They will leave the trees to lay eggs. They are most likely to come down to the ground after a heavy rain, when everything is nice and wet.



*This tree frog's long toes with **suction cups** help it climb this branch.*

Support

Explain that suction cups are sometimes used to hang items on glass.

Pages 68–69

- Read aloud the first two paragraphs on **page 68** as students follow along in their Reader.
- After reading, ask students, “What *background* knowledge do you have that was included in these paragraphs?”
 - » The word *characteristic* is used to describe something about tree frogs that makes them different.
- Ask students, “What new information was presented in these paragraphs?”
 - » Tree frogs range in color. They have suction cups on their long toes for climbing and sticking to anything.
- Ask students, “Why might tree frogs need to stick to things?”
 - » Answers may vary but could include that sticking to trees allows them to climb.

- Graffiti Wall: Have students add new information to their Graffiti Wall.
- Read aloud the last paragraph on **page 68** as students follow along in their Reader.



**ENGLISH
LANGUAGE
LEARNERS**

Reading
Reading/Viewing Closely

Beginning

Ask students true or false questions based on the chapter “Tree Frogs.” Frogs live in trees: true or false? Tree frogs are harmless: true or false?

Intermediate

Teachers work with a small group to add basic information to Graffiti Wall. For example, “Tree frogs are harmless.” Prompt with questions like “Where do tree frogs live?”

Advanced/

Advanced High

With teacher support, have students expand on information written on their Graffiti Wall. Check in with students.

ELPS 4.E

If you do see one, don't worry! They are pretty friendly. They are easy to catch, too. If you catch one, it might sit on your hand or crawl around on your back.

You will probably only find them at night because they are **nocturnal**. This means they sleep during the day and are active at night. They eat small insects, such as crickets, moths, and other **nocturnal** insects.

Like other **amphibians**, American green tree frogs lay their eggs in or near the water. Most of them like to lay their eggs very close to water, but not quite in it. Their favorite place is on a tree limb or leafy branch that has fallen into a pond.



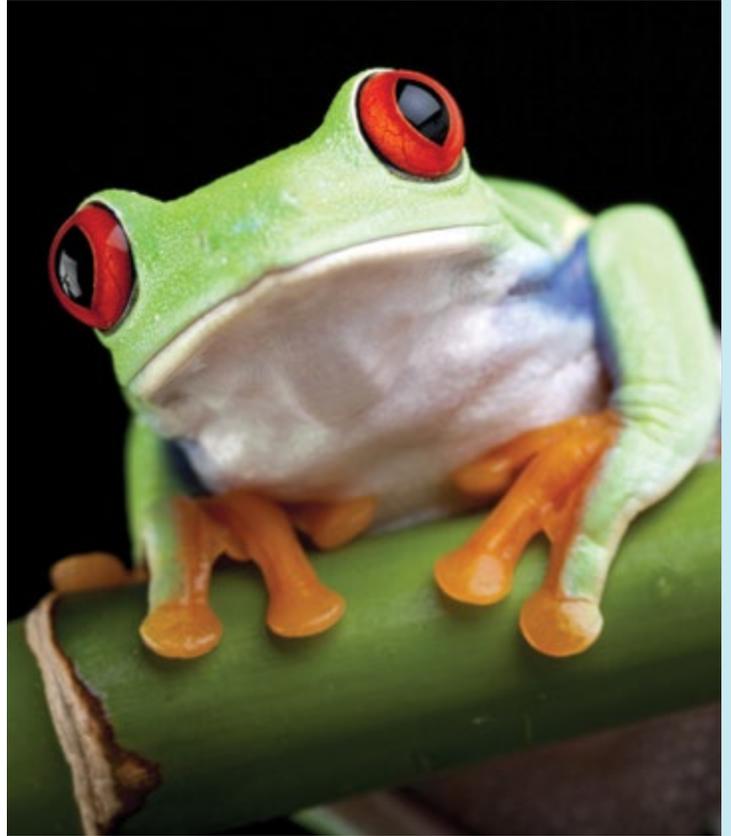
*The American green tree frog is **nocturnal**.*

Pages 70–71

- Read aloud **page 70** as students follow along in their Reader.
- After reading, ask students, “What *background* knowledge do you have that was included in these paragraphs?”
 - » Amphibians, including tree frogs, lay their eggs near water.
- Ask students, “What new information was presented on this page?”
 - » Tree frogs are harmless, easy to catch, and nocturnal.
- Graffiti Wall: Have students add new information to their Graffiti Wall.

Different kinds of tree frogs have been around since long before the dinosaurs roamed the earth. You can find many different types of tree frogs in parts of North and South America, Europe, and Southeast Asia. This is a red-eyed tree frog, which you can find in Mexico and much of Central America.

Most tree frogs prefer a fairly warm, wet **climate**. If you live in a place with tree frogs, consider yourself lucky. In the summer, you can fall asleep each night listening to the steady song of a tree frog **orchestra**.



This type of tree frog lives in Mexico and Central America.

Pages 72–73

- Read aloud **page 72** as students follow along in their Reader.
- After reading, ask students, “What new information was presented on this page?”
 - » Tree frogs have been around for a long time, they live on different continents, and they prefer a warm, wet climate.
- Graffiti Wall: Have students add new information to their Graffiti Wall.
- Have students share out their information from their Graffiti Wall.



Check for Understanding

As groups are presenting their Graffiti Walls, ensure that students have the key information listed about tree frogs. If not, review Frog Scavenger Hunt Cards for key information on tree frogs.

Lesson 7: Frogs

Speaking and Listening



Primary Focus: Students will compare and contrast two texts about frogs.



TEKS 3.6.H

VOCABULARY FOR “THE POISON DART FROG”

- The following are core vocabulary words used in this lesson. Preview the words with the students before the lesson. Students are not expected to be able to use these words immediately, but with repeated exposure throughout the lessons they will acquire a good understanding of most of the words. Students may also keep a “unit dictionary” notebook along with definitions, sentences, and/or other writing exercises using these vocabulary words.

secrete, to seep out from the skin (**secretes**)

Vocabulary Chart for “The Poison Dart Frog”		
Type	Tier 3 Domain-Specific Words	Tier 2 General Academic Words
Vocabulary	secrete	
Multiple-Meaning Core Vocabulary Words		
Sayings and Phrases		

INTRODUCING THE READ-ALoud (5 MIN.)

- On their graffiti walls, have students write Poison Dart Frog in the last section on their chart paper. Explain that throughout the reading, we will stop to add information to our graffiti wall about poison dart frogs.

Note: “The Poison Dart Frog” chapter may be used as a Read-Aloud, Partner or Small Group reading based on student need.



TEKS 3.6.H Synthesize information to create new understanding.

9 The Poison Dart Frog



A poison dart frog lives in the rainforests of South America. It is a tiny frog. It is only an inch and a half long.

It is cute, but it would be a mistake to pet this frog. Frogs like this one **secrete** poison. That means the poison seeps out from its skin. Some poison dart frogs secrete a mild poison. Others secrete a poison that is strong enough to kill humans. The poison helps protect the frog. It tells other animals to leave the frog alone.

The native people of South America collected poison from this kind of frog. They dipped darts into the poison. Then, they used blow guns to fire poisoned darts at their enemies. This is why the frogs are called poison dart frogs.

74

Many poison dart frogs are brightly colored. You might think this would be a dangerous trait. After all, many animals are camouflaged. Their camouflage helps them hide from **predators**. Why, then, would an animal be brightly colored? Why would it stand out? Wouldn't that make it easy for **predators** to spot?

Sapphire blue species of poison dart frog.



75

PRESENTING THE READ-ALOUD (15 MIN.)

Pages 74–75

- Read the title of the chapter together as a class: “The Poison Dart Frog.”
- Read aloud the first paragraph as students follow along in their Reader.
- What does the word *secrete* mean?
- Graffiti Wall: Have students add new information to their Graffiti Wall.
- The people of what continent made darts from frog poison?
 - » South America
- Graffiti Wall: Have students add new information to their Graffiti Wall.

Support

Explain that some poison dart frogs are yellow, gold, copper, red, green, blue or black.

Scientists think that is precisely the point. They have noted that many **poisonous** animals are brightly colored. They think the color serves as a warning sign. It tells other animals, “Watch out! You don’t want to eat me! I will poison you!”

Poison dart frogs are **amphibians**. That means they live in water and on land.

Poison dart frogs lay eggs. The female lays the eggs in a moist spot. Then, the male fertilizes the eggs. Eventually, **tadpoles** hatch out of the fertilized eggs.



Poison dart frog.

76



*Poison dart frogs have brightly colored skin that gives off the warning to **predators** of their toxicity.*

on their backs, one at a time. The parents secrete sticky mucus. This sticky mucus keeps the **tadpoles** from falling off the parents’ backs during the climb up to the canopy.

77

Pages 76–77

- To what group within the animal kingdom do poison dart frogs belong? Why?
- When are poison dart frogs able to leave the water?
- Graffiti Wall: Have students add new information to their Graffiti Wall.

For many species, the mothers do much of the childcare. This is not true of poison dart frogs. Mothers and fathers both take care of the young. Moms and dads both carry the **tadpoles** up into the canopy.

The parents deposit the **tadpoles** in small pools of water that form in plants at the top of the canopy. The **tadpoles** live in these pools for a while. They breathe underwater, using **gills**. They eat tiny animals that live in the water. If there is not enough food, the mother may lay eggs in the pool. The **tadpoles** can eat the eggs.

Eventually, the **tadpoles** experience a metamorphosis, or change. They grow legs. They develop lungs. They change into frogs. Once this happens, they are ready to leave the water.

The **habitat** of the poison dart frog is under threat. It is threatened by logging and farming. If trees are cut down, these frogs have nowhere to live. In recent years, lots of trees have been cut down in South America. Some people cut them down to sell the wood. Some cut them down to set up farms. As a result of this tree cutting, some kinds of poison dart frogs are now endangered.



Strawberry Poison-dart Frog.

Pages 78–79

- What can be done so that poison dart frogs are no longer endangered?
- Graffiti Wall: Have students add new information to their Graffiti Wall.



Check for Understanding

As groups are adding information to their Graffiti Walls, ensure that students have the key information listed about poison dart frogs. If not, review Frog Scavenger Hunt Cards for key information on poison dart frogs.

Challenge

Have students research different organizations that are working to save poison dart frogs and report their findings to the class.



Speaking and Listening
Reading/Viewing Closely

Beginning

Work on Venn Diagram in small group. List characteristics of tree frogs. Prompt students with true-or-false questions: "Tree frogs are brightly colored: true or false?"

Intermediate

Work on the Venn Diagram with a partner. Prompt partner groups by asking questions about tree frogs: "Are tree frogs amphibians? Do tree frogs lay eggs?"

Advanced/

Advanced High

Work on the Venn Diagram independently. Ensure students are referring to the texts and putting similarities and differences in the diagram.

ELPS 3.F

Activity Page 7.2



Support

Pull a small group to complete the Frog Venn Diagram.

COMPARE AND CONTRAST TEXTS (20 MIN.)

- Explain that after reading two texts, good readers ask themselves:
 - What information is alike in both texts?
 - What information is different in both texts?
- When we think back to important points in both texts, we are comparing and contrasting. When you compare two or more texts, you find ways they are alike. When you contrast two texts, you find things that are different.
- Pass the Frog Venn Diagram chart paper to each group. Explain that students will compare and contrast tree frogs and poison dart frogs. Be sure to include specific information about each.
- Exit Ticket: When small groups have finished the Frog Venn Diagram, have students independently complete the Exit Ticket on Activity Page 7.2.



Check for Understanding

If students could not identify how the two texts are different, pull students and compare the two texts using the Frog Scavenger Hunt Cards.

POISON DART FROG (10 MIN.)

- Have everyone sit in a circle. The teacher is the leader and a student is the detective. A new student will be the detective every round, but the leader will always be the teacher.
- The detective is removed from the group so he/she cannot see who is chosen to be the poison dart frog. All the students in the circle will close their eyes and the leader will walk around and tap one student on the shoulder. This student is the "Poison Dart Frog," but cannot tell anyone.
- The class opens their eyes and the detective sits or stands in the middle of the circle trying to figure out who is the poison dart frog.
- When the detective is not looking, the Poison Dart Frog will stick their tongue out to another student. The person will fall over and pretend to be poisoned. The Frog will continue to stick his or her tongue out at students.
- When the detective thinks he or she knows who the "frog" is, he or she will guess.

Lesson 7: Frogs

Writing



Primary Focus: Students will write a short reflection about being a frog researcher. **TEKS 3.12.B**

FIELD JOURNAL (20 MIN.)

- Have students turn to Activity Page 7.3 and respond to the prompt.

ANIMAL FOLDABLE (10 MIN.)

- When students have completed the writing prompt, they may add additional information about Frogs to Activity Page 3.2.

End Lesson

Lesson 7: Frogs

Take-Home Material

- Have students complete Activity Page 7.4.

Activity Page 7.3



**ENGLISH
LANGUAGE
LEARNERS**

Writing

Beginning

Provide students with sentence starters to complete Activity Page 7.3: I learned about two types of frogs, ____ and ____.

Intermediate

Provide students with sentence starters to complete Activity Page 7.3: If I were a frog researcher, I would want to learn about ____, because ____.

Advanced/ Advanced High

Provide students with sentence starters to complete Activity Page 7.3: If I were a frog researcher, I would want to learn about ____ because ____.

ELPS 5.G

Support

Brainstorm with students possible responses to the journal prompt.

Activity Page 7.4



TEKS 3.12.B Compose informational texts, including brief compositions that convey information about a topic, using a clear central idea and genre characteristics and craft.

Pausing Point 1

Note to Teacher

This is approximately the halfway point of the Animal Classification unit. Students have studied various aspects of animal classification, including the differences between vertebrates and invertebrates and between warm- and cold-blooded animals. Students have learned so far about fish and amphibians. It is recommended that you pause here and spend a day reviewing, reinforcing, or extending the material taught so far.

You may do any of the activities you choose in any order or combination, using whole class or small groups to meet the needs of the students.

Core Content Up to this Pausing Point

Students have:

- observed and described basic characteristics of zoo animals
- used text features to identify information about classifying animals
- identified the connection between vertebrates and invertebrates
- identified the characteristics of warm- and cold-blooded animals
- described the characteristics of fish
- described the characteristics of amphibians
- sequenced the stages of metamorphosis
- compared and contrasted two texts about frogs

ACTIVITIES

Key Vocabulary Brainstorming

Materials: Chart paper, chalkboard, or whiteboard

- Give students a key domain concept or vocabulary word such as *classification*. Have them brainstorm everything that comes to mind when they hear the word, such as the terms *warm-blooded/cold-blooded*, *vertebrate/invertebrate*, *animal group*, *characteristics*, *features*, etc. Record student responses on a piece of chart paper, a chalkboard, or a whiteboard for reference.

Poetry Reading

- Tell students that they are going to hear a poem titled “The Crocodile” written by Lewis Carroll.
- Tell students that Lewis Carroll is also the author of the fantasy stories *Alice’s Adventures in Wonderland* and *Through the Looking-Glass*.
- Tell students to listen for describing words, or adjectives, as you read the poem aloud. What parts of the crocodile does Carroll describe? What adverbs does he use to describe the crocodile’s actions? Do these descriptions use the kind of words we would usually think of when we think of a crocodile? **TEKS 3.10.D**
- Tell students you are going to slowly re-read the poem aloud. Ask students to write down any rhyming words they hear. How many pairs of rhyming words can they list? Do the poem’s rhyming words have a pattern? **TEKS 3.9.B**

The Crocodile

by Lewis Carroll

How doth the little crocodile

Improve his shining tail,

And pour the waters of the Nile

On every golden scale!

How cheerfully he seems to grin!

How neatly spreads his claws,

And welcomes little fishes in

With gently smiling jaws!

-
- After reading the poem, ask students to share a characteristic about the crocodile that they heard in the poem. Ask them to remember the describing words, or adjectives, that Lewis Carroll uses to create an image of the crocodile in its habitat.

TEKS 3.10.D Describe how the author’s use of imagery, literal and figurative language such as simile, and sound devices such as onomatopoeia achieves specific purposes; **TEKS 3.9.B** Explain rhyme scheme, sound devices, and structural elements such as stanzas in a variety of poems.

- Point out that adverbs such as *cheerfully*, *neatly*, and *gently* create a funny contrast with what the crocodile is actually doing.
- Have students share what they noticed about the poem’s rhyme scheme (ABAB). Guide them to recognize that this creates a cheerful singsong feeling. It contrasts humorously with the real meaning of the poem, which is that the crocodile is a dangerous predator.
- Reread the poem and ask students to think about how the poem’s imagery presents the crocodile. Is he shown as ferocious or beautiful? Is he frightening or kind? As time permits, you may wish to have some students create a drawing of this poem and caption it. Have them share their drawings and captions.

✚ Poetry Writing **TEKS 3.12.A**

- Using the poem “The Crocodile” as a model, have students create their own poems about an animal or animal group.

Collaborative Drawing

Materials: Animal Foldable (Activity Page 3.2) drawing paper, drawing tools
Rattenborough’s Guide to Animals

Note: This activity works well as a small group activity while students are working independently on research. You may need to assist students with passing the drawing paper so that each drawing remains facedown. You may wish to post the completed drawings on your classroom bulletin board.

- In advance, fold sheets of drawing paper into thirds. Students will be working in groups of three. Tell students they will be drawing animals from the reading and Read-Aloud. Tell students they may refer to their Animal Foldable (Activity Page 3.2) and their Reader to help them with ideas, and that they may choose an animal that has not yet been entered in detail on the Animal Foldable. The most important direction for this activity is that students may not tell the other members of their group what they are drawing. They must include characteristics of the animal group they are choosing. For instance, if someone chooses an animal in the fish group, the drawing would need to include scales and gills. The first student in each trio will have the assignment of drawing the head of any animal that is classified in one of the five vertebrate animal groups, and s/he will use just the first folded third of the paper.
- When this is complete, the first student will pass the drawing to the second student, being sure to keep the head of the animal face down. The second student in each trio will draw the middle section of a body of an animal of his/her choosing that is classified in one of the five vertebrate groups. The second

student will use the middle third of piece of paper. Tell students that this is not intended to be the same animal that the first student has drawn, and remind them that there is to be no discussion of what anyone draws. When the second student is finished, s/he will pass the drawing to the third student. The third student in each trio will draw the lower half of an animal's body (e.g., legs, tail, etc.) on the lower third of the drawing paper.

- After the third student in each trio has completed the final part, students may open up the folded paper to see what they have created!
- Last, each trio will collaborate to come up with a fitting name for the animal they have created.

Vertebrates

Materials: Bone models; bone images

- Show students bone models or pictures of the skeletons of humans and other animals to illustrate the term *vertebrate*. You may wish to also review the word *vertebrae* as the name for the bones that make up the backbones of vertebrates. Help students find the backbone (vertebrae) in each model/image and to feel their own vertebrae.

Raise Your Hand If . . .

- Tell students that they are going to play a game called “Raise Your Hand If . . .” Explain that you will begin with the phrase, “Raise your hand if,” and then you will add a second phrase about the characteristics of fish. Tell students to raise their hands if the statement is a true statement regarding the classification of fish. Clarify that the characteristics discussed will describe the majority of the animals in this group, and that rare exceptions will not be included.
 1. Fish are warm-blooded.
 2. Fish have backbones. (Raise hands.)
 3. The habitats fish live in are aquatic. (Raise hands.)
 4. Fish breathe oxygen in water using gills. (Raise hands.)
 5. Fish have feathers.
 6. Fish have scales. (Raise hands.)
- Explain that you will now play the game to review characteristics of amphibians.
 1. Fish are amphibians.
 2. Toads are amphibians. (Raise hands.)

3. Amphibians breathe through their skins. (Raise hands.)
4. Amphibians are invertebrates.
5. Amphibians are cold-blooded. (Raise hands.)
6. Amphibians go through a transformation called metamorphosis. (Raise hands.)
7. The word *amphibian* means “living two lives.” (Raise hands.)

Classroom Fish

Materials: Fish tank; aged tap water; small fish; fish food; turkey baster or air pump

- You may wish to prepare a tank as an aquarium so that students may closely study fish. Age tap water by letting it sit out for twenty-four hours. Add goldfish or other small fish from a pet store. If there is no air pump in the tank, squeeze a turkey baster into the water a few times every couple of days to oxygenate the water for the fish. Add fish food as directed on the package. Allow students to study and take notes on the fish. Be sure to point out key characteristics such as gills, fins, and scales.

Animal Groups Bulletin Board

Materials: Bulletin board; drawing paper; drawing tools; magazines

- Tell the class or a group of students that together they are going to make an Animal Groups bulletin board to help them remember what they have learned thus far in this domain. Have students brainstorm important information about the groups of animals they have learned. Have each student choose one idea to draw a picture of, and ask him or her to write a caption for the picture. Divide the bulletin board into five sections, one section for each animal group. Post students' drawings in the categories they describe. (*Cold-blooded* would go in the “Fish, Amphibians, or Reptiles” section, for example.) You may want to have more than one student draw/write about each concept.
- Then have students bring in images or cut out images of animals from each of the groups and post those onto the bulletin board as well. Tell students that they will continue to add to this bulletin board as they learn more about animal groups.

Riddles for Core Content

- Ask students riddles such as the following to review core content:
 - I am a process of organizing animal groups based on particular

characteristics. What am I called?

- » animal classification or taxonomy
- I am a person with a high level of knowledge about the natural world based on facts learned through observation and experiments. I classify animals into groups according to their characteristics. What am I?
 - » a taxonomist
- I am an animal whose body temperature is maintained by my surroundings. It is not constant. What am I?
 - » a cold-blooded animal
- I am an animal whose body temperature is constant and does not depend on the temperature of my surroundings. What am I?
 - » a warm-blooded animal
- I am an animal with a backbone. What am I?
 - » a vertebrate
- I am an animal without a backbone. What am I?
 - » an invertebrate
- I am an aquatic animal with gills and fins, and I have a body covered in scales. What am I?
 - » a fish
- I am an animal that can live both on land and in water. What am I?
 - » an amphibian
- I am the larva that hatches from the egg of an adult female frog. What am I?
 - » a tadpole

INDEPENDENT CENTERS

- During this Pausing Point, centers may be set up for student rotation. This time will allow students to work independently while a small, needs-based group can be taught. Literacy centers provide students of all abilities time to work together. Centers can be located anywhere in your classroom. You can put them on top of a bookshelf, on the seat of a chair, or on a desk. Be sure to introduce all the centers before students begin the rotation. Students account for their work at a center by completing Activity Page PP.4: Centers Checklist.

1. Text Features

Materials: A bin of informational books about animals; Blank paper or file folder; Activity Page PP.1; Pencil

Directions: At the center, students will choose an informational book and complete the Text Feature hunt on Activity Page PP.1.

Note: Students complete this activity in Lesson 1 using a chapter in the Reader.

2. Making a Poster

Material: Activity Page 4.1; Drawing paper; Drawing tools

Directions: Have students create posters of their own that name the five vertebrate animal groups. Be sure to have them include the name of each group along with a drawing of an animal in each group.

3. Sequence Signal Words

Material: Student reader; Lined paper; Activity Page PP.2

Directions: Go back into texts already read in the reader. Identify signal words in the text and include the page number. Students will record their responses on Activity Page PP.2.

4. Writing Center

Materials: Lined paper; Writing tool

Directions: Students may be given an additional writing prompt such as the following:

- I know that I am warm-blooded because _____.
- Scientists classify animals because _____.
- Would you like to be an amphibian? Why or why not?
- Warm-blooded animals are _____.
 - Cold-blooded animals are _____.
 - Two interesting facts I learned about animals are _____.
 - Compare and contrast a piranha and a toad.
 - Compare and contrast vertebrates and invertebrates.

- Choose an animal that is a pattern-breaker, and write a paragraph explaining why it should be classified differently than it is.
- Students will record their responses on lined paper.

5. Comparing Heights

Materials: Painter's tape; Ruler; Wall area; Images *Use images from Rattenborough's Guide to Animals*; Sticky notes; Activity Page PP.3

Directions: On a wall in the classroom, create a giant ruler. Measure increments in feet and label each foot using painter's tape. Next, place the correct Image Card on the wall as follows:

- Egret: 3.3 feet tall
- Toad: 8 inches
- Hippo: 5 feet
- Piranha: 6 inches
- Anaconda: 20 feet (Note: You may need to extend your measurement along the ceiling.)

Students will record their responses on Activity Page PP.3.

6. Compound Sentences

Materials: PP6 and PP7 from the Student Activity Book.

Directions: Students who would benefit from additional practice with compound sentences may complete Activity Pages PP6 and PP7 independently or in groups.

8

Cold-Blooded Scaly Vertebrates

PRIMARY FOCUS OF LESSON

Speaking and Listening

Students will determine the meaning of unknown words in the text.

✚ **TEKS 3.1.A; TEKS 3.3.B; TEKS 3.6.F; TEKS 3.7.F**

Writing

Students will write a short reflection on being a herpetologist.

✚ **TEKS 3.7.B**

Language

Students will determine the meanings of words formed when *re-* or *pre-* are

✚ added to known root words. **TEKS 3.2.A.v; TEKS 3.3.C**

FORMATIVE ASSESSMENT

Activity Page 8.1

Reptile Vocabulary Determine the meaning of

✚ unknown words. **TEKS 3.3.B; TEKS 3.7.F**

Activity Page 8.2

Field Journal Write about being a herpetologist.

✚ **TEKS 3.7.B**

Activity Page 8.3

Prefixes *re-* and *pre-* Write the correct word to

✚ complete the sentence. **TEKS 3.2.A.v; TEKS 3.3.C**



Writing Studio

If you are using Writing Studio, you may begin Unit 2, Lesson 1 after completing this lesson. If you have not done so already, you may wish to review the Writing Studio materials and their connection to this unit.

✚ **TEKS 3.1.A** Listen actively, ask relevant questions to clarify information, and make pertinent comments; **TEKS 3.3.B** Use context within and beyond a sentence to determine the meaning of unfamiliar words and multiple-meaning words; **TEKS 3.6.F** Make inferences and use evidence to support understanding; **TEKS 3.7.F** Use newly acquired vocabulary as appropriate; **TEKS 3.7.B** Write a response to a literary or informational text that demonstrates an understanding of a text; **TEKS 3.2.A.v** Demonstrate and apply phonetic knowledge by decoding words using knowledge of prefixes; **TEKS 3.3.C** Identify the meaning of and use words with affixes such as *im-* (into), *non-dis-*, *in-* (not, non), *pre-*, *-ness*, *-y*, and *-ful*.

LESSON AT A GLANCE

	Grouping	Time	Materials
Speaking and Listening (80 min.)			
Introducing the Read-Aloud	Small Group/ Whole Group	25 min.	<input type="checkbox"/> Lined paper <input type="checkbox"/> Context Clues Anchor Chart (Digital Projections) <input type="checkbox"/> Sticky Notes <input type="checkbox"/> <i>Rattenborough's Guide to Animals</i> <input type="checkbox"/> Context Clues Chart (Digital Projections) <input type="checkbox"/> Activity Page 8.1
Presenting the Read-Aloud	Small Group/ Whole Group	25 min.	
Discussing the Read-Aloud	Small Group/ Whole Group	25 min.	
Word Work: <i>Effectively</i>	Small Group/ Whole Group	5 min.	
Writing (15 min.)			
Field Journal	Independent	15 min.	<input type="checkbox"/> Activity Page 8.2
Language (25 min.)			
Introducing Prefixes <i>re-</i> and <i>pre-</i>	Whole Group	15 min.	<input type="checkbox"/> Activity Page 8.3
Spelling	Whole Group	10 min.	
Take-Home Material			
Blank Busters			<input type="checkbox"/> Activity Page 8.4

ADVANCE PREPARATION

Speaking and Listening

- On chart paper, create the following or prepare Digital Projection DP.U2.L8.1.

Context Clues	
Glossary	<ul style="list-style-type: none">• Look in the back of the book.
Sentences before or after	<ul style="list-style-type: none">• Look at the sentences before or after for clues.
Signal words and punctuation	<ul style="list-style-type: none">• called• _____ is/are• commas
Prefixes and suffixes	<ul style="list-style-type: none">• prefixes<ul style="list-style-type: none">◦ <i>un-</i> = not◦ <i>re-</i> = again• suffixes<ul style="list-style-type: none">◦ <i>-ful</i> = full of◦ <i>-able</i> = able to do

- On chart paper, create the following or prepare Digital Projection DP.U2.L8.2.

Context Clues		
Unknown Word	Clues from the Text	Predictions

Language

- Make sure the table with this week's spelling words are on display where students can see it for the spelling lesson.

Universal Access

In this lesson, students will practice determining the meaning of unknown words.

- Ask students what they do when they come across an unknown word while reading. Write the strategies that students state on the board. If students do not share strategies readily, prompt discussion with these questions:
 - When you find an unknown word in the text, what do you do? Do you keep reading?
 - Do you ask the teacher or a parent what the word means?
 - Do you ask your classmate what the word means?
 - Do you look up the word in the dictionary or on the Internet?
 - Write a list of strategies on the board.
- Tell students that today we will learn how to use context clues and make predictions so that we can figure out the meaning of unknown words.
 - Ask students if they know how to make a prediction. Where can you find a clue in the text when you are reading? If they do not know, prompt with these answers: Find words you know. Look at other words in the sentence. Look at words near the unknown word to give you clues. Break down the word into root words.

Start Lesson

Lesson 8: Cold-Blooded Scaly Vertebrates

Speaking and Listening



Primary Focus: Students will determine the meaning of unknown words in the text.

 **TEKS 3.1.A; TEKS 3.3.B; TEKS 3.6.F; TEKS 3.7.F**

VOCABULARY FOR “REPTILES: COLD-BLOODED SCALY VERTEBRATES”

- The following are core vocabulary words used in this lesson. Preview the words with the students before the lesson. Students are not expected to be able to use these words immediately, but with repeated exposure throughout the lessons they will acquire a good understanding of most of the words. Students

 **TEKS 3.1.A** Listen actively, ask relevant questions to clarify information, and make pertinent comments; **TEKS 3.3.B** Use context within and beyond a sentence to determine the meaning of unfamiliar words and multiple-meaning words; **TEKS 3.6.F** Make inferences and use evidence to support understanding; **TEKS 3.7.F** Use newly acquired vocabulary as appropriate.

may also keep a “unit dictionary” notebook along with definitions, sentences, and/or other writing exercises using these vocabulary words.

calcified, hardened, especially by deposits of the mineral known as calcium salts

sensitive, able to feel something very quickly or intensely

venomous, having or producing poisonous fluid

reptile, a cold-blooded animal with tough, scaly skin that uses its surroundings to control its body temperature (reptiles)

Vocabulary Chart for “Reptiles: Cold-Blooded Scaly Vertebrates”		
Type	Tier 3 Domain-Specific Words	Tier 2 General Academic Words
Vocabulary	calcified venomous reptile	sensitive
Multiple-Meaning Core Vocabulary Words		
Sayings and Phrases		



INTRODUCING THE READ-ALoud (25 MIN.)

TEKS 3.3.B

- Pass out lined paper and have students complete a 10-minute Quick Write, brainstorming what they have learned thus far in the Animal Classification unit.
- In small groups (3–4 students), have students read aloud their Quick Writes. Remind students to focus on speaking slowly and clearly.
- Explain to students that today we are going to listen to a text with many unknown words.
- Ask, “What are some ways we can figure out unknown words?”
 - Possible student response: Glossary, prefixes and suffixes, sentences before and after, and signal words.
- Display the Context Clues Anchor Chart (DPU2.L8.1). Read the chart aloud to the class.
- Pass out sticky notes (three per student). Explain that during the Read-Aloud, the class will pause to try to determine unknown words in the text.



TEKS 3.3.B Use context within and beyond a sentence to determine the meaning of unfamiliar words and multiple-meaning words.

PRESENTING THE READ-ALoud (25 MIN.)

- Tell students to turn to the table of contents and locate today’s chapter: “Reptiles: Cold-Blooded Scaly Vertebrates”. Have students turn to the first page of the chapter and follow along during the Read-Aloud.

Note: “Reptiles: Cold-Blooded Scaly Vertebrates” chapter may be used as a Read-Aloud, Partner or Small Group reading based on student need.

Chapter
10 Reptiles: Cold-Blooded Scaly Vertebrates



Read-Aloud

Hello, boys and girls. As you can see, Anna Anaconda is our starting place for today’s lesson. She is a green anaconda, one of the largest snakes in the world. When she unwinds, she is about as long as six of you stretched head-to-toe across the room, and she weighs about five hundred pounds! That’s more than about eight of you put together!

Anna Anaconda belongs to a group of animals that shares a lot of the same **characteristics** as the **amphibians** you learned about last time. Who knows the name of the group used by taxonomists to **classify** snakes? Yes, snakes are **reptiles**. **Reptiles** include crocodiles, alligators, lizards, turtles, and tortoises. But right now I want to focus on one **reptile** only: Anna. It’s no secret that she has a very high opinion of herself—she was quite fond of telling me so when I visited Peru. She thinks she is rather pretty, and I quite agree!



Rainforest with piranha, toad, and Anna Anaconda

In spite of her heavy body, Anna is a very good swimmer. Unlike some of her reptilian relatives, she is an **aquatic** snake, preferring swamps and rivers to the land.

Snakes often have a bad reputation. Some snakes are **poisonous**, releasing **poisonous** liquid called **venom** when they bite. Anna’s teeth are actually quite small and she is not **venomous**, so you need not worry about that. However, some people fear anacondas because they are members of a family of snakes called constrictors. Does anyone know what that means? Constrictors catch and kill their prey by coiling, or wrapping, around and squeezing them very tightly. Anacondas’ jaws open

Pages 80–81

- Vocabulary Pause: “Did you hear or read any words that you or someone else in the classroom may not know the definition of?”
 - possible student responses: unwinds, aquatic
- Write the word suggested from the class on a Context Clues Chart (DP.U2.L8.2). Model adding the word to the chart. For example, if the word is *aquatic*, model adding the word to the chart:

Unknown Word	Clues from the Text	Prediction
aquatic	Anna is a good swimmer. swamps rivers	having to do with water

so wide that they can swallow animals whole—fish, caiman, even jaguars and small deer. The anaconda’s powerful muscles crush the bones of its prey as it constricts. Once swallowed, the anaconda slowly digests its meal.

Uh oh, some of you look fearful. Don’t worry. You’re safe. Anacondas don’t live where you live in North America; you’ll find them far, far away on the continent of South America. That’s where I met Anna! Anna was sure to tell me that as far as she knows, there is no documented record of an anaconda ever killing a man, woman, or child. She and all anacondas are **nocturnal** animals and they hunt at night, eating frogs, toads, birds, fish, and turtles. She doesn’t have to hunt very often because one animal will satisfy her appetite for a long time.

Well, that’s a lot of information about Anna’s **characteristics**, the ways by which scientists **classify** her as belonging to the animal class called **reptiles**, or reptilia. Anna and other **reptiles** share some common **characteristics** with **amphibians**. Many scientists believe **reptiles** evolved from **amphibians**. **Reptiles** are all **vertebrates** because they all have backbones, and they are all **cold-blooded** because their internal **temperatures** change with their surroundings. Most **reptiles** can adjust

their body **temperatures** by basking in the sun to stay warm, or by hiding under a rock to stay cool.

Just like **amphibians**, **reptiles** live on land and in water. However, these two groups do—of course—have their differences. **Amphibians** depend upon water to stay alive much more so than **reptiles**. **Amphibians’** thin, wet, slimy skin needs moisture to absorb **oxygen** from the air, but **reptiles’** skin is waterproof. Unlike toads and salamanders, Anna and other **reptiles** do not breathe through their skin, which is hard, dry, and scaly. They use only their lungs to breathe air, which means they are able to withstand very harsh dry weather, conditions under which **amphibians** would not be able to **survive**. Of course, because they have lungs, this also means that **reptiles** cannot stay underwater very long without coming to the surface to breathe.

Amphibians usually spend part of their lives entirely in water, but this is not true of **reptiles** as a group. Whereas **amphibians** begin life with **gills**, **reptiles** are born with lungs and are never dependent upon **gills** for breathing. Remember how different baby **tadpoles** look from adult toads? This is not the case for **reptiles**. Baby **reptiles** usually look a lot like their parents. They do not undergo metamorphosis the way that **amphibians** do.

82

83

Pages 82–83

- **Vocabulary Pause:** “Did you hear or read any words that you or someone else in the classroom may not know the definition of?”
 - possible student responses: reputation, venom, coiling, appetite
- Write the word suggested from the class on a Context Clues Chart (DP.U2.L8.2). Model adding the word to the chart.

Support

Create a 2-column chart to organize information on amphibians and reptiles.



Speaking and Listening
Analyzing Language
Choices

Beginning

Teacher works with small group to complete sticky notes for Context Clues Chart. Prompt students to think about vocabulary by asking yes or no questions.

Intermediate

Work with a partner to complete sticky notes for Context Clues Chart.

Teacher checks in with students.

**Advanced/
Advanced High**

Students work independently to complete sticky notes for Context Clues Chart. Teacher monitors progress.

ELPS 1.C; ELPS 4.F

Support

Work with a small group to complete the sticky notes to place on the class's Context Clues Chart.

Challenge

Using the Context Clues Anchor Chart (DP.U2.L8.1), have students find an example of each of the strategies listed on the chart independently.

- Organize students into pairs and pass out three sticky notes to each pair of students.
- **Vocabulary Pause:** With a partner, students will determine any words that they or someone else in the classroom may not know the definition of.
 - possible student response: reptilia, evolved, basking
- Students will record the following responses on their sticky notes and place on the class Context Clues Chart (DP.U2.L8.2):
 - Sticky Note 1: Write the word.
 - Sticky Note 2: the context clues
 - Sticky Note 3: their predictions
- When student pairs have posted their responses on the class Context Clues Chart, read aloud some of the student responses as a whole group.



*From top left going clockwise: gecko, iguana, gecko, chameleon.
Bottom: Komodo dragon*

84

Let's take a look at some of the animals that belong to the animal group classified as **reptiles**. These include lizards, geckos, iguanas, and chameleons. Unlike snakes, most lizards have four legs. Chameleons have a keen sense of sight and very long tongues. Their brilliant colors—all shades of pink, blue, red, orange, turquoise, and green—help them camouflage when they come face-to-face with their enemies.

Earth's largest living lizard is the Komodo dragon. It can grow to be ten feet long and may weigh as much as 150 pounds! These giant island **carnivores** eat animals as large as goats, pigs, and deer.

Saltwater crocodiles are the largest **reptiles** on Earth, some weighing up to one ton. Looking like very large lizards, crocodiles make their homes in tropical **climates**, and are often seen floating like logs in the water with only their nostrils, eyes, and ears showing. Like Anna, they are **nocturnal** hunters, hunting at night. Crocodiles have the most powerful bite in the entire animal **kingdom** and are fierce hunters, living off fish and small **mammals**. Some live to be more than one hundred years old!

85

Pages 84–85

- Read aloud **pages 84–85**.



Alligator and crocodile

Alligators resemble crocodiles, but they are usually less **aggressive**, or boldly forceful, and live in freshwater **habitats**. Can you tell the difference between an alligator and a crocodile? Alligators usually have a wide, rounded, U-shaped snout, and crocodiles tend to have longer, more pointed, V-shaped noses.

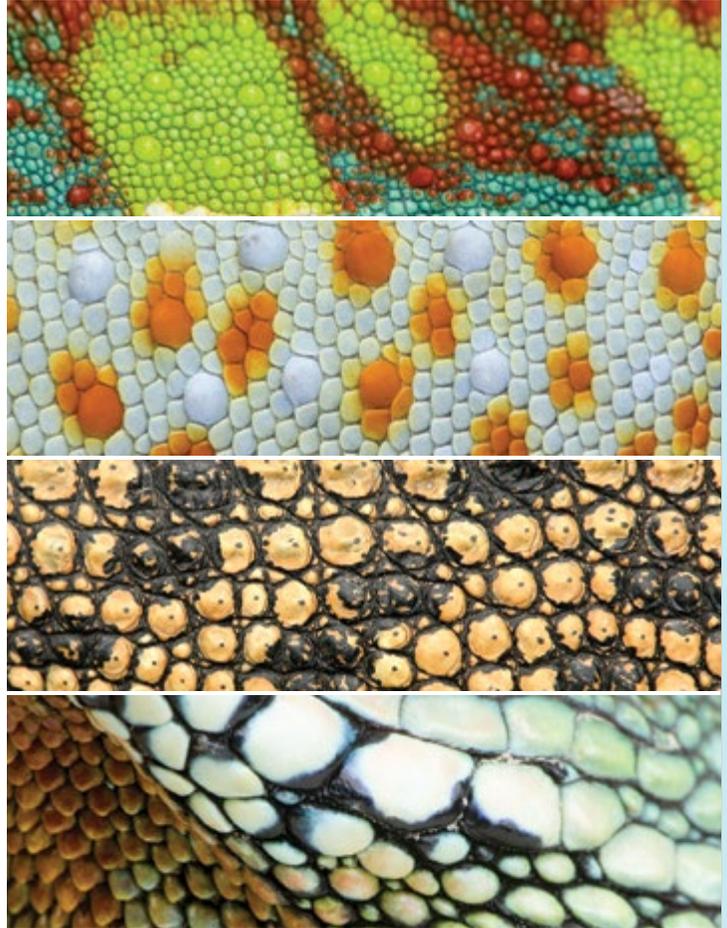
Pages 86–87

- Read aloud **pages 86–87**.

Look at all of these **reptiles** side by side: chameleons, Komodo dragons, crocodiles, and alligators. What do you notice about their skin? Is it rough or smooth? Does it look thick or thin?

Remember when I mentioned that **reptiles'** skin is waterproof, and that it is hard, thick, and scaly? Their type of scaly skin protects them from overheating, and because their skin is waterproof, it keeps water *inside* their bodies. Because **reptiles'** skin is very **sensitive** to—or easily affected by—**temperature**, it becomes hot or cold very quickly when exposed to sun or shade. Like many **amphibians**, some **reptiles** shed their skin. Many lizards and snakes shed their skin several times a year as they grow. Snakes do not eat their shed skin the way **amphibians** do.

Turtles and tortoises are the only **reptiles** with bony shells as part of their skeletons. Their backbones are actually fused to their shells. These shells may be flat or domed. Turtles have softer shells so that they can swim faster, but land-dwelling tortoises need hard, leathery shells to protect them from **predators**. Their legs vary in appearance, depending upon where they live as well. Sea turtles have oar-shaped flippers for moving through water **effectively**. Many turtles have claws which help them dig, and pond turtles also have webs between



Reptile scales

Pages 88–89

- Read aloud **pages 88–89**.
- Organize students into pairs and pass out three sticky notes to each pair of students.
- Vocabulary Pause: With a partner, students will determine any words that they or someone else in the classroom may not know the definition of.
 - Possible student response: fierce, exposed, maneuver
- Students will record the following responses on their sticky notes and place on the class Context Clues chart (DP.U2.L8.2):
 - Sticky Note 1: Write the word.
 - Sticky Note 2: the context clues
 - Sticky Note 3: their predictions
- When student pairs have posted their responses on the class Context Clues Chart, read aloud some of the student responses as a whole group.



Frog and snake eggs

their claws to effectively maneuver, or move, through water. Land tortoises—like the giant Galapagos—have huge, column-shaped legs with claws. These claws help them dig into the ground to move across it. Some turtle species live for more than a century! That’s a very long time indeed.

Body coverings are an important difference between **amphibians** and **reptiles**. Another thing that sets the two groups apart is their eggs. Remember the picture that showed strands of thousands of soft eggs that Tabitha Toad laid in the pond? Most **reptiles**

lay far fewer eggs, and they lay their eggs in nests on land. **Membranes**, soft outer coverings, that provide protection and also help to hold in necessary water for eggs to grow, usually coat the inside of reptilian eggs. In most **reptile** species, the eggs are also covered in leathery, **calcified** shells. A few snakes and lizards give birth to fully formed, live young instead of laying eggs. The garter snake, a snake that is right here in North America, is one of these exceptions to the rule; so is the Solomon Island Skink, a lizard whose **habitat** is near the continent of Australia.

Like **amphibians**, **reptiles** live all over the world. They prefer hot, low areas like rainforests, prairies, deserts, and oceans, but they can be found everywhere except near the cold South Pole.

If you are as fascinated as I am with **reptiles** and **amphibians**, you may want to think about becoming a herpetologist. Yes, indeed—*herpetologist* is the name given to a scientist who specializes in herpetology, the study of certain crawling animals, specifically, **reptiles** and **amphibians**. With more than 5,600 species of lizards alone, that should keep you busy for a lifetime!

Pages 90–91

- Read aloud **pages 90–91**.



DISCUSSING THE READ-ALoud (25 MIN.)

TEKS 3.6.F

1. **Literal.** How is the waterproof, scaly skin helpful to reptiles?
 - » It keeps water in, keeps them from overheating, and protects them.
 2. **Inferential.** What major characteristics represent animals in the group called reptiles?
 - » cold-blooded, vertebrates, covered in scales or bony plates, usually lay eggs, have lungs
 3. **Evaluative.** Compare and contrast a crocodile and an alligator.
 - » They are both reptiles; they both have hard, scaly skin; alligators prefer fresh water, and they have wide, rounded, U-shaped snout; crocodiles prefer salt water, and tend to have longer, more pointed, V-shaped noses.
- Have students complete the Exit Ticket on Activity Page 8.1 independently.

Activity Page 8.1



WORD WORK: EFFECTIVELY (5 MIN.)

TEKS 3.7.F

1. In the Read-Aloud you heard, “Sea turtles have oar-shaped flippers for moving through water effectively.”
2. Say the word *effectively* with me.
3. When something is accomplished effectively, it means that it is well done with purpose and success.
4. “There was no way for the principal to effectively get his message to the entire school while the public address system was broken.”
5. Think of a time when either you did something effectively or you observed something being done effectively. Be sure to use the word *effectively* when you tell about it. Ask two or three students to share. If necessary, guide and/or rephrase the students’ responses to make complete sentences: “I carved the pumpkin more effectively with _____.”
6. What’s the word we’ve been talking about? What part of speech is the word *effectively*?



TEKS 3.6.F Make inferences and use evidence to support understanding; **TEKS 3.7.F** Respond using newly acquired vocabulary as appropriate.

Activity Page 8.2



**ENGLISH
LANGUAGE
LEARNERS**



**Writing
Writing**

Beginning

Provide students with sentence starters to complete Field Journal.

With a small group of peers, have students brainstorm being a herpetologist: A herpetologist is someone who ____.

Intermediate

Provide students with sentence starters to complete Field Journal in partners: Herpetologists study _____. This sounds interesting because _____.

Advanced/

Advanced High

Provide students with sentence starters to complete Field Journal individually: Herpetologists study _____. This sounds interesting because _____. I would (not) want to be a herpetologist because _____.

ELPS 5.B

7. Use a Making Choices activity for follow-up. Directions: "I am going to ask you some questions about some things that you may be able to do effectively or that you may not be able to do effectively, or at all. Include the question in your answer, as well as the reason. For example, if I asked, 'Can you drive a car effectively?' you might answer, 'I don't think I could drive a car effectively because I am too young, and I don't know how!'"

» Answers may vary for all.

- Can you effectively draw a picture with markers?
- Can you help a family member effectively unload the car?
- Can you effectively launch a space rocket from your kitchen table?
- Can you effectively organize your desk?
- Can you effectively help plan a surprise party for someone you love?
- Can you effectively juggle seven beanbags?

Lesson 8: Cold-Blooded Scaly Vertebrates

Writing



Primary Focus: Students will write a short reflection on being a herpetologist. **TEKS 3.7.B**

FIELD JOURNAL (15 MIN.)

- Have students complete the Field Journal on Activity Page 8.2.

TEKS 3.7.B Write a response to a literary or informational text that demonstrates an understanding of a text.

Lesson 8: Cold-Blooded Scaly Vertebrates

Language



Primary Focus: Students will determine the meanings of words that are formed when *re-* or *pre-* are added to known root words. **TEKS 3.2.A.v; TEKS 3.3.C**

INTRODUCING PREFIXES RE- AND PRE- (15 MIN.)

Prefixes *re-* and *pre-*

- Review the Prefix poster that you displayed in the classroom.
 - A prefix is a word part placed in front of a root word. Prefixes change the meaning of the root word.
- Emphasize again that prefixes are added to the beginning of a root word. They change the meaning of the root word, and they add a syllable to the root word.
- Tell students that the two prefixes that they will study this week are *re-* and *pre-*.
- Explain that *re-* means “to do again” and *pre-* means “before.”
- Tell students that this week’s root words are verbs. Ask students what verbs are (action words). When *re-* and *pre-* are added to verbs, the new words are also verbs.
- Write the word *write* on the board. Briefly discuss the meaning of the word and then use it in a sentence. (to make letters, words, or numbers or to create something to be read (e.g., “Mom asked me to write ‘green peppers’ on her grocery list.”))
- Add the prefix *re-* to write and have students read the prefix, read the new word, and then discuss the meaning of the new word.
 - » to make letters, words, or numbers again or to create something to be read again
- Ask students for examples of things that they might rewrite.
 - » Answers may vary but could include homework, something with sloppy handwriting, a paper with edits, etc.
- Continue in this manner for the remaining *re-* words, using the following chart as a guide.

Note: You will not write the information in the shaded columns on the board as that information is intended for use during oral instruction.

Support

Assist students by creating a list of reasons to support their answer on Activity Page 8.2.

TEKS 3.2.A.v Demonstrate and apply phonetic knowledge by decoding words using knowledge of prefixes; **TEKS 3.3.C** Identify the meaning of and use words with affixes such as *im-* (into), *non-* *dis-*, *in-* (not, non), *pre-*, *-ness*, *-y*, and *-ful*.

Root Word	Meaning	Affixed Word	Meaning	Sentence
do	(verb) to complete or perform an action	redo	(verb) to complete or perform an action again	I decided to <i>redo</i> one side of the fort I made for my social studies project because it didn't look right.
fill	(verb) to make something full	refill	(verb) to make something full again	Grandma asked me to <i>refill</i> her water glass during dinner.
load	(verb) to put things into a container	reload	(verb) to put things into a container again	We used a shovel to <i>reload</i> the wheelbarrow with dirt every time my brother emptied it.
name	(verb) to label something	rename	(verb) to label something again	Next year, we will <i>rename</i> our soccer team when the new coach arrives.
view	(verb) to look at	review	(verb) to look at again	I want to <i>review</i> my school supply list to make sure I didn't forget anything.
tell	(verb) to report information	retell	(verb) to report information again	Miss Brewster asked Thomas to <i>retell</i> the story in his own words.

- Remind students that *pre-* means “before.”
- Write the word *heat* on the board. Briefly discuss the meaning of the word and then use it in a sentence.
 - » To make warm or hot; I needed to *heat* my chicken nuggets in the microwave.
- Add the prefix *pre-* to *heat* and have students read the prefix, read the new word, and then discuss the meaning of the new word.
 - » to make warm or hot before
- Ask students for examples of things that you might need to *preheat*.
 - » Answers may vary but could include an oven before cooking, an iron before using it to iron a shirt, etc.
- Continue in this manner for the remaining *pre-* words, using the following chart as a guide.

Note: You will not write the information in the shaded columns on the board as that information is intended for use during oral instruction.

Activity Page 8.3



**ENGLISH
LANGUAGE
LEARNERS**

Language
Foundational Skills

Beginning

Highlight prefixes *re-* and *pre-* on the Activity Page 8.3. Work in small groups with teacher. Provide students with the following examples to discuss the word *refill*: “I fill my cup up with water. I drink water. I refill my cup with water.”

Intermediate

With partner, discuss the meaning of these words: *cook* vs. *precook* and *fill* vs. *refill*.

Advanced/ Advanced High

With a partner, discuss the meaning of these words: *preselect* vs. *select* and *retell* vs. *tell* with partner.

ELPS 1.D

Support

Complete Activity Page 8.3 as a teacher-guided activity.

Challenge

Have students research and list additional words with the *re-* and *pre-* prefixes.

Root Word	Meaning	Affixed Word	Meaning	Sentence
pay	(verb) to give money for something	prepay	(verb) to give money for something before	My brother uses a cell phone plan that requires him to <i>prepay</i> for the next month of use.
print	(verb) to use a machine that makes pages of words or pictures	preprint	(verb) to use a machine that makes pages of words or pictures before	He chose to <i>preprint</i> directions to the arena in case he couldn't borrow his sister's navigation system.
set	(verb) to arrange	preset	(verb) to arrange before	Maria helped her sister <i>preset</i> the channels on her car radio before leaving.
select	(verb) to choose	preselect	(verb) to choose before	For my cousin's wedding reception, we had to <i>preselect</i> our dinner from several choices.
view	(verb) to look at	preview	(verb) to look at before	We will <i>preview</i> scenes from the next season of our favorite show.
cook	(verb) to prepare and heat food	precook	(verb) to prepare and heat food before	The roast was so large that Grandma had to <i>precook</i> it for several hours the night before our big family dinner.

- Have students complete Activity Page 8.3 independently.

SPELLING (10 MIN.)

- Tell students that they will practice writing their spelling words for the week, just like they did with last week's spelling words.
- Tell students to turn to Activity Page 8.4.
- Ask all students to read the statement in Number 1 silently and fill in the blank. Point out to students that the root words are listed in the box on the worksheet, but they may need to use other forms of a root word with *-ed* and *-ing* added. These other words are not listed on the worksheet but are listed on the table displayed in the classroom with this week's spelling words.

Activity Page 8.4



- When students have completed Number 1, call on one student to read Number 1 aloud with the blank filled in with the spelling word.
- Discuss the proper spelling of the word in the blank, referencing the table of this week's spelling words. Have students compare their spelling with the spelling in the table. Also, discuss the correct answer to be sure students understand why it is correct.
- Have students move on to Number 2 and fill in the blank on their own.
- Have students take home Activity Page 8.4. Students use Activity Page 8.4 in Lesson 9.

Lesson 8: Cold-Blooded Scaly Vertebrates

Take-Home Material

- Have students complete Activity Page 8.4.

Activity Page 8.4



9

Reptiles

PRIMARY FOCUS OF LESSON

Reading

Students will closely read an informational text to learn more about reptiles.

✚ **TEKS 3.9.D.i; TEKS 3.9.D.ii; TEKS 3.10.A; TEKS 3.10.B; TEKS 3.10.C**

Writing

✚ Students will record key information about reptiles. **TEKS 3.7.E**

Language

Students will determine the meaning of words formed when *-ed* or *-ing* are

✚ added to a known root word. **TEKS 3.3.C**

FORMATIVE ASSESSMENT

Activity Page 9.1

Reptile Web Record key information about reptiles.

✚ **TEKS 3.7.E**

Activity Page 9.2

Blank Busters Create your own Blank Busters

✚ sentences. **TEKS 3.3.C**

✚ **TEKS 3.9.D** Recognize characteristics and structures of informational text, including: (i) the central idea with supporting evidence; (ii) features such as sections, tables, graphs, timelines, bullets, numbers, and bold and italicized font to support understanding; **TEKS 3.10.A** Explain the author's purpose and message within a text; **TEKS 3.10.B** Explain how the use of text structure contributes to the author's purpose; **TEKS 3.10.C** Explain the author's use of print and graphic features to achieve specific purposes; **TEKS 3.7.E** Interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating; **TEKS 3.3.C** Identify the meaning of and use words with affixes such as im- (into), non- dis-, in- (not, non), pre-, -ness, -y, and -ful.

LESSON AT A GLANCE

	Grouping	Time	Materials
Reading (85 min.)			
Introducing the Reading	Whole Group	20 min.	<input type="checkbox"/> Chart paper <input type="checkbox"/> Close Reading Anchor chart (Digital Projections) <input type="checkbox"/> Blank paper <input type="checkbox"/> <i>Rattenborough's Guide to Animals</i> <input type="checkbox"/> Activity Pages 9.1, 9.4
Whole Group First Reading	Whole Group	20 min.	
Discussing the Reading	Whole Group	5 min.	
Whole Group Second Reading	Whole Group	10 min.	
Discussing the Reading	Whole Group	10 min.	
Writing: Reptile Web	Whole Group	20 min.	
Writing (15 min.)			
Animal Foldable	Independent	15 min.	<input type="checkbox"/> Activity Page 3.2
Language (20 min.)			
Spelling: Blank Busters	Partner/ Independent	20 min.	<input type="checkbox"/> Activity Pages 8.4, 9.2
Take-Home Material			
Reptiles			<input type="checkbox"/> Activity Page 9.3

ADVANCE PREPARATION

Reading

- Designate an area on the chalkboard or dry erase board space in the classroom. If space is not available, post chart paper up in the classroom.
- On chart paper, create the following or prepare Digital Projection DP.U2.L9.1.

Close Reading
1 st Read: Big Picture
Focus on: <ul style="list-style-type: none">• Central idea• Asking and answering questions• Summarizing the text• Describing important parts• Retelling
2 nd Read: Dig Deeper
Focus on: <ul style="list-style-type: none">• Text features and text structures• Author's purpose• Vocabulary words
3 rd Read: All Together
Focus on: <ul style="list-style-type: none">• Compare and contrast to other texts• Inferences• Key points

Universal Access

This lesson focuses on close-reading skills. Ask students if they have ever read a text more than once.

- Ask students if they have seen a movie more than once. Lead a group discussion on what students learned the second time they read a book or watched a movie. Ask students if they noticed or learned anything the second time.
- Discuss with students the benefits of reading a book or watching a movie twice. Record student answers on the board or chart paper.
- After the lesson, return to students' responses on chart paper after reading "Reptiles" twice.

Lesson 9: Reptiles

Reading



Primary Focus: Students will closely read an informational text to learn more about reptiles. **TEKS 3.9.D.i; TEKS 3.9.D.ii; TEKS 3.10.A; TEKS 3.10.B; TEKS 3.10.C**

VOCABULARY FOR READING: “REPTILES”

- The following are vocabulary words used in this lesson. Preview the words with the students before the lesson and refer back to them at appropriate times. The words also appear in the glossary in the back of the student reader.

poisonous, full of poison or venom

inject, to force in fluid, like poison, usually by piercing the skin (**injects**)

venom, poison produced by an animal used to harm or kill another animal

molt, to shed skin (**molting, molted**)

Vocabulary Chart for “Reptiles”

Type	Tier 3 Domain-Specific Words	Tier 2 General Academic Words
Vocabulary	venom molt	poisonous inject
False Spanish Cognates		
Multiple-Meaning Core Vocabulary Words	venom	poisonous inject
Sayings and Phrases		

INTRODUCING THE READING (20 MIN.)

- Splash the Chalkboard: Pass out paper to each student. Ask students to brainstorm what they learned about reptiles in the previous lesson on their paper. After five minutes of brainstorming, ask students to come up to

TEKS 3.9.D Recognize characteristics and structures of informational text, including: (i) the central idea with supporting evidence; (ii) features such as sections, tables, graphs, timelines, bullets, numbers, and bold and italicized font to support understanding; **TEKS 3.10.A** Explain the author’s purpose and message within a text; **TEKS 3.10.B** Explain how the use of text structure contributes to the author’s purpose; **TEKS 3.10.C** Explain the author’s use of print and graphic features to achieve specific purposes.

the board and record their responses. After students have recorded their responses, ask students to analyze the responses for similarities, differences, and surprises.

- Explain to students that we are going to read another text about reptiles. Explain that today's reading will be a little different from previous readings. Today we are going to read a passage twice. During each reading, we will focus on different aspects of the text.
- Refer to the previously created chart or display Digital Projection DP.U2.L9.1. Read through the difference between the 1st, 2nd, and 3rd readings. Explain that good readers read a text many times and learn new things during each reading.

➤ **Projection DP.U2.L9.1**

WHOLE GROUP FIRST READING (20 MIN.)

- Tell students to turn to the Table of Contents and locate today's chapter, "Reptiles." Have students turn to the first page of the chapter and follow along during the reading.

11 Reptiles



Hi again, it's Rattenborough! You have already learned a little about today's group of animals, which are **reptiles**. You already know that **reptiles** are **cold-blooded** animals and **vertebrates**. But did you know that **reptiles** live both on land and in water like **amphibians**? **Reptiles** have lungs from the time they are born, not **gills**, like **amphibians**.

You may also already know that **reptiles** lay eggs. Some **reptile** eggs have soft shells and some have hard shells. They lay their eggs on land. A few snakes hold the eggs inside their bodies until they hatch. Very few rare **reptiles** do give birth to live young, never making real eggs.

Many different groups of animals are classified as **reptiles**. These include animals such as crocodiles, alligators, turtles, tortoises, snakes, and lizards.



Crocodiles, turtles, snakes, and lizards are all reptiles.

Pages 92–93

- Read the title of the chapter together as a class: “Reptiles.”
- Have one student read Rattenborough’s greeting in the first paragraph on **page 92**.
- Ask students to read **pages 92–93** to themselves to find out some characteristics of reptiles.
- When students have finished reading, ask them to list some characteristics of reptiles.
 - » cold-blooded, vertebrates, live both on land and in water, lay eggs
- Ask students to name some reptiles and read the sentence that has the answer.
 - » These include animals such as crocodiles, alligators, turtles, tortoises, snakes, and lizards.
- Ask students to summarize the second paragraph.
 - » Reptiles lay eggs.

Some people may think **reptiles**, mainly snakes, are scary. Most **reptiles** will not harm people. But there are some **reptiles** that you should try to avoid. The black mamba is the best example. This is the longest and most **poisonous** snake in Africa. It is also the deadliest snake in the world. A mamba **injects venom** whenever it bites something. A mamba bite can kill any animal—even a human—in less than 20 minutes!

Rattlesnakes, copperheads, and water moccasins are types of **poisonous** snakes found in the United States. Rattlesnakes, or rattlers, are easy to spot because they have “rattles” that shake on their tails. You know when there is one nearby because you can hear the rattles shaking.

Copperheads have a triangle-shaped head and dark stripes. They are normally less than three feet long. They prefer to live in rocky, wooded areas. They only bite humans if they are attacked or startled.

Water moccasins live in the water so they are hard to spot. They have a dangerous bite, but rarely attack humans. If you live in a southern state like Florida, Alabama, Mississippi, or Louisiana, you are more likely



Rattlesnake



Copperhead



Water Moccasin

Pages 94–95

- Ask students to read **pages 94–95** to themselves to answer the question: “What snake is the longest and most poisonous in Africa?”
- When students have finished reading, restate the question above and ask them to answer.
 - » black mamba
- Tell students that some of these snakes also live in Texas. Invite students to share which of these snakes they may have seen where they live.

to see one. They live in swamps or shallow lakes. You might want to avoid swimming in shallow waters if you live in those states.

Some people think snakes are slimy because their skin looks shiny, but most **reptiles** have thick, dry, scaly skin. **Reptiles** are known for **molting**, or shedding their skin. **Reptiles** shed their skin several times during their lives. Snakes, for example, shed their skin in one big piece. They do this when they grow too big for their current skin.

The biggest **reptile** is the saltwater crocodile, which lives mainly in Australia and a few parts of India and Asia. Male saltwater crocodiles can grow to be 20 feet long or more! Attacks on humans are rare. If they do attack a human, it's usually not a happy ending.

Crocodiles have the most powerful bite in the entire animal **kingdom**. Their bites are ten times stronger than that of a great white shark. Despite their power when they bite and snap their jaws shut, it is fairly easy to hold a crocodile's mouth closed. They open their mouths using a weak set of muscles. In fact, a third grader may be able to hold a crocodile's jaw shut . . . would you like to try?



*This snakeskin has been left behind by a large snake after it **molted**.*

96

97

Pages 96–97

- Ask students to read the first paragraph of **page 96** to themselves to answer the question: “How many times do reptiles shed their skin?”
- When students have finished reading, restate the question above and ask students to answer.
 - » several times in their lives
- Tell students to continue to read **page 96** to themselves to answer the question: “What is the biggest reptile?”
- When students finish reading, restate the question above and ask students to answer.
 - » saltwater crocodiles
- What is the central idea of **Page 96**?
 - » Crocodiles are the biggest reptiles, with the most powerful bite.

Support

Provide students with Activity Page 9.4 so they can underline the central idea in paragraphs and circle answer in the text.

Challenge

Have students write their own questions and answers about the text.



Reading
Reading/Viewing Closely

Beginning

Ask questions based on “Reptiles.” Ask students to determine whether the statement is true or false, e.g., “Some reptiles shed their skin: true or false?”

Intermediate

Prompt students to use key vocabulary when answering questions, e.g., “What is it called when a snake sheds its skin?” (molting)

**Advanced/
Advanced High**

After reading “Reptiles,” discuss with students the most interesting facts. Encourage students to find two facts about reptiles and find examples from the text.

ELPS 4.E

DISCUSSING THE READING (5 MIN.)

1. **Literal.** Name four animals classified as reptiles.
 - » Answers may vary but could include crocodile, alligator, turtle, tortoise, snake, and lizard.
2. **Literal.** Why is a rattlesnake easy to identify?
 - » You can hear the “rattles” shaking on its tail.
3. **Literal.** What reptile has the most powerful bite in the animal kingdom?
 - » crocodile

WHOLE GROUP SECOND READING (10 MIN.)

TEKS 3.10.A; TEKS 3.10.B

- Explain to students that the whole class will read the chapter again, but focus on text structures, words and phrases, and author’s purpose.



TEKS 3.10.A Explain the author’s purpose and message within a text; **TEKS 3.10.B** Explain how the use of text structure contributes to the author’s purpose.

11 Reptiles



Hi again, it's Rattenborough! You have already learned a little about today's group of animals, which are **reptiles**. You already know that **reptiles** are **cold-blooded** animals and **vertebrates**. But did you know that **reptiles** live both on land and in water like **amphibians**? **Reptiles** have lungs from the time they are born, not **gills**, like **amphibians**.

You may also already know that **reptiles** lay eggs. Some **reptile** eggs have soft shells and some have hard shells. They lay their eggs on land. A few snakes hold the eggs inside their bodies until they hatch. Very few rare **reptiles** do give birth to live young, never making real eggs.

Many different groups of animals are classified as **reptiles**. These include animals such as crocodiles, alligators, turtles, tortoises, snakes, and lizards.



*Crocodiles, turtles, snakes, and lizards are all **reptiles**.*

Pages 92–93

- Ask students to read **pages 92–93** to themselves to find out how the photos and captions on **page 93** support the text.
- When students have finished reading, ask them to explain the photos and caption.
 - » The top two photos show crocodiles from babies to adults. The middle pictures show the same: turtles from a baby to an adult. The bottom left picture shows a snake. It is pictured without eggs because snakes hold their eggs inside their bodies until they hatch. The bottom right picture shows a lizard with its eggs.

Some people may think **reptiles**, mainly snakes, are scary. Most **reptiles** will not harm people. But there are some **reptiles** that you should try to avoid. The black mamba is the best example. This is the longest and most **poisonous** snake in Africa. It is also the deadliest snake in the world. A mamba **injects venom** whenever it bites something. A mamba bite can kill any animal—even a human—in less than 20 minutes!

Rattlesnakes, copperheads, and water moccasins are types of **poisonous** snakes found in the United States. Rattlesnakes, or rattlers, are easy to spot because they have “rattles” that shake on their tails. You know when there is one nearby because you can hear the rattles shaking.

Copperheads have a triangle-shaped head and dark stripes. They are normally less than three feet long. They prefer to live in rocky, wooded areas. They only bite humans if they are attacked or startled.

Water moccasins live in the water so they are hard to spot. They have a dangerous bite, but rarely attack humans. If you live in a southern state like Florida, Alabama, Mississippi, or Louisiana, you are more likely



Support

Remind students that the glossary provides a definition for all bolded words in the selection.

Pages 94–95

- Ask students to read **pages 94–95** to themselves to answer the question: “Do you think reptiles are scary?”
 - When students have finished reading, restate the question above and ask them to answer.
 - » Answers may vary.
- “Do you agree or disagree with the author that some people think reptiles, mainly snakes, are scary?”
- “What does *inject* mean?”
- » To force in fluid, like poison, usually by piercing the skin
- Where else have you heard the word *inject*?
- » vaccinations/shots

- Ask students to look over the photos and read the caption on **page 95** to answer the question: “How did the photos on **page 95** help you to understand the reading on **page 94?**”
- When students have finished reading, restate the question above and ask them to answer.
 - » The reading focuses on the main characteristics of the rattlesnake, copperhead, and water moccasin. The photos on **page 95** show each of their unique features: the rattle on the rattlesnake, the triangle-shaped head and dark stripes of the copperhead, and the water moccasin’s habitat in water.

to see one. They live in swamps or shallow lakes. You might want to avoid swimming in shallow waters if you live in those states.

Some people think snakes are slimy because their skin looks shiny, but most **reptiles** have thick, dry, scaly skin. **Reptiles** are known for **molting**, or shedding their skin. **Reptiles** shed their skin several times during their lives. Snakes, for example, shed their skin in one big piece. They do this when they grow too big for their current skin.

The biggest **reptile** is the saltwater crocodile, which lives mainly in Australia and a few parts of India and Asia. Male saltwater crocodiles can grow to be 20 feet long or more! Attacks on humans are rare. If they do attack a human, it's usually not a happy ending.

Crocodiles have the most powerful bite in the entire animal **kingdom**. Their bites are ten times stronger than that of a great white shark. Despite their power when they bite and snap their jaws shut, it is fairly easy to hold a crocodile's mouth closed. They open their mouths using a weak set of muscles. In fact, a third grader may be able to hold a crocodile's jaw shut . . . would you like to try?



This snakeskin has been left behind by a large snake after it molted.

Challenge

Which photo best supports the text in the chapter? Explain.

Pages 96–97

- Ask students to look over the photos and read the captions on **page 97** to answer the question: “How do the photos on **page 96** support the text on **page 97**?”
- When students finish reading, restate the question above and ask students to answer.
 - » The top photo shows a snake molting and the bottom photo shows the skin in one big piece.
- Tell students to read **page 96** to themselves to answer the question: “What does the author mean when the text says, ‘it is usually not a happy ending?’ ”
- When students finish reading, restate the question above and ask students to answer.
 - » When crocodiles attack humans, the humans usually die.



DISCUSSING THE READING (10 MIN.)

TEKS 3.10.C

- How do you know this selection is nonfiction?
 - » The text is about real animals and presents facts that are true.
- What text features did the author include to help the reader?
 - » The author uses bold print words to signal key words; photos and captions are also used to support the text with a picture.
- How did the author organize the ideas in the chapter?
 - » Starts with characteristics of reptiles, discusses types of snakes and their characteristics, followed by crocodiles and their characteristics

WRITING: REPTILE WEB (20 MIN.)

- Using Activity Page 9.1, students will gather information as reinforcement and also as notes for the formal paragraph assignment they will write later in the unit.
- In the central oval, students will see the word *reptiles*. In each surrounding oval, students will write words or phrases that describe the characteristics of animals in that group. They should also include in one of the surrounding ovals examples of animals in this group based on what they heard in the Read-Aloud today.
- Partner: With a partner using Activity Page 9.1, students will gather information as reinforcement and also as notes for the formal paragraph assignment they will write later in the unit.
- In the central oval, students will see the word *reptiles*. In each surrounding oval, students will write words or phrases that describe the characteristics of animals in that group. They should also include in one of the surrounding ovals examples of animals in this group based on what they heard in the Read-Aloud and reading today.



TEKS 3.10.C Explain the author's use of print and graphic features to achieve specific purposes.

Activity Page 9.1



**ENGLISH
LANGUAGE
LEARNERS**

Writing
Writing

Beginning

In a small group, guide students to include key information on Activity Page 3.2: Reptiles section. Assist students in selecting the first fact about reptiles.

Intermediate

Students work in partners to complete Activity Page 3.2. Encourage students to include three facts about reptiles on the Foldable. Actively encourage students to refer back to the text to find the facts about reptiles.

Advanced/ Advanced High

Have students work independently to complete Animal Foldable. Include three facts. When finished, students will read aloud their facts to a partner.

ELPS 5.G

Activity Page 3.2



Activity Page 8.4



Activity Page 9.2



ENGLISH
LANGUAGE
LEARNERS



Language
Foundational Skills

Beginning

Work in small groups on Activity Page 9.2, answering one question aloud.

Intermediate

Have students work with a partner to complete Activity Page 9.2. Model adding *-ed* and *-ing* to words to change the meaning such as, "I translated Spanish to English. I am translating a language."

Advanced/

Advanced High

With a partner, have students choose two words from Activity Page 9.2. Discuss the meaning of these words.

ELPS 1.B

Lesson 9: Reptiles
Writing



Primary Focus: Students will record key information about reptiles.

TEKS 3.7.E

ANIMAL FOLDABLE (15 MIN.)

- Have students complete the section on "Reptile" on Activity Page 3.2.

Lesson 9: Reptiles
Language



Primary Focus: Students will determine the meaning of words formed when *-ed* or

-ing are added to a known root word. **TEKS 3.3.C**

SPELLING: BLANK BUSTERS (20 MIN.)

Blank Busters

- Have students take out Activity Page 8.4 from Lesson 8.
- (Partner) Have students find a partner and review their answers.
- Whole Group: As a whole group, review the answers on Activity Page 8.4.
- Have students turn to Activity Page 9.2 and complete independently.

TEKS 3.7.E Interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating;
TEKS 3.3.C Identify the meaning of and use words with affixes such as im- (into), non- dis-, in- (not, non), pre-, -ness, -y, and -ful.

Lesson 9: Reptiles

Take-Home Material

- Have students take home Activity Page 9.3 to read to an adult.

Activity Page 9.3



10

Wings and Feathers, Part 1

PRIMARY FOCUS OF LESSON

Language

Students will use conventional spelling patterns when adding suffixes *-ed* or *-ing* to root words. **TEKS 3.2.B.vii**

Speaking and Listening

Students will determine the definition of key vocabulary words about birds. **TEKS 3.3.A; TEKS 3.7.F**

Writing

Students will write a short reflection about the most important thing about being a bird. **TEKS 3.12.B**

FORMATIVE ASSESSMENT

- Activity Page 10.1** **Spelling Assessment** Use conventional spelling patterns when adding suffixes. **TEKS 3.2.B.vii**
- Activity Page 10.3** **Bird Vocabulary** Define key vocabulary words. **TEKS 3.3.A**
- Activity Page 10.4** **Bird Web** Identify key characteristics of birds. **TEKS 3.7.E**
- Activity Page 10.5** **Field Journal** Explain two new things you learned about birds. **TEKS 3.12.B**

TEKS 3.2.B.vii Demonstrate and apply spelling knowledge by: spelling words using knowledge of suffixes, including how they can change base words such as dropping e, changing y to i, and doubling final consonants; **TEKS 3.3.A** Use print or digital resources to determine meaning, syllabication, and pronunciation; **TEKS 3.7.F** Use newly acquired vocabulary as appropriate; **TEKS 3.12.B** Compose informational texts, including brief compositions that convey information about a topic, using a clear central idea and genre characteristics and craft; **TEKS 3.7.E** Interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.

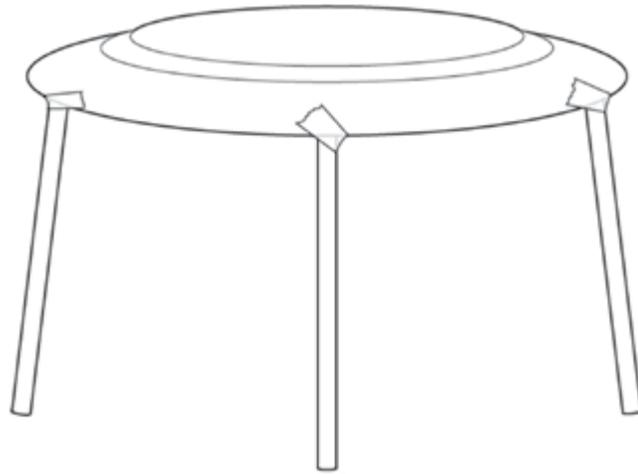
LESSON AT A GLANCE

	Grouping	Time	Materials
Language (20 min.)			
Spelling Assessment	Whole Group	20 min.	<input type="checkbox"/> Activity Page 10.1
Speaking and Listening (80 min.)			
Introducing the Read-Aloud	Partner	15 min.	<input type="checkbox"/> Activity Pages 10.2, 10.3 <input type="checkbox"/> Context Clues Anchor chart (Lesson 8)
Presenting the Read-Aloud	Whole Group	50 min.	<input type="checkbox"/> Digital Flip Book: U2.L10.1–13 <input type="checkbox"/> Three straws <input type="checkbox"/> Tape
Discussing the Read-Aloud	Whole Group	10 min.	<input type="checkbox"/> Paper plate <input type="checkbox"/> Pennies <input type="checkbox"/> Bald Eagle poster
Word Work: <i>Metabolism</i>	Whole Group	5 min.	<input type="checkbox"/> Rectangle paper for each student <input type="checkbox"/> Measuring tape <input type="checkbox"/> Bird Feet Cards
Writing (20 min.)			
Bird Web	Independent	10 min.	<input type="checkbox"/> Activity Pages 10.4, 10.5
Field Journal	Independent	10 min.	
Take-Home Material			
Birds			<input type="checkbox"/> Activity Page 10.6

ADVANCE PREPARATION

Speaking and Listening

- Identify the following Digital images on the program's digital components site to project during the Read-Aloud: U2.L10.1–13
- Build a table using three straws, a paper plate, and tape.



- Bald Eagle poster with wingspan (similar to photo below).



- Prepare the bird feet cards.

Bird A



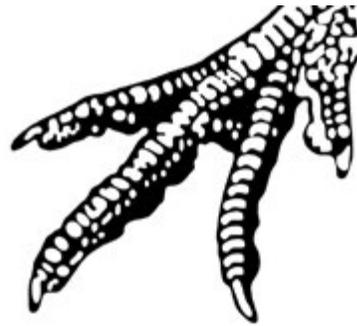
Bird B



Bird C



Bird D



Bird E



Universal Access

- Provide additional books, articles, and photographs of birds and bird parts.
- Display vocabulary words and images from the unit to reinforce learning.
- Create partners strategically.

Start Lesson

Lesson 10: Wings and Feathers, Part 1

Language



Primary Focus: Students will use conventional spelling patterns when adding suffixes *-ed* or *-ing* to root words. **TEKS 3.2.B.vii**

SPELLING ASSESSMENT (20 MIN.)

- Have students turn to Activity Page 10.1 for the spelling assessment.
- Call out each word one at a time in the following manner; say the word, say a sentence with the word in it, and then say the word again.
- Tell students that at the end, you will go back through the list once more.

1. dine	7. file
2. smile	8. vote
3. prepare	9. raise
4. translate	10. quote
5. rake	Challenge Word: <i>does</i>
6. tire	Challenge Word: <i>done</i>

- After you have called out all of the words including the Challenge Words, go back through the list slowly reading each word just once more.
- Ask students to write the following sentence as you dictate it:
 - “I like to dine at home with my family.”
- Then, ask students to add *-ed* and *-ing* to each of the root words. Tell students not to add endings to the Challenge Words.

TEKS 3.2.B.vii Demonstrate and apply spelling knowledge by: spelling words using knowledge of suffixes, including how they can change base words such as dropping e, changing y to i, and doubling final consonants.

Activity Page 10.1



Note: At a later time, you may find it helpful to use the template provided at the end of this lesson to analyze students’ mistakes. This will help you to understand any patterns that are beginning to develop or that are persistent among individual students.

Lesson 10: Wings and Feathers, Part 1

Speaking and Listening



Primary Focus: Students will determine the definition of key vocabulary words about birds. **TEKS 3.3.A; TEKS 3.7.F**

VOCABULARY FOR READ-ALOUD

- The following are core vocabulary words used in this lesson. Preview the words with the students before the lesson. Students are not expected to be able to use these words immediately, but with repeated exposure throughout the lessons they will acquire a good understanding of most of the words. Students may also keep a “unit dictionary” notebook along with definitions, sentences, and/or other writing exercises using these vocabulary words.

cavity, a hollow space within a body, a bone, or an organism

glide, to move smoothly and continuously

insulation, material that separates an area in order to keep in a form of energy

nest, a structure formed and used by animals for laying and hatching eggs

Vocabulary Chart for “Birds: Wings and Feathers”		
Type	Tier 3 Domain-Specific Words	Tier 2 General Academic Words
Vocabulary	cavities insulation nest	glide
Multiple-Meaning Core Vocabulary Words	cavities nest	
Sayings and Phrases		

TEKS 3.3.A Use print or digital resources to determine meaning, syllabication, and pronunciation; **TEKS 3.7.F** Use newly acquired vocabulary as appropriate.



INTRODUCING THE READ-ALoud (15 MIN.)

- **Bird Watching:** Have the students turn to Activity Page 10.2. Explain to students that, with a partner, they will observe birds and record their observations on Activity Page 10.2. Students will record specific descriptions of birds such as color and their movements. Remind students to find a quiet spot to observe and try not to move so birds do not get startled.

Note: Students may complete Activity Page 10.2 indoors or outdoors. If no birds are present outside, pull up a video of birds.

- After students have finished their observations, have students share key observations recorded on Activity Page 10.2.

PRESENTING THE READ-ALoud (50 MIN.)

- Tell students that in today's Read-Aloud, they will learn more about birds. Explain that throughout the Read-Aloud, the class will pause to discuss key vocabulary and unique bird characteristics.
- **Vocabulary Clues:** As a class, review the Context Clues Anchor chart from Lesson 8 to define unknown vocabulary words.

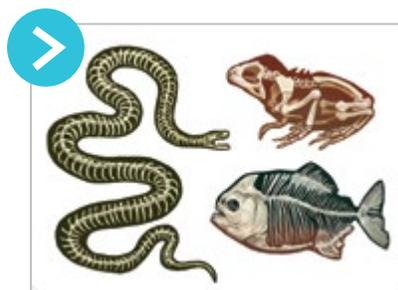


Show image U2.L10.1 African habitat with Ebenezer Egret

Hello, folks. It's me, Rattenborough once again. If you recall, you learned all about reptiles last time. How exciting that was! Can you remember

which group of animals you are going to hear about today?

Birds! I can't wait to tell you all about my friend Ebenezer. I met him on the continent of Africa. Before I tell you about him, I thought we would begin today's lesson by quickly reviewing how Paolo, Tabitha, and Anna are related to each other. Remember, just because they don't look the same, they do have quite a bit in common, beginning with the fact that they are all members of the animal kingdom.

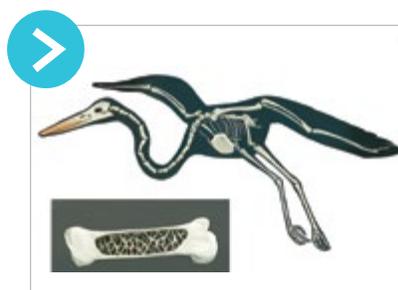


Show image U2.L10.2 Three animal skeletons

I brought along special diagrams of their skeletons to help you. Can you tell which skeleton belongs to each animal? What common characteristic

is visible in all three? Yes, all three of them have backbones, so as you probably recall, scientists classify them as . . . yes—vertebrates!

We're not going to spend much time talking about their internal body temperatures today. By now you should know that none of them have constant body temperatures. Paolo, Tabitha, and Anna are all cold-blooded and their temperature changes depending on their surroundings. That makes two characteristics that all three of them hold in common: the fact that they are all vertebrates, and the fact that they are all cold-blooded animals. So, now let's see where Ebenezer Egret fits in. We know that he belongs to the animal group classified as birds. Let's confirm it: Are birds vertebrates?



Show image U2.L10.3 Anatomy of a bird

Indeed they are. Ebenezer has a strong backbone that reaches all the way up his long neck and supports his head. His bony skeleton is very

important. His bones are extremely light with lots of air cavities, or hollow places, inside them to help him fly. He uses his muscular legs to push off the ground, and then his wings take over. The weight and arrangement of his bones help him soar through the air.

- **Vocab Pause:** Whole group. Write the following sentence on the board:
 - “Their bones are extremely light with lots of air cavities, or hollow places, inside them to help them fly.”

- Ask students to define *cavities*. Explain that the definition of *cavities* is in the sentence. Circle the commas in the sentence and explain that after the vocabulary word *cavities* the definition is given.
- **Bird Bone Experiment:** Review with students that birds have strong, hollow bones very similar to straws. Show the class the table created out of straws and a paper plate.
 - Ask students “How many pennies do you think this table will hold?” Have students make guesses.
 - Add pennies to the plate until the structure falls. Be sure to place pennies all around the plate.
 - Reflection: “Did this experiment change the way you think about bird bones?”



Show image U2.L10.4
Egrets and Ebenezer in flight

Birds are the lucky ones, aren't they? How many of you have ever wished that you could fly? I do like very much being a rat, but sometimes I think it would be great fun to fly. Ebenezer is very graceful, isn't he? So far you have learned in detail just about cold-blooded animals—reptiles, amphibians, and fish. Do you think Ebenezer and all birds are cold-blooded, too? Scientists classify birds as warm-blooded, because their internal body temperature remains constant no matter where they fly.



Show image U2.L10.5
Egrets

Birds have several characteristics that enable them to fly, but being warm-blooded is essential to flight. They have a very high metabolism as only warm-blooded animals do. Metabolism is the process that produces energy in most animals' bodies. When we speak about the high metabolism of birds, we are speaking about the fact that they

have a steady flow of energy that helps them maintain the high levels of activity required by flight. The higher the activity level of an animal, the higher its metabolism is likely to be. What this means when it comes to eating is that they need lots of food to maintain that energy.

Have you ever heard the saying “eats like a bird” for someone who eats very small amounts of food at one time? Ebenezer told me that an important thing to remember about this expression is that it does not mean that birds do not eat very much. In fact, Ebenezer and birds like him need to eat two times their body weight in food every day, because they have such a high metabolism and burn lots more energy than most animals. Of course, there are lots of small meals a day for birds, quite unlike Anna Anaconda who sometimes eats only one big meal in a period of many days. So, someone who “eats like a bird” is usually someone who “picks” at their food and only eats small bits at a time.

-
- **Vocabulary Pause:** Write the following sentence on the board:
 - “They have a very high metabolism as only warm-blooded animals do. Metabolism is the process that produces energy in most animals’ bodies.”
 - Ask students to define *metabolism*. Explain that this sentence is an example of looking for the definition after the vocabulary word.
 - **Bald Eagle Wingspan:** Show students the poster of the bald eagle’s wingspan. Explain that the wingspan of a bald eagle is seven to nine feet.
 - Pass out white rectangle paper to each student. In pairs, have one student lay down with their back on the paper as the other student traces their wingspan. With a tape measure, each student will measure their own wingspan.



Show image U2.L10.6 Ebenezer and Real Egret

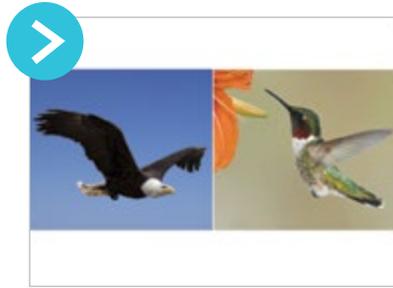
So, like all birds, Ebenezer is warm-blooded. And he’s a vertebrate with lightweight bones to help him fly. Look at this image, and describe some

Support

On the board, write *warm-blooded* and *cold-blooded*. Remind students that cold-blooded animals’ body temperature changes with the surroundings and warm-blooded animals’ body temperature remains the same.

other physical characteristics that help scientists classify Ebenezer as a bird. Good eyes, boys and girls.

Let's begin with his wings. Ebenezer has wings, and wings are essential to flight. The shape of a bird's wings determines how far and high a bird can fly, in addition to its lightweight bones.

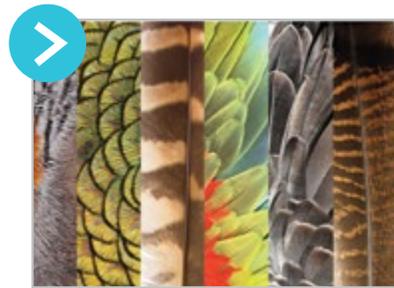


Show image U2.L10.7

American Bald Eagle and Hummingbird

Look at this picture of an American bald eagle. His long, broad wings are built so that he can glide, or move smoothly and continuously. He can

soar great distances, traveling up to 65 miles per hour. Compare the eagle's wings to the tiny, tapered wings of the hummingbird, one of the smallest birds on Earth. His wings beat rapidly, twenty or more beats per second, as he hovers, or floats and flutters, in midair.



Show image U2.L10.8

Bird Feathers

What else helps Ebenezer and all birds fly? Feathers are a great help, serving as lightweight coverings for their wings. They mesh together as

their wings flap downward, parting again to let air through as their wings sweep upward. Feathers also act as **insulation**. Insulation is an extra layer that protects birds' skin from the sun and traps in heat, providing energy and warmth in the winter months. The point of the feather where it is attached to a bird's body is called the quill. All birds have feathers. No other animals do, so if you spot a feathered friend, you may assume that it's a bird. Because their precious feathers take quite a beating, birds take good care of them, and often preen them with their beaks to keep them clean, waterproof, and in the right position.



Show image U2.L10.9

Ebenezer's Beak, a Finch's Beak, and Other Bird Beaks

Take a look at Ebenezer's beak. Isn't it a beauty? Not all birds have such long beaks. Why do you think his is

so long? Well, I'll tell you. He told me it's a terrific hunting weapon. He uses the end of his beak to grab small prey such as snails and crayfish in the surface waters of the marshland and to spear larger prey such as frogs and snakes on marshy wetlands.

Appearing in many different shapes and sizes, beaks are often used to identify birds. Their main function is for feeding, so a bird's beak can provide scientists with clues to a bird's eating habits. Take a look at this finch's beak. Depending upon where you live, you may have seen a finch at your bird feeder. They use their beaks to crack open seeds. Next time you see a bird, look at its beak and see if you can guess whether it eats fish, seeds, insects, mice, or nectar.

• **Vocabulary Pause:** Write the following sentences on the board:

- "Feathers also act as insulation. Insulation is an extra layer that protects birds' skin from the sun and traps in heat, providing energy and warmth in the winter months."
- Explain to students that you will give them three possible definitions for *insulation*. When they hear the correct definition, students will raise their hand.
- Definition of *insulation*:
 - move smoothly
 - mesh together
 - an extra layer



Check for Understanding

If students failed to identify the correct definition for *insulation*, review the sentences on the board, highlighting the sentence that follows the vocabulary word as the definition.



Show image U2.L10.10 Bird Feet

Birds' feet are another clue to different bird habitats and lifestyles. Hawks have long talons, or claws, to catch their prey; waders have long

legs; woodpeckers have feet adapted to climbing trees; perching birds have single hind, or rear, toes for grasping branches; and ducks and geese have webbed feet for swimming.

- **Birds' Feet:** In small groups, pass out a set of the bird feet cards. Have students predict the characteristics of the birds based on their feet. Have groups share their predictions and explanations with the class.



Show image U2.L10.11 Bird Nests

Birds are the only group of animals that give birth by only one means—there are fascinating pattern-breakers in all of the other groups. All birds

lay eggs. Their eggs are yolk-filled and have hard, calcified shells. They need to be incubated, or kept warm, so the parents sit on them until they hatch. This can be dangerous because sitting birds are prime targets for predators. Most birds prepare a **nest**, or shelter for their young, using whatever materials are available to them in nature. Some make nests from twigs and straw; others build nests of mud; woodpeckers create cavities in trees, whereas kingfishers bore into riverbanks. These nests provide safe havens, or safe places,

protecting both eggs and baby chicks from harsh weather and animal predators.

Some birds, like chickens, are able to see, walk, and feed themselves almost immediately after hatching. However, many birds are born in a very immature stage and require a lengthy period of parental care.



Show image U2.L10.12 **Ostrich, Emu, and Penguin**

We spent lots of time today talking about what helps birds fly—strong muscles, light bones, powerful wings, and airy feathers. But did you know

that in spite of having all those things in common, some birds are unable to fly? Flightless birds include the largest bird on Earth, the ostrich. With a seven-foot wingspan, it seems odd that ostriches can't fly, but they hold records for being both the fastest birds on land and the fastest two-legged animals on Earth, able to run up to 40 miles per hour! Australian emus [ee-myoos], also large and flightless, look a lot like ostriches and often travel long distances to find food. Penguins are perhaps the most endearing, or affection-inspiring, of all flightless birds, marching upright like people as they move around in their habitats. These aquatic birds of the Southern Hemisphere waddle along on their short legs and webbed feet down to the sea. Their wings serve as flippers to carry them swiftly through arctic waters, traveling up to 15 miles per hour.



Show image U2.L10.13 **Birds in Different Habitats**

Birds live all over the world—in cool, wet rainforests; along ocean shores; in dark, dense evergreens; in hot, dry deserts; and on the banks of lakes,

rivers, and streams. Some travel long distances, migrating to warmer homes in winter, whereas others are homebodies, never straying very

Challenge

Have students identify the five most important vocabulary words in the Read-Aloud with definitions.

far from where they were born. Some can swim and others can fly. Some enchant us with their songs, whereas others shout, “Caw-caw!” Birds come in all different shapes and sizes, but all birds are warm-blooded, egg-laying vertebrates with feathers and wings.

Birds are very different from the animals we will study next time. So far, you’ve learned about fish, amphibians, reptiles, and birds. What do you suppose is next? I’ll give you a hint. They’re hairy and warm-blooded, and you may just find that you know more about them than you think you know! Thank you for being such good listeners. I will see you very soon!

DISCUSSING THE READ-ALoud (10 MIN.)

1. **Literal.** What body part do birds have that enables them to fly?
 - » wings
 2. Bird bones have lots of cavities in them, which help make them lighter and able to fly. What are cavities?
 - » hollow places in the bones
 3. **Literal.** What is the job of feathers on birds?
 - » They provide insulation and waterproofing to protect skin and trap heat; they help them fly by being lightweight and by meshing together and parting, which pushes against air and then lets it through.
 4. **Evaluative.** Describe the difference between the way a hummingbird flies and an eagle flies.
 - » A hummingbird beats its wings very, very fast; an eagle glides and soars.
 5. What would you say is the cause of these two different types of flight?
 - » large, broad wings on the eagle compared to tiny, tapered wings on a hummingbird
- Have students complete Activity Page 10.3 independently.

Activity Page 10.3



**WORD WORK: METABOLISM (5 MIN.)****TEKS 3.7.F****ENGLISH
LANGUAGE
LEARNERS**Speaking and Listening
Listening Actively**Beginning**Ask students simple yes or no questions: “Are *cavities* small bumps on the bones of birds to help them to fly?”**Intermediate**

On a separate sheet of paper that the students can keep, have them draw and label words and concepts discussed during the Read-Aloud discussion.

Advanced/**Advanced High**

Encourage students to answer questions using complete sentences and content vocabulary.

ELPS 1.C; ELPS 2.I

1. In the Read-Aloud you heard that warm-blooded animals “have a very high *metabolism*.”
2. Say the word *metabolism* with me.
3. Metabolism is the process in living animals whereby energy is made from cells in the body as they are produced and as they break down. The higher the activity level of an animal, the higher its metabolism is likely to be.
4. “As our dog grew older, his metabolism slowed down, so he didn’t need to eat as much food as when he was a puppy.”
5. Name an animal and then describe whether you think it would have a higher metabolism or a lower metabolism. Be sure to use the word *metabolism* when you tell about it. Ask two or three students to answer. If necessary, guide and/or rephrase the students’ responses to make complete sentences: “I think a _____ would have a _____ metabolism because _____.”
6. What’s the word we’ve been talking about? What part of speech is the word *metabolism*?
7. Use a Complete the Sentences activity for follow-up. Directions: “I am going to begin some sentences that describe higher metabolism or lower metabolism. After I’ve spoken the first part, I want you to finish the sentence by saying, ‘has a higher metabolism’ or ‘has a lower metabolism.’”
 - A hibernating bear _____
 - » has a lower metabolism.
 - If an animal’s body is slowing down, it _____
 - » has a lower metabolism.
 - A hummingbird beating its wings rapidly _____
 - » has a higher metabolism.
 - A cat that is asleep on the windowsill _____
 - » has a lower metabolism.
 - A marathon runner in a race _____
 - » has a higher metabolism.
 - Compared to a warm-blooded animal, a cold-blooded animal _____
 - » has a lower metabolism.

**TEKS 3.7.F** Respond using newly acquired vocabulary as appropriate.



Support

Pull students aside to assist with the completion of Activity Page 10.4.

ENGLISH LANGUAGE LEARNERS



Writing Writing

Beginning

Provide sentence frames that allow for one word answers, e.g., "Today I learned that birds have _____."

Intermediate

Have students make a list of details they learned about birds using information from their graphic organizer. Have them write one or two sentences about what they learned.

Advanced/

Advanced High

Encourage students to write in complete sentences and include multiple details.

ELPS 5.B

Activity Page 10.6



Lesson 10: Wings and Feathers

Writing



Primary Focus: Students will write a short reflection about the most important thing about being a bird. **TEKS 3.12.B**

BIRD WEB (10 MIN.)

- Have students take out Activity Page 10.4. Direct them to gather information about birds on the web. Teacher note: Students will use these web notes for the formal paragraph assignment they will write later in the unit.
- In the central oval, students will see the word *birds*. In each surrounding oval, students will write words or phrases that describe the characteristics of animals in that group. They should also include in one of the surrounding ovals examples of animals in this group based on what they heard in the Read-Aloud today.
- Have students complete Activity Page 10.4 independently.

FIELD JOURNAL (10 MIN.)

- Have students take out Activity Page 10.5 and complete the writing prompt independently.

End Lesson

Lesson 10: Wings and Feathers, Part 1

Take-Home Material

- Have students complete Activity Page 10.6.

TEKS 3.12.B Compose informational texts, including brief compositions that convey information about a topic, using a clear central idea and genre characteristics and craft.

Student Name

1. dine
2. dined
3. dining
4. smile
5. smiled
6. smiling
7. prepare
8. prepared
9. preparing
10. translate
11. translated
12. translating
13. rake
14. raked
15. raking
16. tire
17. tired
18. tiring
19. file
20. filed
21. filing
22. vote
23. voted
24. voting
25. raise
26. raised
27. raising
28. quote
29. quoted
30. quoting

Challenge Word: give

Challenge Word: live

SPELLING ANALYSIS DIRECTIONS

Unit 2, Lesson 10

- Students are likely to make the error of not dropping the final 'e' prior to adding one of the endings.
- While the above student-error scenario may occur, you should still be aware that misspellings may be due to many other factors. You may find it helpful to record the actual spelling errors that the student makes in the analysis chart. For example: Is the student consistently making errors on specific vowels? Which ones?
 - Is the student consistently making errors on double consonants?
 - Is the student consistently making errors at the end of the words?
 - Is the student consistently making errors on particular beginning consonants?
 - Did the student write words for each feature correctly?
 - Also, examine the dictated sentence for errors in capitalization and punctuation.

11

Wings and Feathers, Part 2

PRIMARY FOCUS OF LESSON

Language

- Students will use conventional spelling patterns when adding the suffix –es to root words. **TEKS 3.2.B.vii**

Reading

- Students will identify information about birds and explain how specific text features support their learning. **TEKS 3.9.D.ii**

Writing

- Students will write a short reflection on being a bird. **TEKS 3.7.B**

Language

- Students will identify and use concrete and abstract nouns. **TEKS 3.7.F**

FORMATIVE ASSESSMENT

Activity Page 11.2 **Field Journal** Write a short reflection on being a bird. **TEKS 3.7.B**

Activity Page 11.3 **Abstract Nouns** Identify and use concrete and abstract nouns. **TEKS 3.7.F**

- ✦ **TEKS 3.2.B.vii** Demonstrate and apply spelling knowledge by: spelling words using knowledge of suffixes, including how they can change base words such as dropping e, changing y to i, and doubling final consonants; **TEKS 3.9.D.ii** Recognize characteristics and structures of informational text, including: features such as sections, tables, graphs, timelines, bullets, numbers, and bold and italicized font to support understanding; **TEKS 3.7.B** Write a response to a literary or informational text that demonstrates an understanding of a text; **TEKS 3.7.F** Use newly acquired vocabulary as appropriate.

LESSON AT A GLANCE

	Grouping	Time	Materials
Language (20 min.)			
Introduce Spelling Words	Whole Group	20 min.	<input type="checkbox"/> Root Words chart (Digital Projections)
Reading (40 min.)			
Introducing the Reading	Partner	10 min.	<input type="checkbox"/> Activity Page 10.4, 11.1 <input type="checkbox"/> <i>Rattenborough's Guide to Animals</i>
Partner Reading	Partner	20 min.	
Discussing the Reading	Whole Group	10 min.	
Writing (40 min.)			
Animal Classification Foldable	Independent	20 min.	<input type="checkbox"/> Activity Page 3.2, 11.2
Field Journal	Independent	20 min.	
Language (20 min.)			
Abstract Nouns	Whole Group	20 min.	<input type="checkbox"/> Activity Page 11.3 <input type="checkbox"/> Parts of Speech Chart (Digital Projections)
Take-Home Material			
Family Letter			<input type="checkbox"/> Activity Page 11.4

ADVANCE PREPARATION

Language

- On chart paper, create the following or prepare Digital Projection DP.U2.L11.1.

Root Word	-es

Reading

- Predetermine partners for reading lesson.

Language

- On chart paper, create the following or prepare Digital Projection DP.U2.L11.2.

Parts of Speech		
Nouns are words that name people, places, or things.		
Common nouns are general and are not capitalized.	Proper nouns are specific and are capitalized.	Abstract nouns are types of nouns that a person cannot physically see, hear, smell, taste, or touch. They name emotions/feelings, states/attributes, ideas/concepts, and movements/events.
Verbs are words that show action.		
Linking verbs are words that connect the subject to a word or words (adjectives) in the predicate that describe it. Linking verbs do not show action.		
Adjectives are words that describe nouns.		

- Write the spelling words (only the root word) on index cards. Fold over each card so that only the first letter is visible.

Universal Access

- Create and display chart with rules for syllabication:
 - Two consonants between two vowels, divide the syllables between the consonants. Ex: pup|py
 - More than two consonants together in a word, divide the syllables keeping the blends together. Ex: mon|ster
 - One consonant between two vowels in a word, divide the syllables after the first vowel. Ex: plu|ral
 - If that rule doesn't work, divide syllables after the consonant that comes between the vowels. Ex: doz|en
 - Two vowels together that do not make a long vowel sound, divide the syllables between the vowels. Ex: po|em
- Provide additional books, articles, and photos of birds, flocks of birds, and feathers.
- Provide different types of feathers for students to look at and touch.
- Create partners strategically.

Start Lesson

Lesson 11: Wings and Feathers, Part 2

Language



Primary Focus: Students will use conventional spelling patterns when adding the suffix *-es* to root words. **TEKS 3.2.B.vii**

INTRODUCE SPELLING WORDS (20 MIN.)

- Refer to the previously created chart or display Digital Projection DP.U2.L11.1.

➤ Projection DP.U2.L11.1

TEKS 3.2.B.vii Demonstrate and apply spelling knowledge by: spelling words using knowledge of suffixes, including how they can change base words such as dropping *e*, changing *y* to *i*, and doubling final consonants.

Root Word	-es

Step 1: Introducing the Root Words

- Tell students they will be assessed on these words. On the assessment, they will be responsible for spelling these root words, in addition to other words that follow the pattern of the words studied. This week, students will be responsible for spelling the root words plus the forms of these words when the suffix -es is added.
- Explain that some of the spelling words this week are verbs and some are nouns when the -es is added. Review that a noun is a part of speech that names a person, place or thing. A verb shows action or being.
- As you introduce the spelling words, write them in the table, pronouncing each word as you write it:

Root Word	-es
puppy	
penny	
study	
carry	
butterfly	
lady	
bunny	
dry	
hurry	
marry	

- Write *puppy* in the table. Underline the vowel letters in the word like this:
 - puppy
- “How many consonant letters are between the two vowel letters?” (two)
- Remind students that when there are two consonant letters between two vowel letters, the word is divided between the two consonants.
- Draw a line between the letters ‘p’ and ‘p’ like this:
 - pup | py
- Cover the second syllable, ‘py’, and tell students that if the word is divided in this way, you would read this first syllable as /pup/, since syllables ending with consonants are generally pronounced with the short vowel sound.
- Then, cover the first syllable, ‘pup’, and ask students to read the last syllable, /pee/, reminding them, if necessary, that the letter ‘y’ can stand for the /ee/ sound, especially at the end of words. Prompt students in blending and saying the word, /pup/ /pee/.
- Now, ask students to read each syllable of the word as segments. (Students should say /pup pee/.)
- Now, tell students to “read it fast.” This means students should read the two syllables quickly enough to blend and say the word.
- Tell students that they can now easily see the parts of the word and it is easier to decode and spell.
- Repeat the procedure with other words that are similar: *penny*, *carry*, *butter*, *bunny*, *hurry*, and *marry*.
 - pen | ny
 - car | ry
 - but | ter
 - bun | ny
 - hur | ry
 - mar | ry
- After writing *study* in the table, ask students to tell you the vowel sounds in the word. Underline the vowel letters in the word like this:
 - study
- “How many consonant letters are between the two vowel letters?” (one)
- Remind students that when there is one consonant letter between two vowel letters, the word can be divided before or after that single consonant.

- Tell students that you will divide the word into syllables with the division coming after the vowel. Draw a line between the letters 'u' and 'd' like this:
 - stu | dy
- Cover the second syllable, 'dy', and tell students that if the word is divided in this way, you would read this first syllable as /stue/, even though syllables ending with vowels are generally pronounced with the long vowel sound.
- Then, cover the first syllable, 'stu', and ask students to read the last syllable, /dee/.
- Prompt students in blending and saying the word, /stue dee/, and point out this does not sound like an English word that you recognize.
- Tell students that you will try dividing the word into syllables with the division coming after the consonant. Draw a line between the letters 'd' and 'y' like this:
 - stud | y
- Then, cover the second syllable, 'y', and ask students to read the first part of the word, /stud/.
- Cover the first syllable, 'stud', and ask students to read the second part of the word, /ee/.
- Now, ask students to read each syllable of the word as segments. (Students should say /stud ee/.)
- Now, tell students to "read it fast." This means that students should read the two syllables quickly enough to blend and say the word.

Step 2: Adding the Suffix –es to the Root Words

- Tell students that you will not complete the remainder of the table by adding the suffix –es to each root word.
- Point out the Suffix poster and read it with students.
 - A *suffix* is a syllable placed after a root word. Suffixes change the meaning of the root word.
- Ask what the suffix –es signals for verbs. (ongoing action that is still happening)
- Ask what the suffix –es signals for nouns. (plural forms of the noun, more than one)
- Tell students that before adding the suffix –es to a word ending in 'y', they must change the 'y' to 'i' for each root word. Working with each root word, change the 'y' to 'i' and then add the suffix –es.



Beginning

Have students clap or tap out the syllables of each word as you read them. Have students repeat the words and clap or tap out the syllables.

Intermediate

Provide the spelling words on a separate list. Have students circle and pronounce the consonants and underline and pronounce the vowels. Next, have them draw the line between syllables and say the word.

**Advanced/
Advanced High**

Provide an additional list of words for practice in syllabication.

ELPS 1.D; ELPS 5.C

Root Word	-es
puppy	puppies
penny	pennies
study	studies
carry	carries
butterfly	butterflies
lady	ladies
bunny	bunnies
dry	dries
hurry	hurries
marry	marries
Challenge Word: along	
Challenge Word: put	

- Introduce the Challenge Words, using correct pronunciation. Use the Challenge Words in sentences as examples for students: “We can collect leaves *along* the way.” “Mom asked me to *put* four plates on the table for dinner.”

Lesson 11: Wings and Feathers, Part 2

Reading



Primary Focus: Students will identify information about birds and explain how specific text features support their learning. **TEKS 3.9.D.ii**

VOCABULARY FOR “BIRDS”

- The following are vocabulary words used in this lesson. Preview the words with the students before the lesson and refer back to them at appropriate times. The words also appear in the glossary in the back of the student reader.

TEKS 3.9.D.ii Recognize characteristics and structures of informational text, including: features such as sections, tables, graphs, timelines, bullets, numbers, and bold and italicized font to support understanding.

Activity Pages
10.4 and 11.1



ENGLISH
LANGUAGE
LEARNERS



Reading
Reading/Viewing Closely

Beginning

Ask students to share what they've learned from the reading orally with prompting (e.g., "Name one thing that you learned from the reading.").

Intermediate

Have students create written lists of what they've learned from the reading on Activity Page 11.1.

Advanced/

Advanced High

Encourage students to write in complete sentences.

ELPS 4.F

Support

Review the text features students have learned thus far in the unit: table of contents, heading, bold print, photo and caption, chart, map, glossary, and diagram.

Support

Pull students aside to read the selection with teacher direction.

flock, a group of birds (**flocks**)

feather, one of many light, soft parts that covers a bird's skin (**feathers**)

plumage, birds' feathers

nectar, sweet liquid that comes from flowers

attract, to draw or pull toward a person, place, or thing

Vocabulary Charts for "Birds"		
Type	Tier 3 Domain-Specific Words	Tier 2 General Academic Words
Vocabulary	flock feather plumage nectar	attract
Multiple-Meaning Core Vocabulary	plumage nectar	
Sayings and Phrases		

INTRODUCING THE READING (10 MIN.)

- In pairs, have students review their notes from Activity Page 10.4. Students may add additional information learned from their partner.
- Have students turn to Activity Page 11.1. Explain to students that today they will be reading another selection about birds. Today they will focus on the text features in this selection. The focus of Activity Page 11.1 is for students to:
 - Identify the text feature in the selection.
 - Explain the information they learned from the text feature.
- Students will record their responses on Activity Page 11.1.

PARTNER READING (20 MIN.)

- Tell students to turn to the table of contents and locate today's chapter: "Birds." Have students turn to the first page of the chapter.
- Explain that students will be reading the chapter with a partner and completing Activity Page 11.1.



Yoo hoo—over here! It's Rattenborough! So far, you have learned about the following groups of animals within the animal **kingdom**: **mammals**, **reptiles**, fish, and **amphibians**. Do you remember all of their different **characteristics**? Do you remember that we said that fish were the largest group of **vertebrates** in the animal **kingdom**? Well, today we are going to talk about the second largest group of **vertebrates**—birds.

Birds belong to a group all their own. Birds, like all living things, are highly adaptive, meaning they can **survive** in many different **habitats**. You can find them in deserts and in the coldest places on Earth. Many love forests. There are only a few birds found way out to sea, many miles from land. But if you are out in a boat only a few miles from land, you may see many sea birds, such as seagulls.



*Different kinds of birds live in many different **habitats**.*

Like **mammals**, birds are **warm-blooded**. Many birds **migrate** when the seasons change. In late fall, they fly in groups called **flocks** from colder places to warmer places. Then, in the spring after winter is over, they **migrate** back to the place where they were in the fall. Birds are the only animal besides some insects and bats that are able to fly like an airplane.

All birds have wings, but not all birds are able to fly. Penguins are probably the best known birds that do not fly. Penguins make up for not flying by being great swimmers. Ostriches, the largest of all birds, can't fly either, but they sure can run very fast! They also lay the world's largest eggs.

Besides wings, all birds have two legs and a mouth without teeth, called a beak. A key **characteristic** of birds is that they all have **feathers**. **Feathers** help these **warm-blooded** animals fly and help them maintain a **constant** body **temperature**. Bird **feathers** come in all kinds of colors and sizes. A bird's **feathers** are also called **plumage**. Peacocks have the fanciest **plumage** of all. They like to show off by fanning their long, colorful **feathers**.



*All birds have wings and **feathers**, but not all birds can fly.*

Most birds are nesting animals. Many birds make their own nest, often high up in the trees or in thick bushes. They use bits and pieces of nature, such as twigs and parts of plants, to create their nest. Other birds build their nests in tree holes. Some bird nests are made of mud.

Most birds lay eggs in their nests. Some lay a bunch of eggs and some lay only one or two. The nest needs to be in a safe place to protect the little eggs from the weather and other animals that might eat the eggs. Birds sit on their eggs to keep them warm and safe until the eggs hatch. Once they hatch, the baby birds need to eat. Mother and father birds fly out from the nest and find food for their babies. They fly back to the nest and place the food in each baby's beak.

Many birds are **omnivores**. Some birds eat seeds and berries. Some eat insects. Some, like the great blue heron, eat fish. Hawks eat little **mammals**. Other birds, like tiny hummingbirds, eat **nectar** from flowers. All birds drink water.

Birds are also known for their songs. Their songs are used to **attract** mates and to claim a place as their own. Sometimes it seems as if they sing because they want to. Maybe they sing just to remind us how beautiful and interesting the animal **kingdom** is!



Different kinds of birds eat different types of food.

Challenge

Ask students to identify additional text features that could have been used to support the information in today's reading selection.

Activity Page 3.2



**ENGLISH
LANGUAGE
LEARNERS**



Writing
Writing

Beginning

Have students draw a picture and label it. Have students orally explain why they would choose to be that bird.

Intermediate

Provide a sentence frame:
"If I could be a bird,
I would want to be
a ____ because ____."

Advanced/ Advanced High

Encourage students to work independently, using descriptive words and complete sentences.

ELPS 5.G

Support

Students may use their Readers to identify information about birds.

Activity Page 11.2



DISCUSSING THE READING (10 MIN.)

1. **Literal.** What are some characteristics that all birds share?
 - » beaks, feathers, wings, warm-blooded, lay eggs
2. **Literal.** Name two flightless birds.
 - » penguins and ostriches
3. **Literal.** Why do some birds migrate and where do they go?
 - » Some birds migrate when the seasons change to colder weather. They go to warmer places. In spring, when it warms up, these birds migrate back to where they were in the fall of the previous year.
 - If time allows, review Activity Page 11.1 as a whole group.

Lesson 11: Wings and Feathers, Part 2

Writing



Primary Focus: Students will write a short reflection on being a bird.

TEKS 3.7.B

ANIMAL CLASSIFICATION FOLDABLE (20 MIN.)

- Have students take out Activity Page 3.2 and add information about birds independently.

FIELD JOURNAL (20 MIN.)

- Have students take out Activity Page 11.2: Field Journal and determine what type of bird they would like to be. Students will complete this Activity Page independently.

TEKS 3.7.B Write a response to a literary or informational text that demonstrates an understanding of a text.

Lesson 11: Wings and Feathers, Part 2

Language



Primary Focus: Students will identify and use concrete and abstract nouns.

 **TEKS 3.7.F**

ABSTRACT NOUNS (20 MIN.)

- Direct students' attention to the Parts of Speech digital Projection DP.U2.L11.2.

➤ Projection DP.U2.L11.2

Parts of Speech		
Nouns are words that name people, places, or things.		
Common nouns are general and are not capitalized.	Proper nouns are specific and are capitalized.	Abstract nouns are types of nouns that a person cannot physically see, hear, smell, taste, or touch. They name emotions/feelings, states/attributes, ideas/concepts, and movements/events.
Verbs are words that show action.		
Linking verbs are words that connect the subject to a word or words (adjectives) in the predicate that describe it. Linking verbs do not show action.		
Adjectives are words that describe nouns.		

- Ask students to give examples of abstract nouns.
 - » love, hate, anger, bravery, success, beauty, peace, sympathy, relaxation, honesty
- Ask students to describe the difference between concrete and abstract nouns.
 - » Concrete nouns are names of people, places or things that can be detected with a person's five senses, while abstract nouns are emotions/feelings or states/attributes that cannot be detected with a person's five senses.
- Tell students that there are two categories of abstract nouns: ideas/concepts and movements/events.
- Point out that examples of abstract nouns that describe ideas or concepts are *belief, truth* and *thought*.

 **TEKS 3.7.F** Use newly acquired vocabulary as appropriate.

Support

Assist students in brainstorming possible birds for Activity Page 11.2.

Challenge

Students may research and record information about birds not presented in the reading.



Language
Using Nouns and Noun
Phrases

Beginning

This is a teacher-guided activity, so allow students to check their work with a partner while completing Activity Page 11.3.

Allow students to orally create sentences with abstract nouns.

Intermediate

Provide 1:1 support and prompting when needed.

**Advanced/
Advanced High**

Encourage students to write complete sentences with correct capitalization and punctuation.

ELPS 1.B

- Read the following pairs of sentences and ask students to decide in which sentence the words *belief*, *truth* and *thought* are used as abstract nouns. Have them use their five senses to decide:
 - Rick believes he is a great singer. His belief in his singing ability gives him courage to sing in front of large audiences. (The second sentence uses *belief* as an abstract noun. The first sentence uses a form of the word *belief*, that being the verb *believes*.)
 - The truth about bubble gum is it's chewy and makes bubbles. A truthful person would tell you that. (The first sentence uses *truth* as an abstract noun. The second sentence uses a form of the word *truth*, that being the adjective *truthful*.)
 - Your thought about what to do today was a good one. I thought you would have a good idea. (The first sentence uses the word *thought* as an abstract noun. The second sentence uses *thought* as a verb.)
- Point out that examples of abstract nouns that describe events or movements are *education* and *trouble*.
- Read the following sentences and ask students to decide in which sentence the words *education* and *trouble* are used as abstract nouns. Have them use their five senses to decide:
 - Your education is an important part of your growing up. Teachers educate students. (The first sentence uses *education* as an abstract noun. The second sentence uses a form of the word *education*, the verb *educate*.)
 - Please don't trouble yourself by getting me a drink of water. My brother was in big trouble lying to my parents. (The second sentence uses *trouble* as an abstract noun. The first sentence uses *trouble* as a verb.)
- Point out to students that abstract nouns can be made from adjectives and verbs. Examples are:
 - I *believe* (verb) my older brother. My *belief* (abstract noun) in him has helped me grow.
 - A *truthful* (adjective) person is full of *truth* (abstract noun).
 - I *thought* (verb) you said I could go. My *thought* (abstract noun) about my friend was kind.
 - A part of our *education* (abstract noun) is when Mrs. Smith *educates* (verb) us.
 - She didn't mean to *trouble* (verb) me. I was in *trouble* (abstract noun) with my teacher.

- Have students turn to Activity Page 11.3 and complete it as a teacher-guided activity. Remind students to brainstorm whether the nouns can be detected using students' five senses.

End Lesson

Lesson 11: Wings and Feathers, Part 2

Take-Home Material

- Students will complete Activity Page 11.4.

Activity Page 11.3



Activity Page 11.4



12

Live-Bearing Milk Producers

PRIMARY FOCUS OF LESSON

Speaking and Listening

- Students will identify clue words used to signal a contrast or comparison of mammals. **TEKS 3.1.A; TEKS 3.9.D.iii; TEKS 3.10.B**

Reading

- Students will compare two texts on mammals using a graphic organizer. **TEKS 3.6.E; TEKS 3.6.H; TEKS 3.7.A**

Writing

- Students will record key information about mammals. **TEKS 3.7.E**

Language

- Students will use nouns, verbs, and adjectives, and explain their function in sentences. **TEKS 3.11.D.ii; TEKS 3.11.D.iii; TEKS 3.11.D.iv**

FORMATIVE ASSESSMENT

- Activity Page 12.1** **Text Structures** Identify clue words in sentences. **TEKS 3.9.D.iii**
- Activity Page 12.3** **Mammal Web** Identify key information about mammals. **TEKS 3.7.E**
- Activity Page 12.4** **Grammar Review** Label different parts of speech. **TEKS 3.11.D.ii; TEKS 3.11.D.iii; TEKS 3.11.D.iv**

- TEKS 3.1.A** Listen actively, ask relevant questions to clarify information, and make pertinent comments; **TEKS 3.9.D.iii** Recognize characteristics and structures of informational text, including: organizational patterns such as cause and effect and problem and solution; **TEKS 3.10.B** Explain how the use of text structure contributes to the author's purpose; **TEKS 3.6.E** Make connections to personal experiences, ideas in other texts, and society; **TEKS 3.6.H** Synthesize information to create new understanding; **TEKS 3.7.A** Describe personal connections to a variety of sources, including self-selected texts; **TEKS 3.7.E** Interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating; **TEKS 3.11.D** Edit drafts using standard English conventions, including: (ii) past, present, and future verb tense; (iii) singular, plural, common, and proper nouns; (iv) adjectives, including their comparative and superlative forms.

LESSON AT A GLANCE

	Grouping	Time	Materials
Speaking and Listening (55 min.)			
Introducing the Read-Aloud	Whole Group	10 min.	<input type="checkbox"/> Text Structures chart (Digital Projections) <input type="checkbox"/> Digital Flip Book: U2.L12.1–11 <input type="checkbox"/> Sticky notes <input type="checkbox"/> Activity Page 12.1
Presenting the Read-Aloud	Whole Group	20 min.	
Discussing the Read-Aloud	Whole Group	15 min.	
Word Work: <i>Stately</i>	Whole Group	5 min.	
Sayings and Phrases	Whole Group	5 min.	
Reading (30 min.)			
Introducing the Reading	Whole Group	5 min.	<input type="checkbox"/> Activity Page 12.2 <input type="checkbox"/> <i>Rattenborough's Guide to Animals</i>
Small Group Reading	Small Group	15 min.	
Discussing the Reading	Whole Group	10 min.	
Writing (20 min.)			
Mammal Web	Independent	20 min.	<input type="checkbox"/> Activity Page 12.3
Language (15 min.)			
Grammar Review	Whole Group	15 min.	<input type="checkbox"/> Activity Page 12.4
Take-Home Material			
Animal Classification Foldable			<input type="checkbox"/> Activity Page 3.2

ADVANCE PREPARATION

- Display the Text Structures chart from Lesson 6 (DP.U2.L6.1).

Text Structures How does the author organize information in a text?		
Different Types of Text Structures	Defined	Clue Words
Time	Explains when an event took place	Before Now Later
Sequence	Explains the order in which events happened	First Next Then After Last Finally
Cause and Effect	Explains why things happen	Because Then If So As a result When
Comparison	Shows differences and similarities between two or more things	However On the other hand Like Unlike Same Both

- Identify the following Digital Images on the program's digital components site to project during the Read-Aloud: U2.L12.1–11.

Universal Access

- Strategically create groups for the guided and small group reading activity.
- Review with students what comparing and contrasting mean. Provide a simple model of a topic using a T-chart or a Venn diagram. Have students brainstorm additional examples.
- Provide additional books, articles, and photographs of different types of mammals.

Lesson 12: Live-Bearing Milk Producers

Speaking and Listening



Primary Focus: Students will identify clue words used to signal a contrast or comparison of mammals. **TEKS 3.1.A; TEKS 3.9.D.iii; TEKS 3.10.B**

VOCABULARY FOR “MAMMALS: LIVE-BEARING MILK PRODUCERS”

- The following are core vocabulary words used in this lesson. Preview the words with the students before the lesson. Students are not expected to be able to use these words immediately, but with repeated exposure throughout the lessons they will acquire a good understanding of most of the words. Students may also keep a “unit dictionary” notebook along with definitions, sentences, and/or other writing exercises using these vocabulary words.

diaphragm, a layer of muscle that separates the upper and lower body sections in mammals and creates a space for the lungs to expand when they breathe in oxygen

mammary glands, milk-producing organs found in female mammals

marine, related to the sea

stately, grand or impressive in size or manner

Vocabulary Chart for “Mammals: Live-Bearing Milk Producers”

Type	Tier 3 Domain-Specific Words	Tier 2 General Academic Words
Vocabulary	diaphragm mammary glands marine	stately
Multiple-Meaning Core Vocabulary Words	diaphragm marine	
Sayings and Phrases	The show must go on	

TEKS 3.1.A Listen actively, ask relevant questions to clarify information, and make pertinent comments; **TEKS 3.9.D.iii** Recognize characteristics and structures of informational text, including: organizational patterns such as cause and effect and problem and solution; **TEKS 3.10.B** Explain how the use of text structure contributes to the author’s purpose.

**INTRODUCING THE READ-ALoud (10 MIN.)****TEKS 3.10.B**

- **Guess the Mammal:** Explain to students that the Read-Aloud and reading today are both about mammals. Tell students that, to start the lesson, you are going to see how much they know about mammals. During Guess the Mammal, list three characteristics of a mammal and have students try to guess the mammal.
 - You can find me resting in rivers, lakes, and swamps to keep cool. I eat mostly grass. I am one of the most dangerous animals in Africa. What am I? (hippo)
 - I am the largest animal to live on Earth. My tongue can weigh as much as an elephant. I have to come to the surface of the water to breathe. What am I? (whale)
 - I have soft, gray-brown fur with white fur on my belly. You can find me in woodlands and grasslands. I glide through the air with the help of my tail. What am I? (flying squirrel)
- Explain that throughout the lesson, students will learn more about mammals and analyze how the author presents the information.
- Direct students' attention to the Text Structures chart (DP.U2.L6.1). Explain that during the Read-Aloud, they will be looking for clue words to signal that the author is going to compare and contrast mammals.

Text Structures How does the author organize information in a text?		
Different Types of Text Structures	Defined	Clue Words
Comparison	Shows differences and similarities between two or more things	However On the other hand Like Unlike Same Both

**TEKS 3.10.B** Explain how the use of text structure contributes to the author's purpose.



Show image U2.L12.1
African habitat with Hilda Hippo

Well, boys and girls, it's me, Rattenborough, back again! Today we're going to talk about a group of animals that you already know a

little something about—based on your own personal experience. Hilda Hippo is one of these, and I am one of these. Remember our mnemonic? **All My Best Friends Represent Vertebrates!** Yes, the letter 'M' in the word *My* stands for mammals! And guess what? You are mammals, too!

Who can name some characteristics of mammals? In what ways are you like Hilda and me? What keen observations you make! Yes, we are warm-blooded vertebrates with hair. I think *you* could help *me* teach this lesson.

Let's begin with the name of this group: mammals. It comes from the Latin word *mammalia*. The word *mammalia* refers to a group of animals who possess **mammary glands**. Mammary glands are milk-producing organs belonging to female mammals. When female mammals give birth, they secrete a nourishing substance—milk—to feed their young. That is one of the primary characteristics of mammals: We feed our young milk. That's right—rats drink mother's milk, hippopotami drink mother's milk, and so do humans! The mother's milk has all the nourishment that a baby needs.

Mammals have backbones! Reach around and check out your back once more to make sure your backbone is still there! Of course it is. Without backbones, we wouldn't be able to sit up straight or hold our heads in the air. And our spinal cords that house the nerves that send messages to our brains would be unprotected! So, because we all have backbones, scientists call us . . . what? Yes, quite right—we are all vertebrates.

Support

Separate the words on the Text Structures chart that signal a comparison and the words that signal a contrast in the text.



Show image U2.L12.2

Turtles and horses

Reptiles, amphibians, and fish all have a relatively low metabolism and, as you have learned, are classified as cold-blooded animals. Like birds, mammals, such as this horse, have a high metabolism, burning lots of energy to help them maintain a constant internal body temperature. What is the term that taxonomists use to classify mammals in terms of body temperature? Yes, we are all warm-blooded.

- Text Structure: Write the following sentence on the board:

- Like birds, mammals, such as this horse, have a high metabolism.

Circle the word *like* in the sentence and explain how this word is used to compare birds to mammals.

Compare	Contrast
Same (similar, the same as) Both Like	However On the other hand Unlike



Show image U2.L12.3

Hippopotamus snout through binoculars

One of you was right when you said that mammals are covered in hair or fur. Some of us are hairier than others. Hilda Hippo and other hippopotamuses don't look so hairy, do they? But you might remember that they do have a little bit of hair around their mouths and on the tips of their ears and tails. Let's take a look at a few of our furrier friends.



Show image U2.L12.4

Giraffe and yak

Here's one of my favorite mammals. I love his **stately** long neck and envy his ability to reach high into trees to eat leaves and to see into the distance.

I'll bet that if I were as tall as a giraffe, I could spot my enemies more quickly.

Does anyone know what this other animal is? It's a yak. Yaks need their shaggy hair and dense woolly undercoats to help keep them warm on the cold Tibetan Plateau where they live.



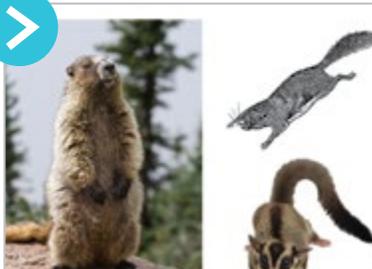
Show image U2.L12.5

Bengal tiger and snow leopard

Tigers and leopards have fur. Look at this Bengal tiger and this beautiful snow leopard of Central Asia. Both of these cat species are on the list of

endangered species, a list of animals whose numbers have dwindled due to the loss of habitats and over-hunting.

- Text Structure: Write the following sentence on the board:
 - Both of these cat species are on the list of endangered species.
 - Circle the word *both* in the sentence and explain how this word is used to compare two species of cats.



Show image U2.L12.6

Marmot and flying squirrel

Does anyone know what this is? It's a marmot, a type of squirrel. And here's another type of squirrel—a flying squirrel! These squirrels don't really

fly, but they have two folds of skin on the sides of their bodies that let them take great leaps, gliding through the air with the help of their tails for steering. The only mammals that can truly fly are bats. They have skin between their long fingers that stretches out, turning their arms into wings when they open. Bats may seem like birds; however, they are not because they have no feathers—they actually have a fine fur—and they give birth to live young.

- Text Structure: Write the following sentence on the board:
 - Bats may seem like birds; however, they are not because they have no feathers.
 - Circle the word *however* in the sentence and explain how this word is used to contrast bats and birds.



Show image U2.L12.7
Various mammals

Most, but not all, mammals are **terrestrial**, meaning that they live on land. Can anyone think of an aquatic mammal, a mammal that lives in

water? I'll give you a hint. One of them is my friend—Hilda!



Show Image U2.L12.8
Hippopotamus in water

Ah, yes. Hippopotami love the water. But they are actually semiaquatic, meaning that they live partly in water and partly on land. Usually, Hilda and

other hippopotami stand in the water during the day to keep cool. Then they graze on land when evening falls.



Show image U2.L12.9 Aquatic and semiaquatic mammals

Whales are **marine** mammals, meaning that they live in the ocean. The blue whale is not only the largest mammal, but it is also the largest animal on

Earth. Blue whales can grow up to one hundred feet long; that's a little longer than a basketball court! Its tongue alone weighs more than three tons! Imagine that! Manatees and smaller whales such as dolphins and porpoises are also fully aquatic, marine mammals. They share saltwater seas with walruses and seals, semiaquatic animals that like to wander on shore just like Hilda Hippo does.

Marine mammals are believed by many scientists to have evolved from land mammals, and they share many of the same characteristics. They are warm-blooded, they have backbones and fur or hair—even though sometimes it is the tiniest amount of hair—and they breathe oxygen from the air. Remember when we talked about how fish use gills to breathe in oxygen from the water? Remember how in amphibians those gills develop into lungs, requiring amphibians to come to the surface of the water to breathe air? Well, mammals also have lungs. All mammals have lungs and an underlying **diaphragm** that assists breathing. When the diaphragm tightens, it creates more space in the lung cavity, and air is drawn into the lungs. All mammals, including whales and porpoises, dolphins and manatees, must come to the surface of the water now and then to breathe.



Show image U2.L12.10 Capybara, beaver, and duck-billed platypus

Some mammals also live in fresh water. I want to introduce you to another semiaquatic relative of

mine. This is a capybara [kappy-barrah]. He, like me, is classified as a rodent and likes to swim.

-
- Text Structure: Write the following sentence on the board and pass out one sticky note to each student.
 - He, like me, is classified as a rodent and likes to swim.
 - On the sticky note, have students list the text structure key word and write *compare* or *contrast* to signal what is happening in the sentence. (*like, compare*)
 - With a partner, have students share their sticky note response.
 - Have students place their sticky notes on the board under the sentence.

Challenge

Have students identify sentences that compare and contrast without clue words.



Check for Understanding

Quickly review the sticky notes on the board. If students did not recognize the *like* and *compare*, review with students the clue word in the sentence.

The duck-billed platypus is unusual. It is one of only a few mammals that lay eggs. Spiny anteaters, also natives of Australia and nearby islands, are the only other egg-laying mammals. All other mammals are live-bearing, which means they give birth to live young. The young are nourished inside the mother's body, and most are fully developed when they are born, looking like smaller versions of their parents. A few, like kangaroos and opossums, are part of a group of mammals called marsupials. Marsupial babies are very underdeveloped when they are born, but they move directly to the mother's protective pouch to be nourished by her milk. All mammals, whether hatched from eggs or born live, feed on the mother's milk in their **infancy**.



Show image U2.L12.11 Wolf and deer with respective skeletons

Remember learning that birds' beaks may provide clues to their diets? The same is true of mammals' mouths. Wide mouths and sharp, pointed teeth

suggest that these mammals may be carnivores. Wolves, whales, and bats are all carnivores. Herbivores are more likely to have long jaws, long tongues, and flat teeth. Deer, sheep, monkeys, and pandas are all herbivores. Omnivorous mammals include bears, opossums, chipmunks, and mice. Many humans are omnivores, but humans *think* about the choices they make about what to eat. Omnivores generally have sharper front teeth and flat teeth for chewing in the back of their mouths. Think about your mouth. Do you think humans were designed to eat meat, only plants, or both meat and plants? Why?

Next time, we'll look at the last of my slides. Be ready for a review of the five vertebrate groups of the animal kingdom—amphibians, mammals, birds, fish, and reptiles. I'm sure you are becoming quite skilled at classifying animals, and we'll get to have some fun with doing just that.

Can't wait—see you soon!

DISCUSSING THE READ-ALoud (15 MIN.)

- Literal.** How would you describe the body covering of a mammal?
 - » It is covered with hair or fur.
 - How does the fur on a yak and on other animals help them?
 - » It keeps them warm.
 - Evaluative.** Compare and contrast mammals and birds.
 - » Both are warm-blooded vertebrates; however, mammals have fur or hair, whereas birds have feathers; mammals give birth to live babies, whereas baby birds hatch from eggs; and mammals have mammary glands, which birds do not.
- Have students independently complete Activity Page 12.1.

Activity Page 12.1



**ENGLISH
LANGUAGE
LEARNERS**

Speaking and Listening Understanding Text Structures

Beginning

Assist in completing Activity Page 12.1 by reading the sentences aloud as the students follow along on the page. Ask them to point to the clue word in the sentence first and then circle it. Ask yes and no questions; for example, "Is this sentence comparing two things?"

Intermediate

Allow students to work with a partner to complete Activity Page 12.1.

Advanced/ Advanced High

Provide support as needed.

ELPS 2.E



Check for Understanding

If students have difficulty identifying the text structure clue words, review the Text Structures chart in small groups and circle the clue words in each sentence.

WORD WORK: STATELY (5 MIN.)

1. In the Read-Aloud, you heard Rattenborough describing a giraffe and saying, “I love his stately long neck . . .”
2. When something is stately, it is grand or impressive in size or manner.
3. The stately marching band at my brother’s high school football game made the game feel very important.
4. Have you ever witnessed anything that was stately? What was it and where were you? Be sure to use the word *stately* when you tell about it. Ask two or three students to answer the question. If necessary, guide and/or rephrase the students’ responses to be complete sentences: “When my mom dressed up to go out to a fancy dinner, her stately appearance _____.”
5. What’s the word we’ve been talking about? What part of speech is the word *stately*?
6. Use a Complete Sentences activity for follow-up. Ask students, “What does *stately* mean?”
7. Now have a few volunteers form complete sentences that include the word *stately*, along with identifying an animal in one of the five vertebrate groups that they think is stately (“I think a peacock is stately because _____.”). As time allows, you may wish to allow students to create a list of synonyms for *stately* and/or draw a picture of a stately animal and share it with the class.

SAYINGS AND PHRASES (5 MIN.)

- Proverbs are short, traditional sayings that have been passed along orally from generation to generation. These sayings usually express general truths based on experiences and observations of everyday life. Although some proverbs do have literal meanings—that is, they mean exactly what they say—many proverbs have a richer meaning beyond the literal level. It is important to help

your students understand the difference between the literal meanings of the words and their implied or figurative meanings.

- Ask students if they have ever heard anyone say, “The show must go on.” Have students repeat the saying. Ask students to guess what this phrase means. Explain that, literally, this saying means that it is necessary for a show of some sort to continue. The implied or figurative meaning, however, is that any project, event, or plan must be completed no matter what happens.
- Explain that this saying, which was in use in the United States starting in about 1867, likely originated with the popularity of the circus. Despite tragic accidents, poor weather conditions, and other setbacks that might have meant cancellation, circus shows usually took place as scheduled.
- Ask students what Rattenborough began to think about during his slide presentation today that caused him to get lost in a memory. Tell students that it seemed for a moment that Rattenborough might go on and on about his childhood, but he stopped himself. Ask students, “What did he say to get back to the lesson?” (“The show must go on!”) He was implying that he’d better get on with his plan—the slide show—because it had to be completed today. Find other opportunities to use this saying in the classroom throughout the year.

Lesson 12: Live-Bearing Milk Producers

Reading



Primary Focus: Students will compare two texts on mammals using a graphic

organizer. **TEKS 3.6.E; TEKS 3.6.H; TEKS 3.7.A**

VOCABULARY FOR “MAMMALS” **TEKS 3.7.A**

- The following are vocabulary words used in this lesson. Preview the words with the students before the lesson and refer back to them at appropriate times. The words also appear in the glossary in the back of *Rattenborough’s Guide to Animals*.

communicate, to share information with others through language, writing, or gestures

language, words used to communicate

TEKS 3.6.E Make connections to personal experiences, ideas in other texts, and society; **TEKS 3.6.H** Synthesize information to create new understanding; **TEKS 3.7.A** Describe personal connections to a variety of sources, including self-selected texts.

sonar, a way to find things underwater using sound waves

predator, an animal that hunts other animals for food (**predators**)

Vocabulary Chart for “Mammals”		
Type	Tier 3 Domain-Specific Words	Tier 2 General Academic Words
Vocabulary	sonar predator	communicate language
Multiple-Meaning Core Vocabulary Words		
Sayings and Phrases		

INTRODUCING THE READING (5 MIN.)

- Explain to students that they will read another text about mammals.
- Have students turn to Activity Page 12.2. As a whole group, complete the first part of the handout: Important Points from the Read-Aloud.

Note: Reread Read-Aloud text if necessary.

- Tell students that, as they read in small groups, they will record important information in the text on the second part of Activity Page 12.2: “Mammals.”

SMALL GROUP READING (15 MIN.)

Note: The Guided Reading Supports that follow are intended for use while you work with students in Small Group 1.

- Small Group 1: Read the chapter along with students. Follow the Guided Reading Supports below as you guide students through the chapter.
- Small Group 2: Ask these students to read the chapter in small groups and complete Activity Page 12.2.

Activity Page 12.2





Aha! Now we get to an animal group that I really know a lot about! I, Rattenborough, am part of this group of animals myself! I'm talking about **mammals**. Do you remember the **characteristics** that scientists use to identify **mammals**? Hair is one major **characteristic**. Live birth and giving milk to their young are others. They breathe **oxygen** from the air using their lungs. **Mammals** are also **warm-blooded**, and they are **vertebrates**.

Most scientists agree that **mammals** are the smartest creatures in the animal **kingdom**. All animals **communicate** in some way. Dogs **communicate** by barking and wagging their tails. Cows moo. Some cats meow, others roar. But **mammals** seem to use the most complex forms of **communication**. Humans use **language** to talk. They also **communicate** with their faces and hands. Some apes and chimpanzees have even been taught to use sign **language** to **communicate**.



Mammals communicate in different ways.

Pages 104–105

- Read the title of the chapter together as a group: “Mammals.”
- Ask students to read **pages 104–105** to themselves to find the answer to the question: “What makes mammals the smartest creatures in the animal kingdom?”
- When students have finished reading, restate the question and ask students to answer.
 - » All mammals communicate in some way.
- Ask students to provide examples from **page 104** of how some mammals communicate.
 - » Dogs bark and wag their tails, cows moo, some cats meow or roar, people talk and use their faces and hands, and some apes and chimpanzees use sign language.
- Ask students to look at the images on **page 105** and read the caption.
- Have students record key information from the text on Activity Page 12.2.

There are two other **mammals** that also seem to use an advanced form of **communication**. In fact, you may not even realize that these animals are **mammals** because they live in the ocean. Dolphins and whales are classified as **aquatic mammals**. Dolphins and whales, like other **mammals**, do not have **gills** like fish, so they cannot breathe underwater. Instead, they use blowholes at the top of their heads to blow out water and suck in air. Dolphins and whales rise to the surface of the water and poke their heads into the air to breathe.

Whales and dolphins **communicate** by sending out sound waves through the water. These waves, called **sonar**, help them find their way through the ocean. The sound waves bounce off objects and echo back to the whale or dolphin. The whale or dolphin can tell the size, shape, and speed of objects, and the distance away from them based on the time it takes the echo sound to travel back to them. They also use their sounds to “talk” to each other!



*You might think dolphins would be classified as fish, but they are classified as **mammals**.*

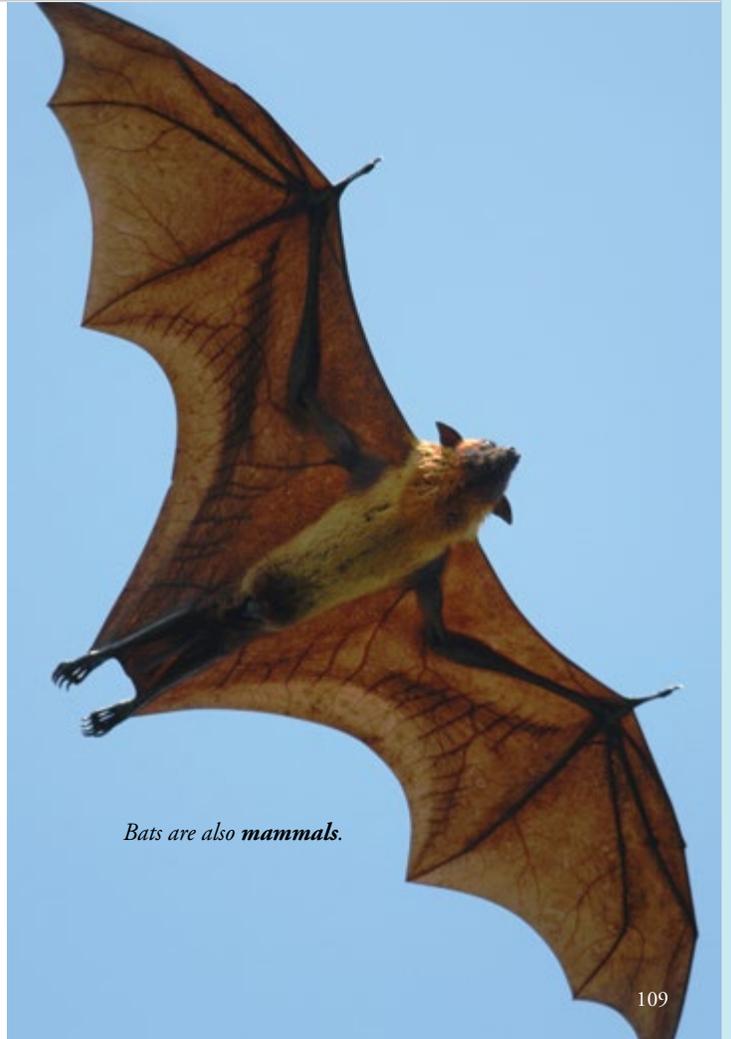
Pages 106–107

- Ask students to read **pages 106–107** to themselves to discover how dolphins and whales communicate.
- When students have finished reading, restate the question and ask students to answer.
 - » Dolphins and whales communicate by sending out sound waves called sonar through the water. The sound waves bounce off objects and echo back to the whale or dolphin. The whale or dolphin can tell the size, shape, speed, and distance of objects based on the time it takes the echo of the sound to travel back to it.
- Ask students, “What kind of mammals are whales and dolphins? Which sentence(s) on **page 106** answers the question?”
 - » Whales and dolphins are aquatic mammals, which means they live in water.

Dolphins and whales also give birth to live young. No eggs needed! They even feed milk to their young. If you study them closely, you will learn that dolphins and whales have hair, not **scales**. They also have very thick skin. Their skin protects them from the cold and animals that are their **predators**.

You might also be surprised to learn that bats are also **mammals**. Bats fly like birds, but they do not have the other **characteristics** that birds have. Bats have fur, not **feathers**. Their arms have wing-like flaps of skin, but they are not like bird wings. Bats also give birth to live young and they produce milk. So, scientists **classify** bats as **mammals**.

108



Bats are also mammals.

109

Pages 108–109

- Ask students to read **pages 108–109** to find out what is special about the skin that dolphins and whales have.
- When students have finished reading, restate the question above and ask students to answer.
 - » Their skin protects them from the cold and animals that are their predators.
- Ask students, “How are bats different from birds? Which sentences on **page 108** answer the question?”
 - » Bats have fur, not feathers; they have wing-like flaps of skin, not wings; they give birth to live young; and they produce milk.
- Have students record key information from the text on Activity Page 12.2.

Here's an interesting fact: not all **mammals** give birth to live young. The duck-billed platypus and spiny anteater both lay eggs like birds and some **reptiles**, but have all the other **characteristics** of **mammals**. Good luck finding one. They are very rare!

Mammals have their fair share of odd members, like the duck-billed platypus. But the basic **characteristics**—hair, backbone, milk, **warm-blooded**—are always present in **mammals** no matter what.



A duck-billed platypus

Pages 110–111

- Ask students to read **pages 110–111** to discover what is unique about the duck-billed platypus and the spiny anteater, which are both mammals.
- After students have finished reading, restate the question above and ask students to answer and provide details from the chapter.
 - » They both lay eggs instead of giving birth to live young.
- Have students record key information from the text on Activity Page 12.2.

DISCUSSING THE READING (10 MIN.)

- As a whole group, have students share information that they recorded on Activity Page 12.2 from the reading. Assist students in finding connections between the two texts.



Check for Understanding

If students are unable to identify connections between the two texts, then list a key statement and three supporting details from both texts to compare.



**ENGLISH
LANGUAGE
LEARNERS**

Reading
Reading/Viewing Closely

Beginning

Ask students yes and no questions; for example, “In the reading ‘Mammals,’ did we learn that animals communicated?”

Intermediate

Reread parts of the text aloud and ask students to orally recall some key details. Model writing the details in the correct part of the graphic organizer on Activity Page 12.2.

Advanced/ Advanced High

Encourage students to share their answers during the whole class discussion after completing Activity Page 12.2.

ELPS 4.F

Support

Provide students with key topics to list on Activity Page 12.3, such as cold-blooded or warm-blooded, vertebrate or invertebrate, etc.

Activity Page 12.3



Lesson 12: Live-Bearing Milk Producers

Writing



Primary Focus: Students will record key information about mammals.

TEKS 3.7.E

MAMMAL WEB (20 MIN.)

- Have students take out Activity Page 12.3 and *Rattenborough's Guide to Animals*. Students will gather information to reinforce what they have learned and as notes for the formal paragraph assignment they will write later in the unit. In the center, students will find the word *mammals*. In the surrounding ovals, students will write words and/or phrases that describe the characteristics of animals in that group. They should also include in one of the surrounding ovals examples of animals in this group based on what they heard in the Read-Aloud today and their reading. Tell students that they will complete Activity Page 12.3 independently.

TEKS 3.7.E Interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.



Beginning

Ask students questions with one-word answers and guide them in writing their answers on the graphic organizer; for example, “Mammals have what covering their bodies?”

Intermediate

Allow students to work with partners to complete the graphic organizer.

**Advanced/
Advanced High**

Encourage students to work independently and provide assistance if needed.

ELPS 5.G

Activity Page 12.4



Lesson 12: Live-Bearing Milk Producers

Language



Primary Focus: Students will use nouns, verbs, and adjectives, and explain their function in sentences. **TEKS 3.11.D.ii–iv**

GRAMMAR REVIEW (15 MIN.)

- Tell students that today they will review all of the grammar taught over the last two weeks.
- Take a few moments to ask students for examples and definitions of the following:
 - **Nouns** = common; names of people, places, things in general—for example, *boat, boy, school*
 - **Nouns** = proper; names of people, places, and things in particular—for example, *Sally, Moore Park*
 - **Nouns** = concrete; names of people, places, and things that can be detected using a person’s five senses
 - **Nouns** = abstract; names of emotions/feelings, states/attributes, ideas/concepts, and movements/events that can’t be detected using a person’s five senses
 - **Verbs** = action words—for example, *walk, talk, sing, hop*
 - **Verbs** = linking words that join the predicate to the subject it describes—for example, *is, seems, feels, are, were, was*
 - **Adjectives** = words that describe nouns, often telling how many, color, shape, size, etc.—for example, *happy, pretty, soft, seven, tall, sharp*
 - **Adjectives** = articles—for example, *a, an, the*
- Have students complete Activity Page 12.4 independently.

TEKS 3.11.D Edit drafts using standard English conventions, including: (ii) past, present, and future verb tense; (iii) singular, plural, common, and proper nouns; (iv) adjectives, including their comparative and superlative forms.

Lesson 12: Live-Bearing Milk Producers

Take-Home Material

- Have students complete the Mammals section on Activity Page 3.2.



**ENGLISH
LANGUAGE
LEARNERS**

Language
Using Verbs and Verb
Phrases/Using Nouns and
Noun Phrases

Beginning

Read words from the sentences on Activity Page 12.4 and ask students to orally name if the word is a noun, verb, or adjective. Have students find the words in the sentences and guide them in circling the nouns, putting a box around the adjectives, and putting a wiggly line under the verbs.

Intermediate

Allow students to work with partners to complete Activity Page 12.4.

Advanced/ Advanced High

Provide 1:1 support and prompting if needed.

ELPS 3.C

Activity Page 3.2



13

Jane Goodall

PRIMARY FOCUS OF LESSON

Speaking and Listening

Students will identify information presented in a media clip about Jane

✚ Goodall. **TEKS 3.9.F**

Reading

Students will determine the central idea and supporting details about Jane

✚ Goodall from the media clip and reading. **TEKS 3.9.D.i; TEKS 3.9.F**

Writing

Students will begin drafting an informative writing piece about a select vertebrate's characteristics and classification, clearly stating ideas, facts, and

✚ details. **TEKS 3.11.A; TEKS 3.11.B.i; TEKS 3.11.B.ii; TEKS 3.11.E; TEKS 3.12.B; TEKS 3.13.C**

FORMATIVE ASSESSMENT

Activity Page 13.2

Jane Goodall: Central Idea and Supporting Details

Identify the central idea and supporting details presented in a reading and media clip.

✚ **TEKS 3.9.D.i; TEKS 3.9.F**

Activity Page 13.3

Animal Report Draft a writing piece about an animal.

✚ **TEKS 3.12.B**

✚ **TEKS 3.9.F** Recognize characteristics of multimodal and digital texts; **TEKS 3.9.D.i** Recognize characteristics and structures of informational text, including: the central idea with supporting evidence; **TEKS 3.11.A** Plan a first draft by selecting a genre for a particular topic, purpose, and audience using a range of strategies such as brainstorming, freewriting, and mapping; **TEKS 3.11.B.i** Develop drafts into a focused, structured, and coherent piece of writing by (i) organizing with purposeful structure, including an introduction and a conclusion; (ii) developing an engaging idea with relevant details; **TEKS 3.11.E** Publish written work for appropriate audiences; **TEKS 3.12.B** Compose informational texts, including brief compositions that convey information about a topic, using a clear central idea and genre characteristics and craft; **TEKS 3.13.C** Identify and gather relevant information from a variety of sources.

LESSON AT A GLANCE

	Grouping	Time	Material
Speaking and Listening (50 min.)			
Introducing Jane Goodall	Whole Group	40 min.	<input type="checkbox"/> Jane Goodall Quote (Digital Projections) <input type="checkbox"/> Activity Page 13.1
Discussing the Video Clip	Whole Group	10 min.	
Reading (40 min.)			
Introducing the Reading	Whole Group	5 min.	<input type="checkbox"/> Activity Pages 13.1, 13.2 <input type="checkbox"/> <i>Rattenborough's Guide to Animals</i>
Whole Group Reading	Whole Group	15 min.	
Discussing the Reading	Independent	20 min.	
Writing (30 min.)			
An Informational Paragraph	Whole Group	30 min.	<input type="checkbox"/> Activity Page 13.3
Take-Home Material			
Family Letter			<input type="checkbox"/> Activity Page 13.4

ADVANCE PREPARATION

Reading

- On chart paper, write the following sentence or prepare Digital Projection DP.U2.L13.1.

Jane Goodall Quote

“One thing I had learned from watching chimpanzees with their infants is that having a child should be fun.”

- Go online and locate the video clip titled “Jane Goodall Tribute” from the Jane Goodall Institute. It is also available on YouTube.

Universal Access

- Provide appropriate books, articles, etc., about people who are animal or environmental activists.
- Review the purpose of informational text with students. Remind them that the main purpose is to give information about a topic. It has a central idea that is backed up with facts and details. Remind them that there are different structures: compare and contrast, descriptive, sequence, cause and effect, or problem and solution. Remind students that they discussed text features in previous lessons.

Start Lesson

Lesson 13: Jane Goodall

Speaking and Listening

Primary Focus: Students will identify information presented in a media clip about Jane Goodall. **TEKS 3.9.F**

INTRODUCING JANE GOODALL (40 MIN.)

- Explain to students that many times people say important or inspirational things and their thoughts are recorded. For example, Dr. Seuss said, “Don’t cry because it’s over, smile because it happened,” and Maya Angelou said, “I’ve learned that people will forget what you said, people will forget what you did, but people will never forget how you made them feel.”
- Post or project the Jane Goodall quote. With a partner, have students read the quote and try to make predictions about Jane Goodall’s life.

TEKS 3.9.F Recognize characteristics of multimodal and digital texts.

- Explain that during our lesson today, we will watch a video clip about Jane Goodall. The video will be played twice. The first time the video is played, students should watch with a focus on identifying the key information. The second time the video is played, students will record their thoughts on Activity Page 13.1.
- Project and play the following video clip from the Jane Goodall Institute.
- Play the video clip once for students to watch. Play the video clip a second time for students to record their ideas on Activity Page 13.1.

DISCUSSING THE VIDEO CLIP (10 MIN.)

- Whole group share: Have students share their responses on Activity Page 13.1. Assist students in identifying the central idea and supporting details. Write their responses on the board.

Lesson 13: Jane Goodall Reading



Primary Focus: Students will determine the central idea and supporting details about Jane Goodall from the media clip and reading. **TEKS 3.9.D.i; TEKS 3.9.F**

VOCABULARY FOR READING “JANE GOODALL”

- The following are vocabulary words used in this lesson. Preview the words with the students before the lesson and refer back to them at appropriate times. The words also appear in the glossary in the back of the student reader.

primatologist, a scientist who studies primates

primate, a mammal such as a monkey, ape, or human

behavior, how a person or animal acts

intelligent, smart

activist, a person who strongly believes in changing something and works hard to try to make change happen

TEKS 3.9.D.i Recognize characteristics and structures of informational text, including: the central idea with supporting evidence; **TEKS 3.9.F** Recognize characteristics of multimodal and digital texts.

Activity Page 13.1



**ENGLISH
LANGUAGE
LEARNERS**

Speaking and Listening Reading/Viewing Closely

Beginning

Ask simple one-word questions, such as, “Did Jane Goodall go to Africa to study chimpanzees?”

Intermediate

Assist students in completing Activity Page 13.1 by listing central ideas from on the board and guiding them in listing them in the graphic organizer.

Advanced/ Advanced High

Allow students to work with a partner to find and list the central ideas or encourage them to work independently.

ELPS 2.E

Support

If students have difficulty identifying the central idea of the video clip, then give them three potential central ideas and have them determine which one is correct.

Challenge

Have students research Jane Goodall further by using the following website for more information: www.janegoodall.org

Vocabulary Chart for “Jane Goodall”		
Type	Tier 3 Domain-Specific Words	Tier 2 General Academic Words
Vocabulary	primatologist primate activist	behavior intelligent
Multiple-Meaning Core Vocabulary Words		
Sayings and Phrases		

INTRODUCING THE READING (5 MIN.)

- Tell students that today, they will read a biography entitled “Jane Goodall.”
- Remind students that a biography is about a person’s life.
- Explain to students that during the first read through, they should listen to the text and record key details about Jane Goodall on Activity Page 13.1.



Jane Goodall is a very famous **primatologist**. She is a scientist who studies a group of **mammals** called **primates**. **Primates** are a group of **mammals** that includes humans, monkeys, gorillas, and chimpanzees. Jane Goodall has spent her whole life studying chimpanzees. She has focused on studying animal **behavior** in chimpanzees. Her discoveries have made her one of the best known scientists in the world.

Goodall was born in 1934 in London, England. When she was a little girl, her father gave her a toy chimpanzee. It looked so real that people who visited her house were afraid of it, but she loved it!

When Goodall was 23, she went to Africa. She began studying chimpanzees with a well-known scientist named Louis Leakey. After a year of working in Africa, Goodall went back to England and studied at the University of Cambridge. Can you guess what her favorite subject was? Chimpanzees!

112

*Jane Goodall*

113

WHOLE GROUP READING (15 MIN.)**Pages 112–113**

- Read the title of the chapter together as a group: “Jane Goodall.”
- Ask students to read **pages 112–113** to themselves to find the answer to the question: “What does it mean to study chimpanzee behavior?”
- When students have finished reading, restate the question above and ask students to answer.
 - » Studying chimpanzee behavior means to study how they act.

After finishing **school**, Goodall returned to Africa and spent the next 45 years studying chimpanzees in the wild. Her discoveries during those years completely changed the way people think about **primates**.

Before Goodall's work, people thought chimpanzees were **herbivores**. She discovered that they eat meat, too. More importantly, Goodall discovered that chimps were quite **intelligent**. She **observed** them making and using tools! Before that, people thought humans were the only animals that made and used tools.

When you hear the word *tool*, you may think of a hammer, saw, or shovel. Chimps don't use those kinds of tools. A tool is something used to help make a job easier. Tools can be very simple. A rock becomes a tool if you pick it up and use it to crack open a walnut.



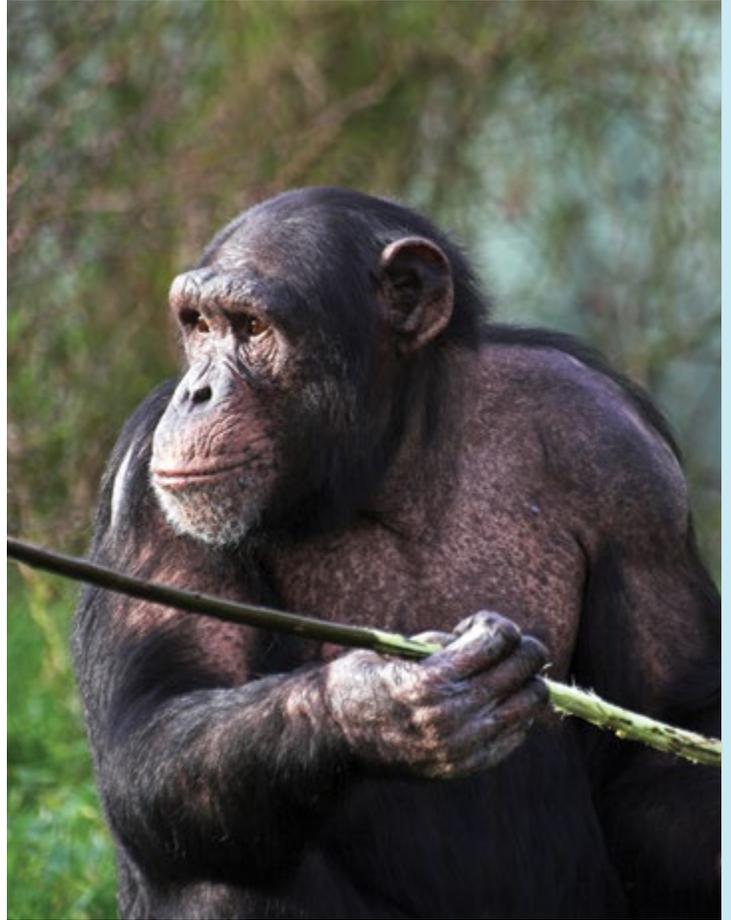
*Goodall studies chimpanzees, a type of **mammal** belonging to the **primate** group.*

Pages 114–115

- Ask students to read **pages 114–115** to themselves to find the answer to the question: “What unusual discoveries about chimps did Jane Goodall make during her years in Africa?”
- When students have finished reading, restate the question above and ask students to answer.
 - » People thought chimpanzees were herbivores, but Jane Goodall found out that they also eat meat. They are also quite intelligent. They make and use tools.
- Ask, “What is an example of a tool that chimps use?”
 - » a rock to crack open a walnut

Goodall **observed** chimps using blades of grass and sticks as tools. Chimps like to eat termites, a type of insect that is like an ant. Termites live in holes underground. To catch these tasty insects, Goodall **observed** a chimp sticking a blade of grass into a termite hole. The termites crawled onto the grass. Then, the chimp took the grass out of the hole and ate all the termites. Before Goodall wrote about this **behavior**, people did not realize how clever chimps and other **primates** are.

Goodall gave names to all the chimps in the group she was studying. She got to know them pretty well. Over time, she learned that chimps were smart animals. She learned that chimps express many of the same feelings as people. They can feel happy, sad, and mad. Chimps can also be mean. Goodall saw them attack and eat small monkeys, not out of hunger, but because they didn't want them around.



A chimpanzee uses a plant stem as a tool.

Pages 116–117

- Ask students to read **pages 116–117** to themselves to find the answer to the question: “What other tools do chimps use?”
- When students have finished reading, restate the question above and ask students to answer.
 - » Chimps stick a blade of grass into a termite hole, pull out the blade of grass, and eat all the termites that have crawled on it. They also use plant stems.

What feelings do chimps show that humans show?

- » happiness, sadness, anger, and meanness

Goodall is more than a scientist. She is also an **activist**. An **activist** is someone who works hard to solve a problem and change something in the world. Goodall works as an animal rights **activist** to protect chimpanzees and their **habitats**. She tells others about human damage to **habitats**, such as hunting and pollution, and works to stop these problems. She loves working with young people and teaching them how to protect animals. She has written many books and has been the subject of books and movies. She has won many awards for her work in protecting chimpanzees. As of 2015, she was 81 years old and still working to spread the message that animals need to be protected!



*Jane Goodall continues to work as an animal rights **activist**.*

Pages 118–119

- Ask students to read **pages 118–119** to themselves to find the answer to the question: “As an activist, what did Jane Goodall work to change?”
- When students have finished reading, restate the question above and ask students to answer.
 - » She worked to protect chimpanzees and their habitats from human damage, such as hunting and pollution.

DISCUSSING THE READING (20 MIN.)

- Have students turn to Activity Page 13.2. Explain that they will determine the central idea and supporting details about Jane Goodall using the information presented in the video clip and reading.
- As a group, determine the central idea about Jane Goodall. “If someone were to walk into our classroom and we could only tell them one thing about Jane Goodall, what would it be?”
- Next, determine the supporting details about Jane Goodall using information provided in the video clip and reading.



Check for Understanding

If students have difficulty identifying the central idea, then reread the first paragraph in the Reader to focus on a shorter paragraph in the text.

Lesson 13: Jane Goodall Writing



Primary Focus: Students will begin drafting an informative writing piece about a select vertebrate’s characteristics and classification, clearly stating ideas, facts, and details. **TEKS 3.11.A; TEKS 3.11.B.i; TEKS 3.11.B.ii; TEKS 3.11.E; TEKS 3.12.B;**

TEKS 3.13.C

AN INFORMATIONAL PARAGRAPH (30 MIN.)

TEKS 3.11.A; TEKS 3.11.B.i;

TEKS 3.11.B.ii; TEKS 3.11.E; TEKS 3.12.B; TEKS 3.13.C

- Tell students that they are going to choose an animal from one of the five vertebrate groups that they learned about from the Read-Alouds and readings. Ask them to say together out loud the mnemonic for remembering the five groups: All My Best Friends Represent Vertebrates. Now ask them to say together out loud the names of the five groups: Amphibians, Mammals, Birds, Fish, Reptiles. Ask students which word in the mnemonic does not represent a specific animal group, but instead a larger group with backbones. (the last word, *vertebrates*)

TEKS 3.11.A Plan a first draft by selecting a genre for a particular topic, purpose, and audience using a range of strategies such as brainstorming, freewriting, and mapping; **TEKS 3.11.B** Develop drafts into a focused, structured, and coherent piece of writing by (i) organizing with purposeful structure, including an introduction and a conclusion; (ii) developing an engaging idea with relevant details; **TEKS 3.11.E** Publish written work for appropriate audiences; **TEKS 3.12.B** Compose informational texts, including brief compositions that convey information about a topic, using a clear central idea and genre characteristics and craft; **TEKS 3.13.C** Identify and gather relevant information from a variety of sources.

Activity Page 13.2



**ENGLISH
LANGUAGE
LEARNERS**

Reading
Reading/Viewing Closely

Beginning

Ask yes and no questions, such as, “Is an activist someone who works hard to change something?”

Intermediate

Model for students how to find the central ideas and details in the text by rereading shorter portions and finding key words. Discuss what the words mean and why they think it’s in the sentence.

Advanced/ Advanced High

Provide support for students as needed.

ELPS 4.E

Support

In a small group, read aloud the first paragraph on Jane Goodall. Identify the central idea in a short paragraph.

Challenge

Have students identify information that is presented in different formats on Jane Goodall such as speeches, graphs and charts.

- Tell students that each of them is going to write an informational paragraph about an animal and animal group of their choosing, and in the paragraph they will explain why the animal is classified as it is.
- Write the word *informational* on the board, and ask what word (or words) students see inside that word. You may wish to underline or box in the word *information* and/or *inform*. Explain that informational writing relays information, or facts, and informs the reader about a certain topic. For example, an informational paragraph may explain how electricity works or why we have four seasons in the Northern Hemisphere. Tell students that sometimes when writing an informational paragraph, a writer may already know information, or facts, about the chosen topic. Explain that many times, however, writers will need to research several sources for information, including books, magazines, websites, etc.
- Tell students that they have collected a lot of information that is now available to help them with this informational paragraph. Point out the many helpful sources of information: the Animal Classification Foldable (Activity Page 3.2), Brainstorming webs, and Field Journal responses.
- Remind students of the steps of the writing process—plan, draft, revise, edit, and publish—and tell them that all of the notes they have collected along with the Classification Foldable will provide the information they will need to write their informational paragraph. Tell students that they will each write an informational paragraph with guidance from you.
- Have students take out their copies of their Classification Foldable, Brainstorming webs, and Field Journal responses. Guide them in looking over the five Brainstorming webs and in deciding on which animal and animal group they are each going to write about. Tell them that the one Brainstorming Graphic Organizer they choose will provide the information and the plan for their paragraphs.
- Have students turn to Activity Page 13.3. Write these three steps on chart paper, a chalkboard, or a whiteboard. Tell students that once they choose an animal, they will do the following:
 1. Write a topic sentence.
 2. Write at least three supporting sentences from their sources to support the topic sentence.
 3. Write a concluding sentence.
- “Who can tell me what a topic sentence is?” Remind students that a topic sentence is the first sentence in a paragraph that tells the reader the central idea of that paragraph. In this case, the topic sentence will make a claim about the chosen animal and how it is classified. Share this example with students: “Fruited dragons, one of my favorite animals, are classified by scientists as reptiles.”

Activity Page 13.3





Writing Writing

Beginning

Provide 1:1 prompting and support. Some students have difficulty finding information and taking notes. Some have difficulty turning notes into sentences and paragraphs. Adjust your assistance as needed.

Intermediate

Provide support as needed.

Advanced/ Advanced High

Encourage students to work independently, writing in complete sentences. Provide additional support as needed.

ELPS 5.B; ELPS 5.G

Support

Model the writing process for students.

Challenge

Have students research additional resources to add information on their selected animal.

Activity Page 13.4



- “What will the supporting sentences, or evidence, provide?” Guide students in understanding that their supporting sentences will provide the reasons for their topic sentence, or claim. This is the information they will research in their sources. Share these example sentences with students. “First, frilled dragons are grouped in the reptiles group because they are cold-blooded. Because frilled dragons do not have a source of internal heat, like you and I do, they need a source of external heat, such as the sun or a heat lamp. Another reason frilled dragons are in the reptile group is that they lay eggs instead of giving birth to live young. Reptiles are also vertebrates, which is why they are grouped together into one group. Finally, frilled dragons have scaly skin like other reptiles, instead of fur or feathers.” Point out the use of transitional words, such as *first*, *another*, and *finally*.
- “Who can tell me what a concluding sentence is?” Remind students that this is the last sentence in the paragraph that wraps up, or concludes, the information and often restates the topic sentence in another way. Tell students that the concluding sentence lets the reader know that the writer is finished with the central idea stated in the paragraph, and that it does not introduce any new supporting information. Share this example with students: “These are the reasons that frilled dragons are categorized as reptiles, and I hope to have one of these awesome reptiles as a pet someday!”
- Tell students that they will draft at least five sentences today, but they may also wish to write additional sentences about their chosen animal, such as descriptions of its habitat, eating habits, their thoughts about the animal, and interesting facts, including which animals are pattern breakers and why. Remind students that they will be able to use what they already know to supply the reasons for the animal’s classification and any other information they would like to include. You may also wish to allow students to research further, using trade books in the classroom book tub, their Skills Reader, websites, and other sources.
- Encourage students to begin thinking of title ideas and any changes that they think are needed in their paragraphs. Tell students that you will help them revise, or make changes to, this piece during the next writing session.

Note: You may wish to model this writing process completely for some students; see the sample paragraph at the end of Lesson 9.

End Lesson

Lesson 13: Jane Goodall

Take-Home Material

- Students will complete Activity Page 13.4 at home.

14

“Scientists Who Classify Animals” and “Vertebrates around the World”

PRIMARY FOCUS OF LESSON

Reading

Students will use text features to quickly locate information about scientists who classify animals. **TEKS 3.9.D.ii; TEKS 3.6.C**

Speaking and Listening

Students will ask and answer questions about vertebrates around the world. **TEKS 3.1.A; TEKS 3.6.B**

Writing

Students will continue drafting an informative writing piece about an animal's characteristics and classification, clearly stating ideas, facts, and details. **TEKS 3.11.B.ii; TEKS 3.11.C; TEKS 3.11.D.x; TEKS 3.11.D.xi**

FORMATIVE ASSESSMENT

Activity Page 14.1 **Text Feature Search** Locate text features.

TEKS 3.9.D.ii; TEKS 3.6.C

Activity Page 14.2 **Questions and Answers** Ask questions throughout the reading and determine the correct answer.

TEKS 3.6.B

Activity Page 14.4 **Informational Writing** Draft an informative writing piece. **TEKS 3.11.B.ii**

TEKS 3.9.D.ii Recognize characteristics and structures of informational text, including: features such as sections, tables, graphs, timelines, bullets, numbers, and bold and italicized font to support understanding; **TEKS 3.6.C** Make, correct, or confirm predictions using text features, characteristics of genre, and structures; **TEKS 3.1.A** Listen actively, ask relevant questions to clarify information, and make pertinent comments; **TEKS 3.6.B** Generate questions about text before, during, and after reading to deepen understanding and gain information; **TEKS 3.11.B.ii** Develop drafts into a focused, structured, and coherent piece of writing by: developing an engaging idea with relevant details; **TEKS 3.11.C** Revise drafts to improve sentence structure and word choice by adding, deleting, combining, and rearranging ideas for coherence and clarity; **TEKS 3.11.D** Edit drafts using standard English conventions, including (x) punctuation marks, including apostrophes in contractions and possessives and commas in compound sentences and items in a series; (xi) correct spelling of words with grade-appropriate orthographic patterns and rules and high-frequency words.

LESSON AT A GLANCE

	Grouping	Time	Materials
Reading (35 min.)			
Introducing the Reading	Whole Group	10 min.	<input type="checkbox"/> Activity Page 14.1 <input type="checkbox"/> <i>Rattenborough's Guide to Animals</i>
Independent Reading	Independent	15 min.	
Discussing the Reading	Whole Group	10 min.	
Speaking and Listening (40 min.)			
Introducing the Read-Aloud	Whole Group	10 min.	<input type="checkbox"/> Activity Pages 3.2, 14.2 <input type="checkbox"/> <i>Rattenborough's Guide to Animals</i> <input type="checkbox"/> Animal foldable
Presenting the Read-Aloud	Whole Group	30 min.	
Writing (45 min.)			
Revising an Informational Paragraph	Independent	45 min.	<input type="checkbox"/> Activity Pages 13.3, 14.3, 14.4 <input type="checkbox"/> Animal foldable <input type="checkbox"/> Animal webs <input type="checkbox"/> Field Journals
Take-Home Material			
Informational Writing			<input type="checkbox"/> Activity Page 14.4

ADVANCE PREPARATION

Writing

- Have students gather the Animal Foldable (Activity Page 3.2); Animal Webs; and Field Journals from the unit.

Universal Access

- Have students share any experiences they may have had visiting a zoo. Discuss people who may work at the zoo to help keep the animals safe and healthy. Discuss what we need to know about animals to keep them safe and healthy in zoos but also in the wild. Ask, “How do we get this information?”
- Have students recall what they know about text features.

Start Lesson

Lesson 14: “Scientists Who Classify Animals” and “Vertebrates around the World”

Reading



Primary Focus: Students will use text features to quickly locate information about scientists who classify animals. **TEKS 3.9.D.ii; TEKS 3.6.C**

VOCABULARY FOR “SCIENTISTS WHO CLASSIFY ANIMALS”

- The following are vocabulary words used in this lesson. Preview the words with the students before the lesson and refer back to them at appropriate times. The words also appear in the glossary in the back of *Rattenborough’s Guide to Animals*.

zoologist, a scientist who studies animals and their characteristics

observe, to watch closely and carefully

TEKS 3.9.D.ii Recognize characteristics and structures of informational text, including: features such as sections, tables, graphs, timelines, bullets, numbers, and bold and italicized font to support understanding; **TEKS 3.6.C** Make, correct, or confirm predictions using text features, characteristics of genre, and structures.



**ENGLISH
LANGUAGE
LEARNERS**

Reading
Reading/Viewing Closely

Beginning

Ask students to point to text features in *Rattenborough's Guide to Animals* as you name them. Have them orally predict what they will find there. Read the text feature aloud. Have the students answer “Yes” or “No” if their prediction was correct.

Intermediate

Allow students to read and complete Activity Page 14.1 with a partner.

Advanced/ Advanced High

Encourage students to work independently on Activity Page 14.1.

ELPS 4.F

Challenge

Have students brainstorm additional text features the author could have included in the chapter. List the text feature and possible information that would be included in each text feature.

Support

Pull a small group aside and read the chapter aloud. Use the following Guided Reading Supports as you guide students through the chapter.

Vocabulary Chart for “Scientists Who Classify Animals”		
Type	Tier 3 Domain-Specific Words	Tier 2 General Academic Words
Vocabulary	zoologist	observe
Multiple-Meaning Core Vocabulary Words		observe
Saying and Phrases		

INTRODUCING THE READING (10 MIN.)

- Remind students that they have been reading and learning about how scientists classify animals. They have learned about characteristics of different animals.
- Tell students that today they will read a chapter entitled “Scientists Who Classify Animals” and learn about the scientists who study animal groups.
- Have students turn to Activity Page 14.1. Explain to students that they will use the text features in the chapter to make predictions about what they will learn in the chapter. Remind students that using text features will help them to locate information quickly and efficiently.
- Take a Text Feature Walk: Have students preview the chapter, looking for clues to what it is about. After each text feature listed, students will write a prediction about what they think they will learn about the text.

INDEPENDENT READING (15 MIN.)

- Students will read the chapter “Scientists Who Classify Animals” independently. While students are reading, they will analyze their before-reading prediction on Activity Page 14.1. Students will determine if their prediction was true or false. If their prediction was false, students will write a corrected version of each prediction.

Note: Pull a small group aside and read the chapter aloud. Use the following Guided Reading Supports as you guide students through the chapter.

Chapter 15 Scientists Who Classify Animals



Rattenborough, here once again! You have been learning about how scientists study the **characteristics** of living things. They **classify** all living things into one of five large groups called **kingdoms**. You have been learning a lot about how animals are sorted into more specific groups within the animal **kingdom**.

The scientists who study animals and their **characteristics** are called **zoologists**. **Zoologists observe** animals to see the ways they are the same and the ways they are different. For example, **zoologists** discovered that some animals are **warm-blooded** and some are **cold-blooded**.

Zoologists also **classify** animals by whether or not they have a backbone. Animals with a backbone and a spinal cord are called **vertebrates**. Animals that do not have a backbone are called **invertebrates**. We learned that there are five groups of **vertebrates**—fish, birds, **amphibians**, **reptiles**, and **mammals**. The largest group of **vertebrates** is fish.

Zoologists also study other **characteristics** of animals. They study animal body parts and how they are alike or different. All animals need to breathe **oxygen**. But they may have different organs that help them breathe. Fish and young **amphibians** have **gills** that help them get **oxygen** out of the water. **Mammals**, **reptiles**, and adult **amphibians** get **oxygen** from the air using lungs.

GUIDED READING SUPPORTS

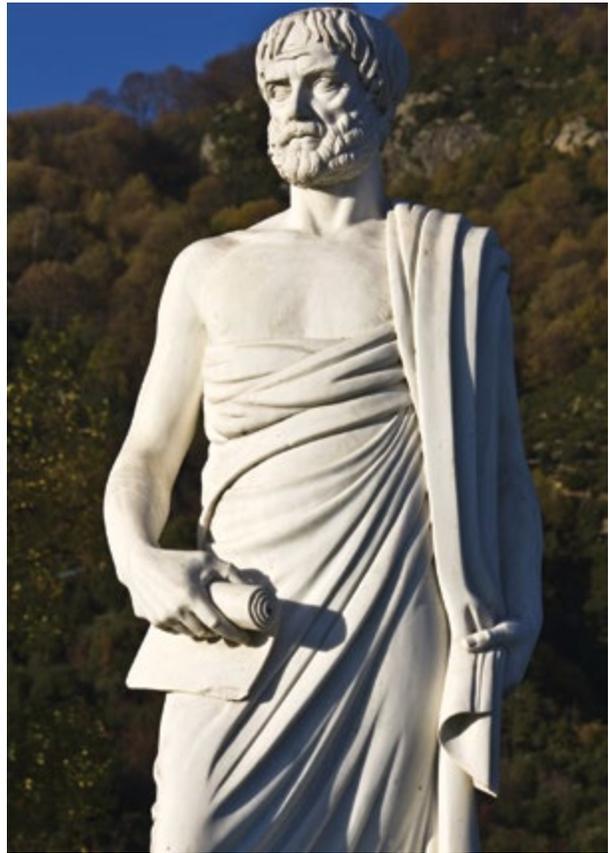
Page 120–121

- Read the title of the chapter together as a class: “Scientists Who Classify Animals.”
- Ask, “Where in *Rattenborough’s Guide to Animals* could we quickly find the definition of *zoologist*?”
 - » the glossary
- Ask students to find the word.
- Call on one student to identify where the word is and read the definition. Note for students that the plural form of the word listed after the definition, *zoologists*, appears in this chapter more often than the singular form, *zoologist*.

- Follow the same procedure for *observe*. Note that another form of the word *observe* listed after the definition appears in the chapter—*observing*.
- Ask students to read **page 120** to learn one thing zoologists discovered about animals.
- When students have finished reading, restate the question above and ask students to answer.
 - » Zoologists discovered that some animals are warm-blooded and some are cold-blooded.
- Ask students to read **page 121** to find the answer to the question: “What are three things zoologists do?”
- When students have finished reading, restate the question above and ask students to answer.
 - » Zoologists classify animals by whether or not they have a backbone, study other characteristics of animals like body parts, and study how different animal babies are born and cared for.

Zoologists also study how different animal babies are born and cared for. Do you remember which group of animal mothers feed their babies milk from their own bodies?

Everything we have learned about animals was discovered by scientists. There have been many scientists who have been interested in animals since long, long ago. A Greek man named Aristotle first **classified** animals over 2,000 years ago. He wrote a book called *A History of Animals*. As scientists have discovered and learned more about animals, the **classification** system has changed. There is still much to learn about animals. After all, there are thousands of new animals yet to be discovered and **classified!**



A statue of Aristotle

Pages 122–123

- Ask students to read **pages 122–123** to learn who Aristotle was.
- When students have finished reading, restate the question above and ask students to answer.
 - » Aristotle was a Greek man who first classified animals over 2,000 years ago and wrote a book called *A History of Animals*.
- Ask, “Has the classification system for animals stayed the same over time? Which sentence on **page 122** answers the question?”
 - » No; as scientists have discovered and learned more about animals, the classification system has changed.

Every single day, scientists learn new facts about animals. Scientists even find new animals they didn't know existed. There is no end to new knowledge if you study living things!

Today, there are about one million scientists around the world who are studying and **classifying** animals, even as you read this. Every one of them spends the day **observing**, experimenting, and finding new information. This adds to our knowledge about the world we live in.



Do you remember which group of animals feed their babies milk from their own bodies?

124

125

Pages 122–123

- Ask students to read **pages 122–123** to themselves to find out what scientists are doing now.
- When students have finished reading, restate the question above and ask students to answer.
 - » Scientists are learning new facts about animals; studying and classifying animals; and observing, experimenting, and finding new information.



Check for Understanding

If students are unable to identify key information from text features, then pull them aside to review text features.

If you want to be a **zoologist** when you grow up, there is plenty to study. You never know when someone is going to learn something that changes the way we think about the world. Who knows? Maybe you will be the first to find a **feathered** fish or a flying snail. It may sound silly now, but a hundred years ago, nobody knew that whales **communicated** with each other. What will you discover?



*What kind of animals would you like to **observe** if you were a **zoologist**?*

Pages 126–127

- Ask students to read **pages 126–127** to themselves. Ask them to read the caption on **page 127** and turn to a partner to discuss what kind of animal they would like to observe if they were a zoologist.

DISCUSSING THE READING (10 MIN.)

1. **Literal.** Have scientists learned all there is to know about animals? Why or why not?
 - » No; there is still much to learn, and scientists discover new animals all the time.
2. **Literal.** What is the name for scientists who study animals and their characteristics in order to classify them?
 - » zoologists
3. **Literal.** Why do scientists classify animals?
 - » to study and compare the diverse groups of animals
4. **Literal.** Who was the first to classify animals over 2,000 years ago?
 - A. a zoologist
 - B. a biologist
 - C. Aristotle
 - D. Newton
 - » C. Aristotole

Lesson 14: “Scientists Who Classify Animals” and “Vertebrates around the World”

Speaking and Listening



Primary Focus: Students will ask and answer questions about vertebrates around the world. **TEKS 3.1.A; TEKS 3.6.B**

VOCABULARY FOR “VERTEBRATES AROUND THE WORLD”

- The following are core vocabulary words used in this lesson. Preview the words with the students before the lesson. Students are not expected to be able to use these words immediately, but with repeated exposure throughout the lessons they will acquire a good understanding of most of the words. Students may also keep a “unit dictionary” notebook along with definitions, sentences, and/or other writing exercises using these vocabulary words.

delta, a triangular area found where a stream or river flows into a bigger body of water and deposits mud and sand in a fan-shaped area (**deltas**)

TEKS 3.1.A Listen actively, ask relevant questions to clarify information, and make pertinent comments; **TEKS 3.6.B** Generate questions about text before, during, and after reading to deepen understanding and gain information.

reproduction, the process that lets a plant or animal produce offspring, or young, of their own kind

Vocabulary Chart for “Vertebrates Around the World”		
Type	Tier 3 Domain-Specific Words	Tier 2 General Academic Words
Vocabulary	delta	reproduction
Multiple-Meaning Core Vocabulary Words	delta	reproduction
Sayings and Phrases		



INTRODUCING THE READ-ALOUD (10 MIN.)

TEKS 3.6.B

- Ask, “Who can tell me what we have been learning about?” Review with students the terms *classification*, *cold-blooded/warm-blooded*, and *vertebrate/invertebrate*. “What groups of animals have we been learning about?”
- Remind students that, in the previous lessons, they learned about five groups of vertebrate animals. Ask students to name the groups.
 - » amphibians, mammals, birds, fish, reptiles
- Review with students the section on Activity Page 3.2 that has been filled in during previous lessons, discussing the characteristics of each vertebrate group. If any spaces in the foldable are still empty, discuss with students what information can be filled in.
- Remind students that representatives of all five vertebrate groups, as well as invertebrates, live in their community. There may be many animals that students have seen in their neighborhoods, in nearby parks, or on trips to other places near where they live.
- Ask, “Who can think of an animal that lives in our community? How would you classify this animal?” Ask students to share their thinking and decision-making about how to classify the animals with questions such as “Why do you think so?” and “What evidence do you have for classifying a squirrel as a mammal?” Accept both vertebrate and invertebrate animals as part of this discussion.
- Explain to students that animals from these five vertebrate groups live all over the world in many different habitats. Tell students that today they will be hearing about vertebrate animals in seven very different places. Explain that good readers ask and answer questions when they read. Explain that they will be stopping during the Read-Aloud to record questions they have as well as answer questions about the topic.

Activity Page 3.2



Support

If students have difficulty thinking of an example for one of the groups, you may wish to offer them clues to help them remember an animal that may be familiar.



TEKS 3.6.B Generate questions about text before, during, and after reading to deepen understanding and gain information.

- Have students turn to Activity Page 14.2. Explain that they will record their questions and answers on Activity Page 14.2.

Activity Page 14.2



**ENGLISH
LANGUAGE
LEARNERS**

Speaking and Listening Listening Closely

Beginning

Pose questions that have yes or no answers; for example, “Is the black Alpine salamander an amphibian?”

Intermediate

Allow students to confer with a partner before adding to the class discussion during the Read-Aloud.

Advanced/ Advanced High

Encourage students to use complete sentences when participating in the class discussion during the Read-Aloud.

ELPS 2.1

PRESENTING THE READ-ALoud (30 MIN.)

- Tell students to turn to the table of contents and locate today’s chapter, “Vertebrate Animals Around the World.” Have students turn to the first page of the chapter and follow along during the Read-Aloud.



Student Reader pages 128–129 All My Best Friends Represent Vertebrates!

All My Best Friends Represent
Vertebrates! Now that you’ve learned
about each vertebrate group, you
know about many characteristics that

taxonomists use to classify these animals. Who wants to try naming the five groups of animals that make up vertebrates in the animal kingdom?

Why do scientists classify organisms? Because there are so many living things on Earth, it gives scientists a way of studying them by showing their relationships. And how do they classify them? They look for common, or shared, characteristics. What are some of these common characteristics? You’ve learned that some animals are warm-blooded and others are cold-blooded. Some are vertebrates and others are invertebrates. You’ve also learned that there are many other ways to classify animals into smaller and smaller groups. The scientific classification system, taxonomy, uses these names—kingdom, phylum, class, order, family, genus, and species—to describe the groups from largest to smallest.

When they classify animals, taxonomists compare and contrast animal habitats, physical characteristics, skin coverings, feeding habits, and reproduction. Today we’re going to look at seven different locations on Earth, one on each of the continents of the world. We can use our new skills to practice classifying a few of the animals that live in each place.

- Question and Answer Pause: As a whole group, brainstorm questions after listening to the text about vertebrates. Record responses on the board as a model for students.

Vertebrate Animals Around the World

Read aloud

All My Friends Represent Vertebrates! Now that you've learned about each vertebrate group, you know about many characteristics that scientists use to classify these animals. Who wants to try naming the five groups of animals that make up vertebrates in the animal kingdom?

Why do scientists classify organisms? Because there are so many living things on Earth, it gives scientists a way of finding them by showing their relationships. And how do they classify them? They look for common, or shared, characteristics. What are some of these common characteristics? You've learned that some animals are warm-blooded and others are cold-blooded. Some are vertebrates and others are invertebrates. You've also learned that there are many other ways to

classify animals into smaller and smaller groups. The scientific classification system, sometimes, uses these names—kingdom, phylum, class, order, family, genus, and species—to describe the groups from largest to smallest.

When they classify animals, scientists compare and contrast animal habitats, physical characteristics, diet coverings, feeding habits, and reproduction. Today we're going to look at seven different locations on planet Earth, one on each of the continents of the world. We can use our new skills to practice classifying a few of the animals that live in each place.

First stop, the American desert! Here are some examples of animals you may find in the North American desert: the western diamondback rattlesnake, the Gila woodpecker, the desert bighorn sheep in the background, the roadrunner, the banded Gila monster, the bobcat, and the turkey vulture. Just by looking at these animals, are you able to classify them? The bobcat and the sheep are both covered in fur, so we know they are mammals. What about the Gila monster? It's a reptile, one of only two venomous lizards in America. What kind of animal is the rattlesnake, which is also covered in scales? Yes, it is a reptile—it is

Student Reader pages 129–130 Sonoran Desert

First stop, the American desert!
Here are some examples of animals you may find in this North American desert: the western diamondback

rattlesnake, the Gila [hee-luh] woodpecker, the desert bighorn sheep in the background, the roadrunner, the banded Gila monster, the bobcat, and the turkey vulture. Just by looking at these animals, are you able to classify them? The bobcat and the sheep are both covered in fur, so we know they are mammals. What about the Gila monster? It's a reptile, one of only two venomous lizards in America. What kind of animal is this rattlesnake, which is also covered in scales? Yes, it is a reptile—it is venomous as well, and it is one of the few reptiles that gives birth to live young.

- Question and Answer Pause: As a whole group, brainstorm questions after listening to the text about the Sonoran Desert. Record questions in Box 1 on Activity Page 14.2.
- Think-Pair-Share. With a partner, students will answer the following question and write their response in Box 2 on Activity Page 14.2:
 - How do you know the roadrunner is not a reptile?

South American Rainforest

both belong to the same group. Who can name that group? Great—they're mammals. We can tell because they are covered in fur. As you have learned, mammals give birth to live babies. Does this dark, hairy spider belong to one of the vertebrate groups we've studied? No, the pink-toed tarantula is an invertebrate. It's cold-blooded, has no mouthparts, and is a member of the arachnid group.

Great job! Let's move on to the Amazon Rainforest in South America. Native to the rainforest are the spotted jaguar, the green anaconda, the three-toed sloth, the red-bellied piranha, the blue-and-yellow macaw, the pink-toed tarantula, and the curatou, which looks like a small crocodile. The anaconda and the curatou are both covered in scales. The bird should be an easy one to spot—the only one with wings and feathers in the scene. And the piranha should be familiar as all of you—these are Pedro's fish relatives. The jaguar and sloth

Student Reader pages 130–131 Rainforest

Great job! Let's move on to the Amazon rainforest in South America. Native to the rainforest are the spotted jaguar, the green anaconda,

the three-toed sloth, the red-bellied piranha, the blue-and-yellow

macaw, the pink-toed tarantula, and the caiman, which looks like a small crocodile. The anaconda and the caiman are both covered in scales. The bird should be an easy one to spot—the only one with wings and feathers is the macaw. And the piranha should be familiar to all of you—these are Paolo’s fish relatives. The jaguar and sloth both belong to the same group. Who can name that group? Great—they’re mammals; we can tell because they are covered in fur. As you have learned, mammals give birth to live babies. Does this dark, hairy spider belong to one of the vertebrate groups we’ve studied? No, the pink-toed tarantula is an invertebrate. It’s cold-blooded, has an exoskeleton, and is a member of the arachnid group.

- Question and Answer Pause: With a partner, brainstorm questions after listening to the text about the rainforest. Record questions in Box 3 on Activity Page 14.2.
- Think-Pair-Share. With a partner, students will answer the following question and write their response in Box 4 on Activity Page 14.2:
 - Is the pink-toed tarantula a vertebrate or an invertebrate? Why do you think so?
 - » It’s an invertebrate because it has an exoskeleton, which means it has no internal backbone; it has eight legs, which means it is an arachnid.



Alpine Mountain

Let’s look at some of the animals that make their homes high in the Alpine mountains of Europe. What do you see in the background, there on the rocks? The rock ptarmigan (tahr-mi-guhn) lives in the Alps. So does the black Alpine salamander, the marmot, the golden eagle, the Apollo butterfly, and the pine marten. Which one do you think is not a member of any of the vertebrate groups we’ve studied? Yes, the butterfly is an invertebrate, and it is classified in the largest group of animals on Earth, insects! The black Alpine salamander shares characteristics with both a lizard and a frog. Think about how you would classify it. It’s a more-skinned amphibian, but an unusual one that lives only

on land and gives birth to fully developed live young. What two-legged, feathered animals do you see? Yes, the birds revealed are the ptarmigan and the golden eagle. And mammals—can there any far-cooler mammals in the Alps? Yes, the marmot and the pine marten.

The Ganges (gan-jee) Delta of India, on the continent of Asia, is home to swamps, forests, and coasts. The animals that live there include the black-crowned night heron, the wild boar, the Olive Ridley turtle, the Ganges River dolphin, the Indian python, the blue-crowned kingfisher, the mangrove crocodile, and the shark. Can you spot the odd **blackbird tegu** here?



The Ganges Delta

Student Reader pages 132–133 Alpine Mountains

Let’s look at some of the animals that make their homes high in the Alpine mountains of Europe. What do you see in the background, there on the rocks?

The rock ptarmigan [*tahr-mi-guhn*] lives in the Alps. So does the black Alpine salamander, the marmot, the golden eagle, the Apollo butterfly, and the pine marten. Which one do you think is not a member of any of the vertebrate groups we’ve studied? Yes, the butterfly is an invertebrate and is classified in the largest group of animals on Earth: insects! The black Alpine salamander shares characteristics with both

a lizard and a frog. Think about how you would classify it. It's a moist-skinned amphibian, but an unusual one that lives only on land and gives birth to fully developed live young. What two-legged, feathered animals do you see? Yes, the birds pictured are the ptarmigan and the golden eagle. And mammals—are there any fur-covered creatures in the Alps? Yes, the marmot and the pine marten.

- Question and Answer Pause: Independently, brainstorm questions after listening to the text about the Alpine mountains. Record questions in Box 5 on Activity Page 14.2.
- Independently, students will answer the following question and write their responses in Box 6 on Activity Page 14.2:
 - The black Alpine salamander's method of reproduction makes it a pattern-breaker. How is its reproduction process different from other amphibians?
 - » It lives its entire life on land and gives birth to live babies; other amphibians lay eggs in wetlands and live part of their lives in water.



Alpine Mountains

Let's look at some of the animals that make their homes high in the Alpine mountains of Europe. What do you see in the background, there on the rocks? The rock ptarmigan (left) and golden eagle in the Alps. So does the black Alpine salamander, the marmot, the golden eagle, the Alpine butterfly, and the pine marten. Which one do you think is not a member of any of the vertebrate groups we've studied? Yes, the butterfly is an invertebrate, and is classified in the largest group of animals on Earth: insects! The black Alpine salamander shares characteristics with both a lizard and a frog. Think about how you would classify it. It's a moist-skinned amphibian, but an unusual one that lives only

on land and gives birth to fully developed live young. What moist-skinned, fur-covered animals do you see? Yes, the black ptarmigan and the golden eagle. And mammals—are there any fur-covered creatures in the Alps? Yes, the marmot and the pine marten.

The Ganges [gan-jeez] Delta of India, on the continent of Asia, is home to swamps, forests, and creeks. The animals that live there include the black-crowned night heron, the wild boar, the Olive Ridley turtle, the Ganges River dolphin, the Indian python, the blue-eared kingfisher, the mugger crocodile, and the chital. Can you spot the cold-blooded reptile here?

The Ganges Delta



Student Reader pages 133–134

The Ganges Delta

The Ganges [gan-jeez] Delta of India, on the continent of Asia, is home to swamps, forests, and creeks. The animals that live there include the

black-crowned night heron, the wild boar, the Olive Ridley turtle, the Ganges River dolphin, the Indian python, the blue-eared kingfisher, the mugger crocodile, and the chital. Can you spot the cold-blooded reptiles here? You bet—the crocodile, the turtle, and the python are all representatives of the reptile group. Which ones are warm-blooded mammals? Yes, the boar, or wild pig, and the chital, a common deer of the area. The polluted waters of the Ganges River have ruined the habitat for a number of animals, and this river dolphin is endangered because of the river's pollution. Only one of four river dolphin species in the world, it is a mammal just like its ocean-loving relatives. The Ganges River dolphin is sometimes called the blind dolphin; each of its eyes lacks a lens to give it clear vision, but it still uses its eyes

to help it find direction. And, of course, our feathered friends of the sky—the kingfisher and the heron—are both birds.



You bet—the crocodile, the turtle, and the python are all representatives of the **reptile** group. Which ones are **warm-blooded mammals**? Yes, the lion, or wild pig, and the ibex, a common deer of the area. The polluted waters of the Congo River have ruined the **habitat** for a number of animals, and the river dolphins is endangered because of the river's pollution. Only one of four river dolphin species in the world, it is a **mammal** just like its ocean-loving relatives. The Congo river dolphins is sometimes called the blind dolphin, each of its eyes lacks a lens so give it their name, but it still uses its eyes to help it find direction. And, of course, our **feathered** friends of the sky—the kingfisher and the heron—were back here.

African savanna

I bet you've seen pictures of the many large game animals that make their homes in the savannas of Africa. They include the giraffe, the elephant, the hyena, the zebra, the lion, the cobra, and the impala. All of these animals belong to the same group of **vertebrate** animals. What are they? Yes, **mammals**! Birds, like the hornbill and the quelea [kwee-lee-uh], live there as well. And venomous reptiles, snakes like the gaboon and the black mamba, are deadly to their prey in the savannas.

134 135

Student Reader page 135 African Savanna

I bet you've seen pictures of the many large game animals that make their homes in the savannas of Africa. They include the giraffe, the elephant, the

hyena, the wildebeest, the lion, the zebra, and the impala. All of these animals belong to the same group of vertebrate animals. What are they? Yes, mammals! Birds, like the hornbill and the quelea [kwee-lee-uh], live there as well. And venomous reptiles, snakes like the gaboon and the black mamba, are deadly to their prey in the savannas.



The Great Barrier Reef of Australia is home to many different sea animals. Animals here include the bottlenose dolphin, the manatee, the blue spotted stingray, the box jellyfish, the black-tipped reef shark, and the leatherback sea turtle. Is the jellyfish a fish? Who remembers? No, in spite of its name, the jellyfish is an **invertebrate** and has no gills. Be sure to notice the jellyfish's many long tentacles. So, do you think the anemonefish is a fish or not? Yes, it is indeed a fish, also called the clown fish because of its colorful markings.

and it lives among the tentacles of another **invertebrate**, the sea anemone. This sea turtle belongs to the **reptile** group, and you probably remember that the dolphin is a milk-producing **mammal** that breathes with its lungs. How about the shark? Yes, it is a fish too. It breathes through **gills**, and unlike the dolphin, does not provide milk for its young. And the stingray? A fish, yes—a relative of the shark.

Finally, let's look at Antarctica, the southernmost continent and one of the coldest places on Earth. Emperor penguins live in its icy waters, along with blue whales and humpback whales. Leopard seals, albatrosses, and snow penguins spend half the year in darkness in this frozen coastal region. Only one **vertebrate** animal group is found on the land in Antarctica. What are they? That's right, **mammals** and birds. You learned that these two groups share another common characteristic as well. **Mammals** and birds are both **warm-blooded**. The energy to the food they eat is used to warm their bodies and keep them from freezing.

These Antarctic animals **survive** in harsh frozen conditions, and they are largely dependent on **ice**, a very thin, ice-like crustaceans with **vertebrates** that live in the same harsh conditions. They are the primary or main source of food for the **predators** of Antarctica.

Coral reef

136 137

Student Reader pages 136–137 Coral Reef

The Great Barrier Reef of Australia is home to many different sea animals. Animals here include the bottlenose dolphin, the anemonefish, the blue-

spotted stingray, the box jellyfish, the black-tipped reef shark, and the leatherback sea turtle. Is the jellyfish a fish? Who remembers? No, in spite of its name, the jellyfish is an invertebrate and has no gills. Be sure to notice the jellyfish's many long tentacles. So, do you think the anemonefish is a fish or not? Yes, it is indeed a fish, also called the clown fish because of its colorful markings, and it lives among the tentacles of another invertebrate, the sea anemone. The sea turtle belongs to the reptile group, and you probably remember that the dolphin is a milk-producing mammal that breathes with its lungs. How about the shark? Yes, it is a fish too. It breathes through gills and, unlike the dolphin, does not provide milk for its young. And the stingray? A fish, too—a relative of the shark.

- Question and Answer Pause: Independently, brainstorm questions after listening to the text about the coral reef. Record questions in Box 7 on Activity Page 14.2.
- Independently, students will answer the following question and write their responses in Box 8 on Activity Page 14.2:
 - Two of the animals shown are the black-tipped reef shark and the blue-spotted stingray. To what vertebrate group do they belong, and what classifies them in this group?
 - » They're fish: they are fully aquatic; they breathe through gills; they have skeletons made of cartilage.

<p>The Great Barrier Reef of Australia is home to many different sea animals. Animals here include the bottlenose dolphins, the sevenshark, the blue spotted stingray, the box jellyfish, the black-tipped reef shark, and the humpback sea turtle. Is the jellyfish a fish? What about the shark? No, in spite of its name, the jellyfish is an invertebrate and has no gills. Be sure to notice the jellyfish's many long tentacles. So, do you think the sevenshark is a fish or not? Yes, it is indeed a fish, also called the clown fish because of its colorful markings.</p>  <p><i>Coral reef</i></p> <p>136</p>	<p>and is even among the tentacles of another invertebrate, the sea anemone. The sea turtle belongs to the reptile group, and you probably remember that the dolphin is a mammal because it breathes with its lungs. How about the shark? Yes, it is a fish too. It breathes through gills, and unlike the dolphins, does not provide milk for its young. And the stingray? A fish, too—a relative of the shark.</p> <p>Finally, let's look at Antarctica, the southernmost continent and one of the coldest places on Earth. Emperor penguins live in its icy waters, along with blue whales and humpback whales. Leopard seals, skua, and snow petrels spend half the year in darkness in this frozen coastal region. Only two vertebrate animal groups are found on the land in Antarctica. What are they? That's right, mammals and birds. You learned that these two groups also share another common characteristic as well. Mammals and birds are both warm-blooded. The energy in the food they eat is used to warm their bodies and keep them from freezing.</p> <p>These Antarctic animals survive in harsh frozen conditions, and they are largely dependent on krill, tiny shrimp-like crustaceans with exoskeletons that live in the waters beneath the ice packs. They are the primary, or main, source of food for the predators of Antarctica.</p> <p>137</p>
--	--

Student Reader page 137 Antarctic Ice Shelf

Finally, let's look at Antarctica, the southernmost continent and one of the coldest places on Earth. Emperor penguins live in its icy waters, along with blue whales and humpback whales. Leopard seals, skua, and snow petrels spend half the year in darkness in this frozen coastal region. Only two vertebrate animal groups are found on the land in Antarctica. What are they? That's right, mammals and birds. You learned that these two groups also share another common characteristic as well. Mammals and birds are both warm-blooded. The energy in the food they eat is used to warm their bodies and keep them from freezing.

These Antarctic animals survive in harsh frozen conditions, and they are largely dependent on krill, tiny shrimp-like crustaceans with exoskeletons that live in the waters beneath the ice packs. They are the primary, or main, source of food for the predators of Antarctica.

with blue whales and humpback whales. Leopard seals, skua, and snow petrels spend half the year in darkness in this frozen coastal region. Only two vertebrate animal groups are found on the land in Antarctica. What are they? That's right, mammals and birds. You learned that these two groups also share another common characteristic as well. Mammals and birds are both warm-blooded. The energy in the food they eat is used to warm their bodies and keep them from freezing.

These Antarctic animals survive in harsh frozen conditions, and they are largely dependent on krill, tiny shrimp-like crustaceans with exoskeletons that live in the waters beneath the ice packs. They are the primary, or main, source of food for the predators of Antarctica.



Antarctic ice shelf

As you can imagine, living in the extreme cold of Antarctica presents a major challenge to cold-blooded animals. A few fish have adapted in an interesting way to survive in the cold waters surrounding Antarctica. The icefish has a special chemical in its body that acts like an antifreeze and keeps it from freezing!

A few invertebrates have found other interesting ways to survive the cold temperatures of Antarctica. Some mites survive by living in the fur of mammals or in the feathers of birds, close to the warmth of their warm-blooded hosts. Now you've seen a sample of the animals that live on each of the seven continents.

There are so many interesting facts about Earth's animals! Before I go, let's each share one interesting fact that you have learned about vertebrate animals. Think for a moment about the interesting fact that you wish to share. Turn to your neighbor and share your vertebrate fact.

It's been so much fun for me to be with you again. I'm so proud of all that you've learned about the animal kingdom over the past few days. I'll look forward to seeing you again soon. In the meantime, I encourage you to keep your eyes open. As you see an animal or read about an animal, think about how you would classify it. Next time we're together, perhaps you can tell me about your discoveries. Until then, good-bye!

Student Reader page 138–139 Rattenborough Waving Good-bye

As you can imagine, living in the extreme cold of Antarctica presents a major challenge to cold-blooded animals. A few fish have adapted in an

interesting way to survive in the cold waters surrounding Antarctica. The icefish has a special chemical in its body that acts like an antifreeze and keeps it from freezing!

A few invertebrates have found other interesting ways to survive the cold temperatures of Antarctica. Some mites survive by living in the fur of mammals or in the feathers of birds, close to the warmth of their warmblooded hosts. Now you've seen a sample of the animals that live on each of the seven continents.

There are so many interesting facts about Earth's animals! Before I go, let's each share one interesting fact that you have learned about vertebrate animals. Think for a moment about the interesting fact that you wish to share. Turn to your neighbor and share your vertebrate fact.

It's been so much fun for me to be with you again. I'm so proud of all that you've learned about the animal kingdom over the past few days. I'll look forward to seeing you again soon. In the meantime, I encourage you to keep your eyes open. As you see an animal or read about an animal, think about how you would classify it. Next time we're together, perhaps you can tell me about your discoveries. Until then, good-bye!

- On Activity Page 14.2, have students list additional questions they may have about the unit.
- Gather all questions for students to independently research if time permits.

Lesson 14: “Scientists Who Classify Animals” and “Vertebrates around the World”

Writing



Activity Pages
13.3 and 14.3



Activity Page 14.4



**ENGLISH
LANGUAGE
LEARNERS**



Writing
Writing

Beginning

Provide 1:1 prompting and support as students draft and revise their paragraphs. Adjust your assistance as needed.

Intermediate

Provide support as needed.

Advanced/ Advanced High

Encourage students to work independently, writing their drafts in complete sentences and revising to add details.

ELPS 5.E; ELPS 5.F



Primary Focus: Students will continue drafting an informative writing piece about an animal’s characteristics and classification, clearly stating ideas, facts, and details. **TEKS 3.11.B.ii; TEKS 3.11.C; TEKS 3.11.D.x–xi**

REVISING AN INFORMATIONAL PARAGRAPH (45 MIN.)



TEKS 3.11.C; TEKS 3.11.D.x–xi

- Have students gather their animal papers: animal foldable, animal webs, field journal, and Activity Page 13.3.
- Remind students that they have completed the planning and drafting step of the writing process and that today they are going to complete the revising step.
- Have students reread their drafts. Tell students that they are going to use a Revision Checklist (Activity Page 14.3) to help them to know what other changes need to be made to the paragraph.
- “Who can tell me what *revise* means?” Remind students that the word *revise* means “change” and is a sub-step of the drafting step. Remind students that writers often revise many, many times before they are able to call their final manuscript “finished.” Remind students that revising is somewhat different from editing: revising often includes making changes to the content and/or the order of the content, whereas editing often includes making corrections to grammar, punctuation, and spelling according to the rules of Standard English. Tell students that they will complete the editing step the next time they meet to work on writing.
- Read aloud Activity Page 14.3 to students. Have students look at their drafts again and answer the questions on the Revision Checklist to see if there are any necessary content revisions to be made to their paragraphs.
- Explain that, with an informative paragraph, sometimes the sentences may be rearranged to flow better. You may wish to write the supporting sentences onto strips and move them around to see which order helps the paragraph flow best.



TEKS 3.11.B.ii Develop drafts into a focused, structured, and coherent piece of writing by: developing an engaging idea with relevant details; **TEKS 3.11.C** Revise drafts to improve sentence structure and word choice by adding, deleting, combining, and rearranging ideas for coherence and clarity; **TEKS 3.11.D** Edit drafts using standard English conventions, including (x) punctuation marks, including apostrophes in contractions and possessives and commas in compound sentences and items in a series; (xi) correct spelling of words with grade-appropriate orthographic patterns and rules and high-frequency words.

- Once revisions have been decided upon, remind students that the last sub-step of the drafting step is to rewrite a second draft of their paragraphs, incorporating the changes made during the revision sub-step. Have students turn to Activity Page 14.4. As students rewrite their paragraphs, remind them to use capital letters at the beginning of their sentences, appropriate punctuation at the end, and commas between things in a series.
- Have students think more about a title. Tell them that they may wish to write a title at the top of their second drafts, but that they may keep thinking about other title ideas. Tell students that they will complete the next step of the writing process—editing—the next time they meet to work on writing together, and that they may decide on a final title then.

- **“The Coolest Animal Group”**

Frilled dragons, one of my favorite animals, are classified by scientists as reptiles. First, they are grouped in the reptiles group because they are cold-blooded. Because frilled dragons do not have a source of internal heat, like you and I do, they need a source of external heat, such as the sun or a heat lamp. Another reason frilled dragons are in the reptile group is that they lay eggs instead of giving birth to live young. Reptiles are also vertebrates, which is why they are grouped together into one group. Finally, frilled dragons have scaly skin like other reptiles, instead of fur or feathers. These are the reasons that frilled dragons are categorized as reptiles, and I hope to have one of these awesome reptiles as a pet someday!

- If time permits, have students present their informative writing pieces.

End Lesson

Lesson 14: “Scientists Who Classify Animals” and “Vertebrates around the World”

Take-Home Material

INFORMATIONAL WRITING

- Have students continue working on Activity Page 14.4.

Support

You may wish to model this step of the writing process for some students who are not ready to complete it independently. You may also wish to have students work with partners or in groups, especially when completing the Revision Checklist. Share this informative paragraph in its entirety.

Activity Page 14.4



Pausing Point 2

Note to Teacher

You have now completed the Animal Classification unit. Before completing the end of unit assessment, it is recommended that you pause here and spend a day reviewing, reinforcing, or extending the material taught.

You may do the activities in any order or combination, using whole class or small groups to meet the needs of the students.

ACTIVITIES

Key Vocabulary Brainstorming

Materials: Chart paper, chalkboard, or whiteboard

- Give students a key domain concept or vocabulary word such as *shed*. Have them brainstorm everything that comes to mind when they hear the word, such as *cast off, skin, grow, molt*, etc. Record students' responses on a piece of chart paper, a chalkboard, or a whiteboard for reference.

Bird Study

Materials: Books about local birds; bird feeder, bird food

- You may wish to study some common local birds so that students recognize the birds in their area. Then, you may wish to hang a bird feeder near a classroom window so that students can observe this group of animals feeding. Students may record their observations in a notebook.

Animal Groups Bulletin Board

Materials: Bulletin board; drawing paper, drawing materials; magazines

- Tell the class or a group of students that together they are going to add to the animal groups bulletin board they created earlier to help them remember what they have learned in this domain. Have students brainstorm important information about the groups of animals they have learned. Have each student choose one idea to draw a picture of and ask him or her to write a caption for the picture. Post students' drawings in the categories they describe. (Warm-blooded would go in the Mammals or Birds section, for example.) You may want to have more than one student draw/write about each concept. Then, have students bring in images or cut out images of animals from each of the groups and post those onto the bulletin board as well.

Venn Diagram

Materials: Activity Page PP.5; chart paper, chalkboard, or whiteboard

- Tell students that together you are going to compare and contrast two things or animals they have learned about by asking how they are similar and how they are different. Use Activity Page PP.5 to list two items or animals at the top of the diagram and to capture information provided by students. Choose from the following list, or create a pair of your own:
 - insects and arachnids
 - amphibians and reptiles
 - birds and fish
 - mammals and humans
 - an object in the classroom and an organism outside the window
- You may wish to prepare several copies of the Venn diagram to compare and contrast several things or animals. You may also wish to have students use these diagrams as brainstorming information for further writing.
- You may wish to have some students use Activity Page PP.5 to complete this activity independently.
- You may wish to have some students create a three-way Venn diagram to compare and contrast three things or animals (for example, carnivores, omnivores, and herbivores; amphibians, reptiles, and birds; etc.).

Create a Graphic

Materials: Digital Projection: DPU2.L2.7

- Have students create a different style of visual representation to show how many invertebrates there are on Earth compared to vertebrates (for example, a pie graph, a bar graph, etc.)

Writing Prompts

Materials: Paper and pencil

- Students may be given an additional writing prompt such as the following:
- Some characteristics of a reptile (or fish, bird, or mammal) are . . .
- An invertebrate is _____.
- A vertebrate is _____.

- A mammal's covering is helpful because _____.
- I know a bird is a warm-blooded vertebrate because _____.
- The most interesting group of animals is . . . because _____.
- Compare and contrast an egret and a hippopotamus.
- Compare and contrast a snake and a lizard.
- Pretend you are a herpetologist and you have discovered a brand new species of animal. Describe the characteristics of the animal and how you would classify it based on those characteristics. Be sure to name this new animal!
- Imagine that you wake up one morning, and it is Morph Day! Animals in your neighborhood, pets, perhaps even family members, have morphed into different animal groups. Explain how the features that once classified one or a few of these animals into their correct groups have changed. Describe the changes and the new classifications based on these metamorphoses.

Riddles for Core Content

- **Present the following riddles to students:**
 - I am a large group in the classification system that scientists use to classify living things. Two of my types are called Plant and Animal. What am I called?
 - » a kingdom
 - I am an animal that eats mainly meat. What am I?
 - » a carnivore
 - I am an animal that eats only plants. What am I?
 - » an herbivore
 - I am an animal that eats both meat and plants. What am I?
 - » an omnivore
 - I am the trip that birds and some other animals take when they move from one climate to another. What am I called?
 - » migration
 - I am a cold-blooded animal that has rough, scaly skin. What am I?
 - » a reptile

- I am a vertebrate animal whose body is covered in feathers, has wings for flying, and lays eggs in a nest I make for my young. What am I?
 - » a bird

- I am an animal group that has hair or fur. The females in this group give birth to live babies and make milk in their bodies to feed their young. What animal group am I?
 - » mammals

Unit-Related Trade Book or Student Choice **TEKS 3.5**

Materials: Trade book

- Read an additional trade book to review a particular concept. You may also choose to have students select a Read-Aloud to be heard again.
- If students listen to a Read-Aloud a second time, you may wish to have them take notes about a particular topic. Be sure to guide them in this important method of gathering information. You may wish to model how to take notes, construct an outline, etc.

Unit Assessment

PRIMARY FOCUS OF LESSON

Language

Students will use conventional spelling patterns when adding the suffix –es to root words. **TEKS 3.2.B.vii**

Reading

Students will read on-level stories with purpose and understanding. **TEKS 3.3.B; TEKS 3.9.D.ii**

Foundational Skills

Students will read with sufficient accuracy and fluency to support comprehension. **TEKS 3.4**

FORMATIVE ASSESSMENT

Activity Page 15.1 **Spelling Assessment** Use conventional spelling patterns. **TEKS 3.2.B.vii**

TEKS 3.2.B.vii Demonstrate and apply spelling knowledge by: spelling words using knowledge of suffixes, including how they can change base words such as dropping e, changing y to i, and doubling final consonants; **TEKS 3.3.B** Use context within and beyond a sentence to determine the meaning of unfamiliar words and multiple-meaning words; **TEKS 3.9.D.ii** Recognize characteristics and structures of informational text, including: features such as sections, tables, graphs, timelines, bullets, numbers, and bold and italicized font to support understanding; **TEKS 3.4** Use appropriate fluency (rate, accuracy, and prosody) when reading grade-level text.

LESSON AT A GLANCE

	Grouping	Time	Materials
Language (25 min.)			
Spelling Assessment	Whole Group	25 min.	<input type="checkbox"/> Activity Page 15.1 <input type="checkbox"/> pens
Reading (50 min.)			
Student Skills Assessment	Independent	50 min.	<input type="checkbox"/> Activity Page 15.2
Reading (20 min.)			
Small Group: Remediation	Small Group	20 min.	<input type="checkbox"/> <i>Rattenborough's Guide to Animals</i>
Foundational Skills (25 min.)			
Optional Fluency Assessment: "Piranhas"	Independent	25 min.	<input type="checkbox"/> Activity Page 15.3

ADVANCE PREPARATION

Reading

- Predetermine small groups for Small Group: Remediation.

Note to Teacher

For the Student Skills Assessment, students will not read out of their Readers but rather from Activity Page 15.2, where the selections have been printed.

Start Lesson

Lesson 15: Unit Assessment

Language

TEKS 3.2.B.vii



SPELLING ASSESSMENT (25 MIN.)

TEKS 3.2.B.vii

Activity Page 15.1



- Have students turn to Activity Page 15.1 for the spelling assessment.
- If you would like to have students use pens, this is the time to pass them out.
- Call out each word one at a time in the following manner: say the word, say a sentence with the word in it, and then say the word again.
- Tell students that, at the end, you will go back through the list once more.

1. puppy	8. dry
2. penny	9. hurry
3. study	10. marry
4. carry	Challenge Word: <i>along</i>
5. butterfly	Challenge Word: <i>put</i>
6. lady	
7. bunny	

- **TEKS 3.2.B.vii** Demonstrate and apply spelling knowledge by: spelling words using knowledge of suffixes, including how they can change base words such as dropping e, changing y to i, and doubling final consonants.

- After you have called out all of the words, including the Challenge Words, go back through the list slowly, reading each word once more.
- Ask students to write the following sentence as you dictate it:
 - *The lady wants to see butterflies and a bunny.*
- Then, ask students to add –es to each of the root words. Tell students not to add the suffix to the Challenge Words.
- After students have finished, collect pens, if used.
- Tell students that you will now show them the correct spelling for each word so that they can correct their own work using a pencil.
- Say and write each word on the board, instructing students to correct their work by crossing out any incorrect spelling, then copying and writing the correct spelling next to it.
- Continue through all the words and then onto the dictated sentence.

Note: At a later time today, you may find it helpful to use the template provided at the end of this lesson to analyze students' mistakes. This will help you to understand any patterns that are beginning to develop or that are persistent among individual students.

Lesson 15: Unit Assessment

Reading

TEKS 3.3.B; TEKS 3.9.D.ii



STUDENT SKILLS ASSESSMENT (50 MIN.)

- Have students tear out Activity Page 15.2.
- Tell students they will read two selections printed on Activity Page 15.2. (They will not need their Readers.)
- Tell students that should they feel tired, it's a good idea to take a short, personal break. Explain to students that they need to respect the others in the classroom and stay seated, while quietly looking up to the ceiling, stretching their shoulders, and taking a deep breath or two.
- Tell students they should go right on to the second selection once they finish the first selection.
- Encourage students to do their best.

Activity Page 15.2



TEKS 3.3.B Use context within and beyond a sentence to determine the meaning of unfamiliar words and multiple-meaning words; **TEKS 3.9.D.ii** Recognize characteristics and structures of informational text, including: features such as sections, tables, graphs, timelines, bullets, numbers, and bold and italicized font to support understanding.

- Once students finish the assessment, encourage them to review their papers, rereading and looking over their answers carefully.
- Again, explain the necessity of respecting that not all classmates will finish at the same time, and, if they finish and have checked their papers, they should remain quiet for others to finish.

Lesson 15: Unit Assessment

✦ Reading TEKS 3.4



SMALL GROUP: REMEDIATION (20 MIN.)

- While working with students in small groups, please remember to choose activities that fit the needs of your students at the time.
 - **Small Group 1:** Work with these students on any weak areas that were exhibited on the assessment. You may wish to use Pausing Point activities with these students.
 - **Small Group 2:** Ask these students to read additional chapters at the end of *Rattenborough's Guide to Animals* or *More Classic Tales*. Alternately, you may ask students to complete any appropriate activities listed in the Pausing Points.

Lesson 15: Unit Assessment

✦ Foundational Skills TEKS 3.4



✦ OPTIONAL FLUENCY ASSESSMENT: "PIRANHAS" (25 MIN.)

TEKS 3.4

- You may wish to assess students' fluency in reading using any of the supplemental chapters that they have not yet read. Recording and Scoring Sheets have been specifically included for "Piranhas."

Instructions

- Turn to the text copy of "Piranhas" at the end of this lesson. This is the text copy students will read aloud.

✦ **TEKS 3.4** Use appropriate fluency (rate, accuracy, and prosody) when reading grade-level text.

Activity Page 15.3



- Ask the student to remove Activity Page 15.3 from his or her activity book. You will use this worksheet to mark a running record as you listen to the student read orally.
- Tell the student that you are going to ask him or her to read the selection aloud. Explain that you are going to keep a record of the amount of time it takes him or her to read the selection. Please also explain to the student that he or she should not rush but rather read at his or her own regular pace.
- Begin timing when the student reads the first word of the selection. If you are using a watch, write the exact Start Time, in minutes and seconds, on your record page. If you are using a stopwatch, you do not need to write down the Start Time since the stopwatch will calculate Elapsed Time. As the student reads the selection, make a running record on the copy with the student's name using the following guidelines:

Words read correctly	No mark is required.
Omissions	Draw a long dash above the word omitted.
Insertions	Write a caret (^) at the point where the insertion was made. If you have time, write down the word that was inserted.
Words read incorrectly	Write an "X" above the word.
Substitutions	Write the substitution above the word.
Self-corrected errors	Replace original error mark with an "SC."
Teacher-supplied words	Write a "T" above the word (counts as an error).

- When the student finishes reading the selection, write the exact Finish Time in minutes and seconds on your record sheet. Alternatively, if you are using a stopwatch, simply write down the Elapsed Time in minutes and seconds. In the interest of time, ask students to read only the first three paragraphs of text in either chapter. (Five minutes should be enough time to get a measurement on most students.) If the student does not read to the end, draw a vertical line on the record sheet to indicate how far he or she read. Also write down either the Finish Time or the Elapsed Time. After the student finishes reading orally, you may direct him or her to finish reading the remainder of the selection silently; you may also assess comprehension by having students answer the following comprehension questions orally.

1. **Literal.** Where do piranhas live?
 - » in South America in rivers, like the Amazon River, and lakes
 2. **Literal.** What makes piranhas dangerous fish?
 - » They have sharp teeth, they can bite much stronger than a great white shark, and they tear out a chunk of flesh when they bite.
 3. **Literal.** Describe a piranha's teeth
 - » They are razor-sharp and shaped like triangles.
 4. **Literal.** Why might people think piranhas are always attacking people?
 - » Some scary movies make it seem that way.
 5. **Literal.** What does the male piranha do for the eggs?
 - » guards them until they hatch
- Repeat this process for additional students. Scoring can be done later, provided you have kept running records and jotted down either the Elapsed Time or the Start Time and the Finish Time.

Guidelines for Calculating W.C.P.M. Scores

- If the reading was fairly accurate (< 10 uncorrected errors), you can get a rough (and easy) estimate of a student's W.C.P.M. score simply by noting the time and looking at the chart on Activity Page 15.3.
- To calculate a student's exact W.C.P.M. score, use the information you wrote down on the record sheet and follow the steps described below. The steps are also shown in graphic form on Activity Page 15.3. You will probably find it helpful to have a calculator available.
- First, complete the Words section of Activity Page 15.3.
- Count Words Read. This is the total number of words that the student read or attempted to read, up to the point where he or she stopped. It includes words that the student read correctly as well as words that the student read incorrectly or skipped over. If the student attempted to read the whole selection, use 344 words total. If the student did not finish the selection, you will need to count the number of words that the student actually attempted to read. Write the count for Words Read in the matching box on Activity Page 15.3.
- Count the Uncorrected Mistakes noted in your running record. This includes words read incorrectly, omissions, substitutions, and words that you had to supply. Write the total in the box labeled Uncorrected Mistakes on Activity Page 15.3. (A mistake that is corrected by the student is not counted as a mistake; the student is penalized for the time he or she lost making the correction, but not for the initial mistake.)

- Subtract Uncorrected Mistakes from Words Read to get Words Correct.
- Next, complete the Time section of the activity page.
- Calculate Elapsed Time in minutes and seconds. (If you used a stopwatch, this should already be done for you. Skip to the next step.) If you used a watch and recorded start and stop times, you will need to subtract the Start Time from the Finish Time to calculate the Elapsed Time. Subtract seconds from seconds and then minutes from minutes. Calculate Time in Seconds. Multiply the number of minutes by 60 to convert minutes to seconds, and then add the number of seconds.
- Next, complete the W.C.P.M. section of the worksheet.
- Divide Words Correct by Time in Seconds. Then multiply by 60 to get Words Correct Per Minute (W.C.P.M.).
- As you evaluate W.C.P.M. scores, here are some factors to consider:
 - It is normal for students to show a wide range in fluency and in W.C.P.M. scores. However, a major goal for Grade 3 students is to read with sufficient fluency to ensure comprehension and independent reading of school assignments in subsequent grades. Exact fluency targets vary from state to state; the national mean calculated by Hasbrouck and Tindal in 2006 for Fall of Grade 3 was 71 W.C.P.M.
 - A student's W.C.P.M. score can be compared with the scores of other students in the classroom (or grade level) and also with the national fluency norms for Fall of Grade 3 obtained by Hasbrouck and Tindal. Students whose scores are below the 25th percentile (44 W.C.P.M.) are experiencing serious problems in reading fluently.

Piranhas

Piranhas are meat-eating fish with razor-sharp teeth. If an animal goes into a pond where these fish are, the piranhas may attack. A large school of hungry piranhas can kill a large animal very quickly.

Piranhas live in South America. They are found in the Amazon River and in other rivers and lakes.

Like most fish, piranhas lay eggs. The female lays up to five thousand eggs at one time. The male piranha guards the eggs until they hatch. However, after they hatch, the baby piranhas are on their own.

A typical piranha is five to ten inches long. It might weigh two pounds.

A piranha has a single row of teeth. These teeth are shaped like triangles and are very sharp. In fact, they are so sharp that, in the past, some native people used them to make weapons and tools.

Piranhas have very strong jaws. Pound for pound, they are stronger biters than great white sharks!

Here is how scientists measure bite strength. First, they weigh the animal. Next, they allow the animal to bite a special tool that measures how strong its bite is. Finally, they divide the bite strength by the animal size.

A great white shark has a bite force about equal to its body. It might weigh five thousand pounds, and it might bite with a force of about five thousand pounds. A piranha is much smaller. It might weigh two pounds. But it can bite with sixty pounds of force. Sixty divided by two is thirty. That means the piranha's bite strength is about thirty times as strong as a great white shark.

A piranha's bite hurts a lot, but what makes it even worse is what comes next. Once the piranha has bitten down, it spins away from its prey, tearing out a chunk of flesh. Ouch!

Piranhas have been known to attack humans. But such attacks are not common. There are some scary movies that make it sound like piranhas are always attacking people. We know now that this is just not true.

Student Name

- 1. puppy
- 2. puppies
- 3. penny
- 4. pennies
- 5. study
- 6. studies
- 7. carry
- 8. carries
- 9. butterfly
- 10. butterflies
- 11. lady
- 12. ladies
- 13. bunny
- 14. bunnies
- 15. dry
- 16. dries
- 17. hurry
- 18. hurries
- 19. marry
- 20. marries

Challenge Word: *along*

Challenge Word: *put*

Spelling Analysis Directions

Unit 2, Lesson 15

- Students are likely to make the following errors: not changing the 'y' to 'i' before adding the *-es*.
- Leaving the 'y' in place and adding *-ies*.
- While either of the above student-error scenarios may occur, you should still be aware that misspellings may be due to many other factors. You may find it helpful to record the actual spelling errors that the student makes in the analysis chart. For example: Is the student consistently making errors on specific vowels? Which ones?
- Is the student consistently making errors on double consonants?
- Is the student consistently making errors at the end of the words?
- Is the student consistently making errors on particular beginning consonants?
- Did the student write words for each feature correctly?
- Also, examine the dictated sentence for errors in capitalization and punctuation.

Teacher Resources

In this section, you will find:

- Glossary
- Activity Book Answer Key
- Texas Essential Knowledge and Skills Correlation Chart
- English Language Proficiency Standards Correlation Chart

Glossary

A

activist—a person who strongly believes in changing something and works hard to try to make change happen

adapt—to change

amphibian—an animal that can live on land and in water (**amphibians**)

aquatic—living, growing, or found in water

attract—to draw or pull toward a person, place, or thing

B

behavior—how a person or animal acts

C

calcified—hardened, especially by deposits of the mineral known as calcium salts

carnivore—an animal that mainly eats meat (**carnivores**)

cavity—a hollow space within a body, a bone, or an organism

characteristic—something that makes a person, thing, or group different (**characteristics**)

classify—to put things into groups based on similarities or type (**classifying, classified**)

climate—the usual weather patterns in a particular area

cold-blooded—having a body temperature that changes with the temperature of the environment

column—a set of objects arranged in a vertical, or up and down, arrangement; a supporting base

communicate—to share information with others through language, writing, or gestures

constant—not changing very much and staying steady and even

D

delta—a triangular area found where a stream or river flows into a bigger body of water and deposits mud and sand in a fan-shaped area (**deltas**)

diaphragm—a layer of muscle that separates the upper and lower body sections in mammals and creates a space for the lungs to expand when they breathe in oxygen

E

exoskeleton—the tough, rigid, outer covering that invertebrate animals have for protection and to keep from drying out

F

feather—one of many light, soft parts that covers a bird's skin (**feathers**)

fin—a bony spine covered with skin that sticks out from a fish's body and helps it swim (**fins**)

flock—a group of birds (**flocks**)

G

gill—one of a pair of organs fish use to breathe underwater

glide—to move smoothly and continuously

H

habitat—a place where plants and/or animals live and grow (**habitats**)

herbivore—an animal that only eats plants (**herbivores**)

hibernate—to spend a season resting or sleeping (**hibernating**)

huddle—to crowd or squeeze together in a group to stay warm

I

inject—to force in fluid, like poison, usually by piercing the skin (**injects**)

insulation—material that separates an area in order to keep in a form of energy

intelligent—smart

internal—on the inside or center of an object or organism

invertebrates—animals that do not have a backbone

K

kingdom—a major group into which all living things are classified (**kingdoms**)

L

language—words used to communicate

life cycle—the stages through which a living thing goes from birth until death

M

mammal—an animal that gives birth, has hair, feeds milk from its own body to its young, and is warm-blooded

mammary glands—milk-producing organs found in female mammals

marine—related to the sea

migrate—to travel back and forth from one place to another

molt—to shed skin (**molting, molted**)

N

nectar—sweet liquid that comes from flowers

nerves—parts of the body that send messages to and from the brain through the spinal cord

nest—a structure formed and used by animals for laying and hatching eggs

nocturnal—active during the night

O

observe—to watch closely and carefully

omnivore—an animal that eats both plants and meat (**omnivores**)

orchestra—a group of musicians who play instruments together

oxygen—a colorless gas that animals must breathe to stay alive

P

plumage—birds' feathers

poisonous—full of poison or venom

predator—an animal that hunts other animals for food (**predators**)

primate—a mammal such as a monkey, ape, or human

primatologist—a scientist who studies primates

R

reproduction—the process that lets a plant or animal produce offspring, or young, of their own kind

reptile—a cold-blooded animal with tough, scaly skin that uses its surroundings to control its body temperature

S

scale—a thick, small disc on the outside of the bodies of some animals, such as fish and reptiles (**scales**)

school—a large group of fish or other aquatic animals that swim together (**schools**)

secrete—to seep out from the skin (**secretes**)

sensitive—able to feel something very quickly or intensely

shed—to drop, cast off, or separate from something

sonar—a way to find things underwater using sound waves

spine—backbone

stately—grand or impressive in size or manner

suction cup—a round, shallow cup that can stick to a surface (**suction cups**)

survive—to continue to live (**survives**)

T

tadpole—the early form of frogs and toads that has gills and a tail, but no legs (**tadpoles**)

temperature—the measurement of how hot or cold something is

transformation—changing appearance

V

venom—poison produced by an animal used to harm or kill another animal

venomous—having or producing poisonous fluid

vertebrates—animals that have a backbone

W

warm-blooded—being able to control internal body temperature by making heat within the body and having ways to cool the body down when needed

Z

zoologist—a scientist who studies animals and their characteristics

Digital Exit Ticket Suggested Answers

QUESTION	ANSWER
Lesson 1	
Name two text features we found in our reading today. What text feature do you think is most important? Why?	Answers may vary, but should include two of the following: table of contents, heading, bold print, photo/captions, map, diagram, glossary, and chart. Students should cite one feature as most important and explain their thinking, i.e. "I think the table of contents is the most important text feature because it tells you where you can find the information you need."
Lesson 2	
How does the chart on page 17 of the Reader help your understanding of the classification of living things?	Answers may vary in wording, but should include reference to to the chart showing how scientists classify living things into five kingdoms, one kingdom being animals, and then into category of animal.
Lesson 3	
After listening to the Read-Aloud, explain why the backbone or spinal column of vertebrates is so important.	Answers should include: "The backbone of vertebrates is so important because it protects the spinal cord of these creatures."
Lesson 4	
Name at least two details from the text on page 31 of the Reader that support the main idea that warm-blooded animals cool off in different ways	Answers may vary, but should include the main idea that warm-blooded animals cool off in different ways by: sweating, panting, drinking water, temperature, and food intake.
Lesson 5	
Which text feature about fish did you find in your Reader today? What did you learn from that text feature?	Answers may vary, but could include bolding and photos. Example: "One text feature I found in my Reader today was photos. One photo taught me that fish come in all shapes and sizes."
Lesson 6	
Describe the transformation toads go through in their lifetimes. Try to use signal words to describe the sequence of their metamorphosis.	Answers may vary, but should include: "Toads go through a transformation by starting out as an egg, transforming into a tadpole, then morph into amphibians, and finally adults toads."
Lesson 7	
Think about the important points from the two texts that you read today about frogs. How are the two texts alike? How are the two texts different?	Answers may vary, but should include: "The Two texts are alike because...; the two texts are different because..."
Lesson 8	
What does nocturnal mean in the following sentence? "Like Anna, they are nocturnal hunters, hunting at night."	"Nocturnal" means that they are awake at night.

Lesson 9	
Name at least one text feature the author included in Chapter 11 to help the reader. Explain how that text feature is helpful.	Answers may vary, but could be: "One text feature the author included in Chapter 11 was bolding. Bolding important words help readers understand what to focus on and what to try to remember."
Lesson 10	
Bird bones have lots of cavities in them, which help make them lighter and able to fly. What are cavities?	Cavities are "hollow spaces within a bone or body".
Lesson 11	
Name one text feature you noticed in the Reader today. What did you learn about birds from this text feature?	Answers may vary, but could be: "One text feature the author included in Chapter 11 was bolding. Bolding important words help readers understand what to focus on and what to try to remember."
Lesson 12	
Highlight the clue word used to signal a contrast or comparison of mammals in each of the following sentences:	<ol style="list-style-type: none"> 1. Like 2. Both 3. however
Lesson 13	
If you could only tell your parent/ guardian one thing about Jane Goodall, what would it be? Write the main idea and at least one supporting detail from the text/video.	Answers may vary, but should include one thing learned about Jane Goodall with a detail.
Lesson 14	
Name one text feature you discovered as you read "Scientists Who Classify Animals." Explain what information you learned from that text feature.	Answers may vary, but could be: "One text feature I discovered as I read was the use of captions in photos. I learned that anyone can be a scientist!"
Lesson 15	
Why did Alice get angry at the trial? Use evidence from the text to support your answer.	Answers may vary, but should include that Alice got angry at the trial because she was frustrated by the muddle and the order of things happening. In the story, Alice gets very upset when the Queen announced the sentence would be read first, before the jury had reached a verdict.

NAME: _____
DATE: _____

Living Things: Text Features Scavenger Hunt

Text feature	Is this text feature in the chapter? (yes or no)	Page	Evidence
Table of contents	Answers may vary.		List two chapters in the table of contents.
Heading	Answers may vary.		What is the heading?
Bold print words	Answers may vary.		What are the bolded print words?
Photo and caption	Answers may vary.		What is in the photo? What is the caption?

Diagram	Answers may vary.	What is the diagram?
Chart	Answers may vary.	What is the chart?
Map	Answers may vary.	What is the map?
Glossary	Answers may vary.	What is in the glossary?

1. What four characteristics do all living things have in common? **Answers may vary, but they should include the following information: create energy from food, have babies or make other living things like themselves, have a life cycle, and change to fit in better with their habitat.**
2. What text feature from the Reader could help you answer the previous question? **Answers may vary, but students may say that the photo collages helped them answer.**

1. Why did the author write this passage?

Answers may vary, but they should include information about Carolus Linnaeus and his animal classification system.

2. Is the author trying to answer, explain, or describe? Explain your answer.

Answers may vary, but they should include information about explaining the animal classification system set up by Carolus Linnaeus.

NAME: _____
DATE: _____

Nouns, Verbs, and Adjectives

Circle the nouns, draw a wiggly line under the verbs, and draw a box around the adjectives. Draw an arrow from the adjective to the noun it describes.

The old, brown bear protects the small cubs.

1. One cage holds colorful birds.

2. Sam rushed to the nearest window.

3. My red toy train raced around the track.

4. Frank skates down the steep hill.

5. During the hot summer she plays at the beach.

6. Speedy jets arrive at the busy airport.

7. My favorite aunt stays with a good friend at her home.

8. He swallowed the hot and sweet donuts.

9. The brown apple looks rotten.

10. Sam, Sally, and Sue attend Johnson Elementary School.

Cold-blooded or warm-blooded Body design: Habitat: Answers may vary.	Vertebrate or invertebrate Reproduction: Pattern-breaker: Answers may vary. Local animals:
Cold-blooded or warm-blooded Body design: Habitat: Answers may vary.	Vertebrate or invertebrate Reproduction: Pattern-breaker: Answers may vary. Local animals:
Cold-blooded or warm-blooded Body design: Habitat: Answers may vary.	Vertebrate or invertebrate Reproduction: Pattern-breaker: Answers may vary. Local animals:
Cold-blooded or warm-blooded Body design: Habitat: Answers may vary.	Vertebrate or invertebrate Reproduction: Pattern-breaker: Answers may vary. Local animals:
Cold-blooded or warm-blooded Body design: Habitat: Answers may vary.	Vertebrate or invertebrate Reproduction: Pattern-breaker: Answers may vary. Local animals:
Cold-blooded or warm-blooded Body design: Habitat: Answers may vary.	Vertebrate or invertebrate Reproduction: Pattern-breaker: Answers may vary. Local animals:

30 Unit 2 | Activity Book Grade 3

NAME: _____ **3.3** ACTIVITY PAGE
DATE: _____

Compare Two Texts

Directions: Read the short passages. Using a yellow marker, highlight the topics that are the same. Using an orange marker, circle the information that is different.

Reading: “Vertebrates or Invertebrates?”	Read-aloud: “Vertebrate Animals”
<p>Many other animals also are vertebrates. All mammals, reptiles, fish, and birds have a backbone, so they are all vertebrates. They have some type of spinal cord, too.</p> <p>Animals with a backbone come in all different shapes and sizes. Apes, rhinos, horses, rabbits, bats, and, yes, rats and humans, too are all mammals and vertebrates. Lizards, turtles, snakes, and crocodiles are reptiles and vertebrates. Huge sharks and tiny goldfish are vertebrates. Small hummingbirds and large eagles are vertebrates, too.</p>	<p>For today, let’s take a glimpse at the backbones of the five animal species to which my five friends belong. We’ve seen that a hippopotamus has a backbone. Next, let’s take a look at one of Ebenezer’s fellow egrets. Its backbone, or spinal column, helps it to hold its head up high and protects its spinal cord. Like all egrets, Ebenezer could not live without his backbone. All birds have backbones, or vertebrae.</p> <p>Snakes don’t look like they have backbones, do they? Even though snakes slither—or slip and slide along—they absolutely do have backbones! A snake’s vertebrae, like Anna Anaconda’s, run the length of its body and swing low to the ground as its muscles help it move along the ground or climb up trees. All reptiles have backbones. So, you can’t always tell from the outside whether an animal is a vertebrate with a spine (backbone), or whether it’s an invertebrate.</p>

Grade 3 Activity Book | Unit 2 31

Reading: “Vertebrates or Invertebrates?”	Read-aloud: “Vertebrate Animals”
	<p>How about fish? Would you say fish have a backbone? The answer is yes! All fish have backbones, too, just as reptiles, birds, and mammals do. It’s very tricky to see, but if you took an x-ray of its body, you would see that all the other tiny bones that make up the skeleton of the fish are connected to its spine. Paolo told me that even though all fish have backbones, some fish—like sharks and stingrays—have backbones that are made of lighter and more bendable cartilage instead of hard bone, allowing them to be more flexible and travel more quickly.</p> <p>That leaves amphibians. Take a look at my animal friends one more time; pay close attention to the toad next to Tabitha. It’s hard to tell when you look at a toad’s body that there is a backbone inside! Now tell me—do toads have backbones? Yes, to be sure, they certainly do! Toads are vertebrates, too! All amphibians have backbones! That means that all five of the animals you’ve seen today are vertebrates. They all have backbones.</p>

32 Unit 2 | Activity Book Grade 3

NAME: _____ **3.3** ACTIVITY PAGE
DATE: _____ CONTINUED

Directions: Read the short passages. Using a yellow marker, highlight the topics that are the same. Using an orange marker, circle the information that is different.

Reading: “Vertebrates or Invertebrates?”	Read-aloud: “Vertebrate Animals”
<p>But there are many more animals that do not have a backbone. Animals without backbones are called invertebrates. Insects are the largest group in the animal kingdom. Insects are also the largest invertebrates. Insects include flies, wasps, beetles, cockroaches, ladybugs, and butterflies. Other kinds of invertebrates include earthworms and spiders.</p>	<p>Think how many insects there must be on our planet! They make up three quarters of all the species in the animal kingdom! Can you name a few of the many animals in the insect group? Flies, wasps, beetles, cockroaches, ladybugs, and butterflies are all insects. There are surely a lot more species of insects than there are species of amphibians, mammals, birds, fish, and reptiles all put together!</p> <p>Even though insects are by far the largest group of invertebrates, they are not the only invertebrates. Here’s another question for you to think about. Close your eyes and pretend you are a taxonomist for a moment. Can you think of any other animals without backbones? Here’s a hint: instead of internal vertebrae, these animals have an external, or outer, hard body covering.</p>

Grade 3 Activity Book | Unit 2 33

Reading: "Vertebrates or Invertebrates?"	Read-aloud: "Vertebrate Animals"
	<p>The largest group of invertebrates is made up of arthropods. Insects make up the largest group of arthropods. Another large group of arthropods includes arachnids. Spiders are arachnids, and so are ticks, daddy longlegs, and scorpions. Insects have six legs and three body parts. The ant has very long antennae—they almost look like legs! In comparison, arachnids have eight legs and two body parts. Instead of having flexible internal skeletons, all of the arthropods wear a tough exoskeleton, or protective covering, on the outside. I bet you can recognize some of these common examples of insects and arachnids.</p>

NAME: _____
DATE: _____

Blank Busters

Follow along with your teacher to fill in the blanks with the correct spelling words. The root words are listed in the box below. You will not use a word more than once.

hop	rub	ship	grab	patch
plan	stretch	finish	discuss	submit

- All the groups submitted their ideas for the science fair to our teacher before the Friday deadline.
- My sister asked, "Will you please rub sunscreen on my back since I can't reach it?"
- My family is planning a surprise party for my grandfather's birthday.
- Marcus stretched out my new soccer socks when he borrowed them for practice.
- Mom peeked in my room to be sure I was finishing the last question on my math homework.
- Lisa grabbed her hat and gloves and started walking to the bus stop.

- My aunt who lives in England is shipping us some clothes that her children can no longer wear.
- Rachel's mom patched the hole in her skirt so she could wear it again.
- A toad hopped out of the bushes near the drain and onto the sidewalk.
- Our baseball coach wanted to discuss last night's game during today's practice.

NAME: _____
DATE: _____

Blank Busters

Create your own Blank Busters sentences using three words from this week's spelling list. Do not fill in the blanks—you will do that in class when you bring this back!

Example: My aunt is shipping us some clothes that her children can no longer wear.

Root Word	-ed	-ing
hop	hopped	hopping
rub	rubbed	rubbing
ship	shipped	shipping
grab	grabbed	grabbing
patch	patched	patching
plan	planned	planning
stretch	stretched	stretching
finish	finished	finishing
discuss	discussed	discussing
submit	submitted	submitting

- Answers may vary.

- _____

- _____

NAME: _____
DATE: _____

Cold-blooded animals do not use energy from their bodies to stay warm or cool. Instead they use what is around them to keep warm or keep cool. **Crocodiles** stay in water or mud in order to stay cool on hot days. If they need to warm up on cooler days, they bask in the sun.

While **warm-blooded** animals can live in just about any habitat, **cold-blooded** animals can only live in certain habitats.

Cold-blooded animals do not need to eat as often as **warm-blooded** animals. This is because they do not need lots of food to make energy to warm or cool their bodies. Most **crocodiles** only eat once a week, but they can survive for months and sometimes years without eating!

Choose one paragraph from the reading and complete the diagram:

Central idea:	Answers may vary.
Supporting detail:	Answers may vary.
Supporting detail:	Answers may vary.
Supporting detail:	Answers may vary.

NAME: _____
DATE: _____

Fish and Gills: Matching

Draw a line to connect the text feature to the correct picture.

Table of contents

Heading

Bold print words

Photo and caption

Chart

Map

Glossary

Diagram

Fish

G
gill comes of a pair of organs fish use to breathe underwater (gills)

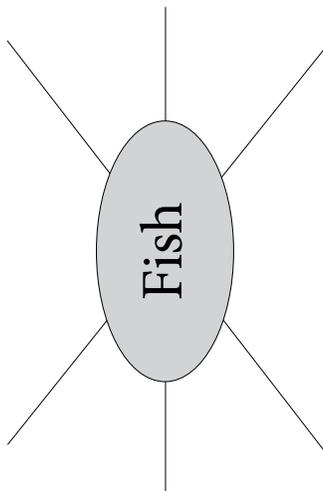
Fish come in many sizes and colors.

aquatic animals

Introduction: Meet Raccoonburg..... 1
Chapter 1: Classifying Living Things..... 20
Chapter 2: Warm-Blooded and Cold-Blooded Animals..... 30
Chapter 3: Vertebrates or Invertebrates?..... 34
Chapter 4: Fish..... 44
Chapter 5: Amphibians..... 50

NAME: _____
DATE: _____

Fish Web
Answers may vary.



Student Interview

Student 1: _____

Which text feature did you find in the Reader? _____

What did you learn from this text feature?

Answers may vary.

NAME: _____
DATE: _____

5.4 ACTIVITY PAGE

Fish and Gills Exit Slip

My reflection

Name: _____

Which text feature did I find in the Reader? _____

What did I learn from this text feature?

Answers may vary.

Grade 3

Activity Book | Unit 2 57

NAME: _____
DATE: _____

5.5 TAKE-HOME

Parts of Speech

Draw a vertical line separating the subject and predicate. Circle the nouns. Draw a wiggly line under the verbs. Draw a box around the adjectives and an arrow from the adjectives to the nouns they describe.

1. The pottery was from a small factory.
2. Some artists draw pictures on cloth.
3. Mother bought new clothes for my little brother.
4. Sally feels cranky and sad today.
5. The little boy was out in the red barn.
6. Mr. Jones likes the tall tale about the twin sisters.
7. The colorful kite flew high up in the sky.
8. Dad did not want to stay for the whole show.
9. The children forgave each other for the silly misunderstanding.
10. The painter painted the house many colors.

Grade 3

Activity Book | Unit 2 59

11. Make up two sentences that have nouns, a verb, and adjectives and mark them as you did in numbers 1–10.

Answers may vary.

NAME: _____
DATE: _____

6.1 ACTIVITY PAGE

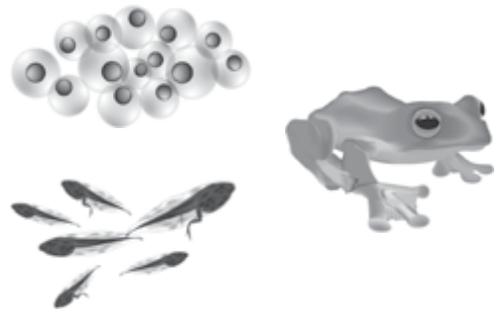
Common Bond

What do these three pictures have in common?

Answers may vary, but students should identify that these images show stages in the life cycle of a frog.

Grade 3

Activity Book | Unit 2 61



NAME: _____
DATE: _____

6.2 ACTIVITY PAGE

Metamorphosis Sequencing

Write a sentence and then draw a picture to show the correct order in the stages of metamorphosis (of a frog or toad).

<p>First First, she will lay her eggs.</p>	
<p>Next Next, a few hundred toad eggs will hatch into tadpoles.</p>	
<p>Then Then, the tadpoles will morph, or change, into very different looking creatures, young amphibians, with very different habits.</p>	
<p>Last Lastly, young amphibians will grow into adult toads.</p>	

Grade 3

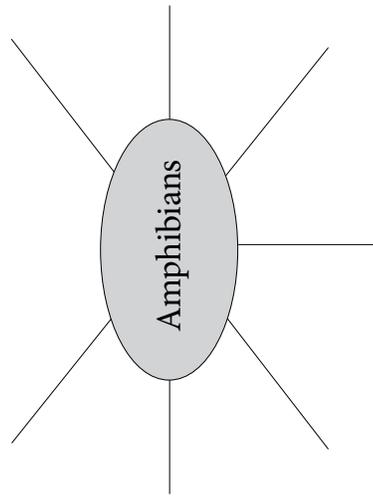
Activity Book | Unit 2 63

NAME: _____
DATE: _____

6.3 ACTIVITY PAGE

Amphibian Web

Answers may vary.



Grade 3

Activity Book | Unit 2 65

NAME: _____
DATE: _____

6.4 ACTIVITY PAGE

Identify Compound Sentences

For each sentence,

- draw a line to separate the subject and predicate
- mark the subject(s) and predicate(s) by writing the letter *S* above each subject and the letter *P* above each predicate
- draw two lines under the conjunction *and*

Then write "Yes" on the line if the sentence is a compound sentence, or write "No" on the line if the sentence is not a compound sentence.

- The boys ^S and girls ^S | ^P watched a beaver in the river. No
- The chicken ^S | ^P sat on the eggs, and then the eggs ^S | ^P hatched. Yes
- Jamal ^S | ^P likes long novels, and his friend Derek ^S | ^P likes to read too. Yes
- Mark ^S and his classmates ^S | ^P will write a report on mammals. No
- The class ^S | ^P went to the park and the museum. No
- Tim ^S and Bill ^S | ^P went to the store, and Bill ^S | ^P bought candy. Yes
- The children ^S | ^P want salad and spaghetti for dinner. No
- The trip ^S | ^P was fun, and Mary ^S | ^P enjoyed it. Yes

Grade 3

Activity Book | Unit 2 67

NAME: _____
DATE: _____

6.5 ACTIVITY PAGE

Identify Compound Sentences

For each sentence,

- draw a line to separate the subject and predicate
- mark the subject(s) and predicate(s) by writing the letter *S* above each subject and the letter *P* above each predicate
- draw two lines under the conjunction *and*

Then write "Yes" on the line if the sentence is a compound sentence, or write "No" on the line if the sentence is not a compound sentence.

- Example: The hummingbirds ^S and bees ^S | ^P surprised the children. No
- Mary ^S | ^P fed her pet mice, and Peter ^S | ^P fed his pet turtle. Yes
 - The birds ^S | ^P fed their babies and ^S | ^P protected them from predators. No
 - The scientist ^S | ^P watched the chimpanzees during the day, and the rest of the crew ^S | ^P watched them at night. Yes
 - My brother ^S | ^P is a great artist, and he ^S | ^P loves to paint. Yes
 - My sister ^S | ^P is a great athlete and ^S | ^P loves to run. No
 - My mother ^S and aunt ^S | ^P like to take walks together. No
 - Our dog ^S | ^P ran around the yard, and our cat ^S | ^P slept indoors. Yes

Grade 3

Activity Book | Unit 2 69

NAME: _____

71

ACTIVITY PAGE

DATE: _____

Frog Scavenger Hunt

Frog Clue Card 1: Where can American green tree frogs live?

southeastern United States

Frog Clue Card 2: Where can poison dart frogs live?

South America

Frog Clue Card 3: How long is an American green tree frog?

two inches long

Frog Clue Card 4: How long is a poison dart frog?

an inch and a half long

Frog Clue Card 5: What color is an American green tree frog?

lime green to yellow

Grade 3

Activity Book | Unit 2 73

Frog Clue Card 6: What color is a poison dart frog?

brightly colored

Frog Clue Card 7: What is a distinct characteristic of an American green tree frog?

long toes with suction cups

Frog Clue Card 8: What seeps out of a poison dart frog's skin?

poison

Frog Clue Card 9: Where do American green tree frogs lay their eggs?

in or near the water

Frog Clue Card 10: Where do poison dart frogs take their newly hatched tadpoles?

into the canopy, or tops of trees

74 Unit 2 | Activity Book

Grade 3

NAME: _____

72

ACTIVITY PAGE

DATE: _____

Frog Exit Ticket

How are these two texts alike?

Answers may vary, but they may include information that both texts focused on frogs: frogs lay eggs and range in color.

How are these two texts different?

Answers may vary, but they may include information such as that the frogs live in different locations, poison dart frogs secrete poison, tree frogs stay in trees, and so on.

Grade 3

Activity Book | Unit 2 75

NAME: _____

73

ACTIVITY PAGE

DATE: _____

Field Journal

Today you read about tree frogs and poison dart frogs. If you were a frog researcher, which one would you like to research further? Explain.

Answers may vary.

Grade 3

Activity Book | Unit 2 77

pre-: Prefix Meaning “before”

The left-hand side of the table contains words that use the prefix you have been studying. Use the blanks on the right side to record additional words that use the same prefix. Make sure to include the definition for the new words you brainstorm.

precook—(verb) to prepare and heat food before	
preset—(verb) to arrange before	
preselect—(verb) to choose before	
prepay—(verb) to give money for something before	

Write the correct word to complete each sentence.

preselect	preprint	preheat	prepay
-----------	----------	---------	--------

- Last year, Dad was able to prepay for our summer football camp so we don't owe anything this year.
- Lucy decided to preprint her boarding pass for the flight so she could go right through security at the airport.
- When I was in my sister's wedding, I got to preselect the color of my dress several months in advance.
- Write your own sentence using the one word left in the box.

Answers may vary but should include the word preheat.

NAME: _____
DATE: _____

Blank Busters

Follow along with your teacher to fill in the blanks with the correct spelling words. The root words are listed in the box below. You will not use a word more than once.

smile	rake	file	vote	dine
quote	raise	translate	tire	prepare

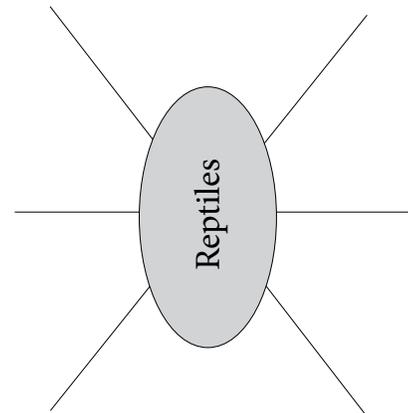
- The chef prepared a special dish for the night with fish and pasta.
- When we got home from school, Dad was in the yard raking leaves into piles.
- On Election Day, Mom voted before she went to work.
- When Ms. Taylor asked for volunteers to help with the math workshop, she saw four students raise their hands.
- Some puppies tire easily from running and playing and need naps, just like people.
- Kevin translated his Spanish homework for me so he could tell me what he learned.

- I saw the baby smile when his mother leaned over to say hello to him.
- Darcy filed the letter she received about science camp in a folder with other science camp documents so they would all be in one place.
- Grandma said we would be dining at three o'clock on Sunday afternoon.
- My sister can quote most lines from her favorite movie.

NAME: _____
DATE: _____

Reptile Web

Answers may vary.



NAME: _____ **9.2** ACTIVITY PAGE
 DATE: _____

Blank Busters

Create your own Blank Busters sentences using three words from this week's spelling list. Do not fill in the blanks—you will do that in class when you bring this back!

Example: When we got home from school, Dad was in the yard raking leaves into piles.

Root Word	-ed	-ing
smile	smiled	smiling
rake	raked	raking
file	filed	filing
vote	voted	voting
dine	dined	dining
quote	quoted	quoting
raise	raised	raising
tire	tired	tiring
translate	translated	translating
prepare	prepared	preparing

1. Answers may vary.

2. _____

3. _____

Grade 3 Activity Book | Unit 2 91

NAME: _____ **10.2** ACTIVITY PAGE
 DATE: _____

Bird Watching

Description of bird (color):
 Location:
 Observation:
 Notes: Answers may vary.

Description of bird (color):
 Location:
 Observation:
 Notes: Answers may vary.

Description of bird (color):
 Location:
 Observation:
 Notes: Answers may vary.

Grade 3 Activity Book | Unit 2 99

NAME: _____ **10.3** ACTIVITY PAGE
 DATE: _____

Bird Vocabulary

1. What does glide mean in the following sentence?
 His long, broad wings are built so that he can **glide**, or move smoothly and continuously.
move smoothly or continuously

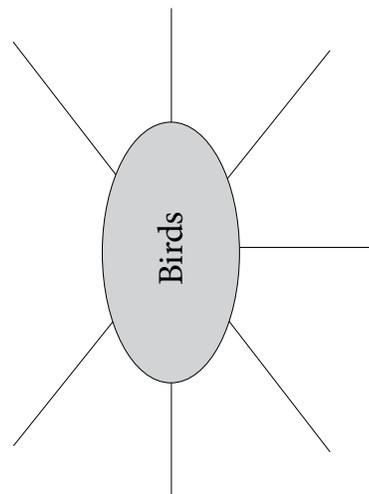
2. What does nest mean in the following sentence?
 Most birds prepare a **nest**, or shelter for their young, using whatever materials are available to them in nature.
shelter for young

Grade 3 Activity Book | Unit 2 101

NAME: _____ **10.4** ACTIVITY PAGE
 DATE: _____

Bird Web

Answers may vary.



Grade 3 Activity Book | Unit 2 103

NAME: _____ **10.5** ACTIVITY PAGE
 DATE: _____

Field Journal

What did you learn about birds today? Explain two new things you learned about birds.

Answers may vary.

Grade 3 Activity Book | Unit 2 105

NAME: _____ **10.6** TAKE-HOME
 DATE: _____

Birds

Fill in the chart with details from the chapter.

Characteristics of Birds	
Vertebrates or invertebrates?	vertebrates
Warm-blooded or cold-blooded?	warm-blooded
Where birds can live	many different habitats
What all birds have	wings
Body covering	feathers
What birds eat	seeds, insects, fish, mammals, nectar
How birds use their songs	attract mates, claim a place of their own

Complete the following sentence.

One interesting thing I learned about birds is

Answers may vary.

Grade 3 Activity Book | Unit 2 107

NAME: _____ **11.1** ACTIVITY PAGE
 DATE: _____

Bird Text Features

Text feature in the Reader: _____

What I learned from this text feature about birds: Answers may vary.

Text feature in the Reader: _____

What I learned from this text feature about birds: Answers may vary.

Text feature in the Reader: _____

What I learned from this text feature about birds: Answers may vary.

Grade 3 Activity Book | Unit 2 109

NAME: _____ **11.2** ACTIVITY PAGE
 DATE: _____

Field Journal

If you could be a bird, which one would you want to be and why?

Answers may vary.

Grade 3 Activity Book | Unit 2 111

NAME: _____

11.3

ACTIVITY PAGE

DATE: _____

Abstract Nouns

Write the letter C over the concrete nouns and the letter A over the abstract nouns.

Example: The skydiver was full of courage when he jumped from the plane.

- The character in the story was so full of hate I had to stop reading.
- The friendship Tim and Tom share makes their parents happy.
- The photograph clearly shows the beauty of the mountains.
- The football team was full of pride when they won the state championship game.
- Your anger is making your face red!
- The skillful artist showed he was full of skill after painting the mural.
- An afternoon of relaxation helps to make you feel energetic.
- Listening to beautiful music fills me with peace.

Grade 3

Activity Book | Unit 2 113

Create a sentence using each abstract noun.

- trouble
Answers may vary.
- success
Answers may vary.
- love
Answers may vary.

114 Unit 2 | Activity Book

Grade 3

NAME: _____

12.1

ACTIVITY PAGE

DATE: _____

Text Structures

Read the sentences below. Circle the text structure clue word in the sentence. On the line, write compare if the sentence is comparing two or more things or contrast if the sentence is contrasting two or more things.

- The kangaroo, like the opossum, is part of a group of mammals called marsupials.
compare
- The duck-billed platypus is unlike other mammals because it lays eggs.
contrast
- Remember learning that birds' beaks may provide clues to their diets? The same is true of mammals' mouths.
compare

Grade 3

Activity Book | Unit 2 117

NAME: _____

12.2

ACTIVITY PAGE

DATE: _____

Compare Two Texts

Write the central ideas from each text. Draw lines to show points that are related.

"Mammals: Live-Bearing Milk Producers"	"Mammals"
<u>Answers may vary.</u>	<u>Answers may vary.</u>

Grade 3

Activity Book | Unit 2 119

NAME: _____ DATE: _____ **12.3** ACTIVITY PAGE

Mammal Web

Answers may vary.

Grade 3 Activity Book | Unit 2 121

NAME: _____ DATE: _____ **12.4** ACTIVITY PAGE

Grammar Review

Label the parts of speech in the following sentences. Circle the nouns, box adjectives and draw arrows to the nouns that they describe, and draw wiggly lines under the verbs.

- The warm days of summer change to the cool days of fall.
- The winning team celebrates with a grand party and yummy food.
- Bill collects many varied stamps for his huge collection.
- The dedication of the Macon County Fire Department is inspiring.

Explain the function of a noun in a sentence:
 Answers may vary but should include that nouns name people, places, and things and name things that cannot be detected using the a person's five senses.

Explain the function of a verb in a sentence:
 Answers may vary but should include that verbs are action words and linking words.

Explain the function of an adjective in a sentence:
 Answers may vary but should include that adjectives are words that describe nouns or articles, e.g., a, an, and the.

Grade 3 Activity Book | Unit 2 123

NAME: _____ DATE: _____ **13.1** ACTIVITY PAGE

Taking Notes on Jane Goodall

Jane Goodall: Video Clip Jane Goodall: Reading

Answers may vary.	Answers may vary.
Answers may vary.	Answers may vary.
Answers may vary.	Answers may vary.
Answers may vary.	Answers may vary.

Grade 3 Activity Book | Unit 2 125

NAME: _____ DATE: _____ **13.2** ACTIVITY PAGE

Jane Goodall: Central Idea and Supporting Details

Central idea:
 Answers may vary, but they may include that Jane Goodall studies primates.

Supporting detail: Answers may vary.	Supporting detail: Answers may vary.	Supporting detail: Answers may vary.
---	---	---

Grade 3 Activity Book | Unit 2 127

NAME: _____ **13.3** ACTIVITY PAGE
 DATE: _____

Animal Report

Directions: Write your topic sentence in the first rectangle to introduce your animal and its group. Choose three supporting details to write in the next three rectangles to support or expand your topic sentence. Write your concluding sentence in the last rectangle to conclude your paragraph.

Topic Sentence Answers may vary.
Supporting Detail #1 Answers may vary.
Supporting Detail #2 Answers may vary.
Supporting Detail #3 Answers may vary.
Concluding Sentence Answers may vary.

Grade 3 Activity Book | Unit 2 129

NAME: _____ **14.1** ACTIVITY PAGE
 DATE: _____

Text Feature Search

Take a picture walk through "Scientists Who Classify Animals" and make a prediction after each text feature listed below. What information do you think you will learn from each text feature listed? After reading, go back and note if your prediction was true or false. Finally, write a corrected statement for each false prediction.

Text features	Before reading prediction	After reading (true or false)	Corrected prediction
Heading	Answers may vary.	Answers may vary.	Answers may vary.
Bold print words	Answers may vary.	Answers may vary.	Answers may vary.
Photo and caption	Answers may vary.	Answers may vary.	Answers may vary.
Glossary	Answers may vary.	Answers may vary.	Answers may vary.

Grade 3 Activity Book | Unit 2 133

NAME: _____ **14.2** ACTIVITY PAGE
 DATE: _____

Questions and Answers

1: Question Answers may vary.	2: Answer Answers may vary.
3: Question Answers may vary.	4: Answer Answers may vary.
5: Question Answers may vary.	6: Answer Answers may vary.
7: Question Answers may vary.	8: Answer Answers may vary.

Additional questions:

- _____
- _____
- _____

Grade 3 Activity Book | Unit 2 135

NAME: _____ **14.4** ACTIVITY PAGE
 DATE: _____

Informational Writing

Directions: Write your working title on the top line. Write the second draft of your informational paragraph on the lines below.

Answers may vary.

Grade 3 Activity Book | Unit 2 139

Beavers also build places to live called lodges. Lodges are big piles of sticks and mud that they build after they have built a nice dam. After the beavers **gnaw** down trees, they strip off and eat the bark of the tree. They use the rest of the tree to build their lodges and dams.

A single beaver family can really change its surroundings. Beavers' dams can cause the water in the stream or river to rise up, flooding the nearby land. This creates a swamp, or **wetland**. **Wetlands** are important habitats for many types of birds, mammals, fish, and insects. But if there are people living nearby, they may not welcome the flooding!

Beavers don't stay in one place for very long. Once the good bark from all the trees is eaten in one place, they tend to move downstream and start all over again. But the **wetland** they made often remains long after they leave.

Beavers are very **territorial**: they often attack other beavers that try to move into a space that they have claimed. They want to keep all the tasty tree bark for themselves.

All in all, beavers are interesting mammals to watch and study.

1. According to the selection, what does the word *gnaw* mean?

to bite or chew something

2. According to the selection, what does the word *wetlands* mean?

an area of land covered with shallow water, such as a swamp

NAME: _____
DATE: _____

3. What information did you learn from the photos and captions?

Answers may vary.

4. What information did you learn from the heading?

Answers may vary, but they should include information about beavers.

5. What information did you learn about the bold print words?

Answers may vary, but they should identify one of the bold print words.

NAME: _____
DATE: _____

Mexico—500 miles—without stopping! From there, it may continue south through Mexico to Costa Rica and beyond.

Here is another interesting fact: they are the only birds that can fly backwards! They can also **hover**, or float in the air, and fly upside down.

Their nests are very small, about half as big as a walnut shell. They make their nests using leaves and small yellow and green plants called **moss**. They use spider webs to hold these little bits of nature together. They sometimes eat the spider before using its web as glue.

The spider web is nice and sticky, and it is also **flexible**. A hummingbird will lay two tiny eggs. When its tiny eggs hatch and the babies begin to grow, the spider web will allow the nest to expand. This helps the babies stay warm and safe. In the photo, a hummingbird is feeding its babies. Maybe it is giving them a nice juicy bug to eat or sharing a taste of sweet flower nectar.

See if you can find a more interesting little bird than that!

6. According to the selection, what does the word *hover* mean?

to float in the air

7. According to the selection, what does the word *moss* mean?

a very small green or yellow plant

8. What information did you learn from the photos?

Answers may vary, but they could include information about a comparison between a hummingbird and a penny.

9. What information did you learn from the map?

Answers may vary, but they should include information about the location of hummingbirds in the summer and winter.

10. What additional text feature could be included with this selection? Why?

Answers may vary.

11. How are these two texts alike?

Answers may vary, but they may include that both texts describe the characteristics, habitats, and behavior of animals.

12. How are these two texts different?

Answers may vary, but they may include that one text focuses on a mammal, while the other discusses a bird.

13. Choose the nouns from the following sentence.

The hog had a litter of seven grunting, snorting babies.

- A. hog, had, litter
- B. the, of, seven
- C. hog, litter, babies
- D. seven, grunting, snorting

14. If you decide to rename something, what are you doing to it?

naming it again, or giving it a new name

15. Choose the adjectives from the following sentence.

The mother snake had nine, long, lovely, baby snakes.

- A. mother, nine, long, snakes
- B. snake, long, lovely, baby
- C. nine, lovely, baby, snakes
- D. nine, long, lovely, baby

16. Write the **letter C** over the concrete nouns and the **letter A** over the abstract nouns.

The **C** grandparents were full of **A** pride when they watched their **C** grandchild get the **A** award for **C** bravery.

Choose the best word to complete the sentence. Write it on the line.

- 17. Standing outside during a storm is an unsafe thing to do because you might get hurt.
(unsafe, uneven)
- 18. I chose a nonthreatening costume for Derek's costume party since younger kids will be there, and I don't want to scare them.
(nondairy, nonthreatening)

19. Marcus had too many cupcakes at the reception, and he looked unwell sitting at the table.
(uneven, unwell)

20. In which animal group are humans classified? How do you know?

Answers may vary, but they should include that humans are mammals. They have hair, give live birth, nurse their newborns, are warm-blooded, and so on.

Signal Words

Different types of text structures	Clue words	Sentence in Reader with signal word	Page number in Reader
Time	Before Now Later	<u>Answers may vary.</u>	
Sequence	First Next Then After Last Finally	<u>Answers may vary.</u>	
Cause and effect	Because Then If So As a result When	<u>Answers may vary.</u>	

NAME: _____ PP3 ACTIVITY PAGE
 DATE: _____

Comparing Heights

Which animal is the tallest on the ruler?
anaconda

Which animal is the shortest on the ruler?
piranha

Which animal is closest to your height?
Answers may vary.

Which animal's height surprised you? Why?
Answers may vary.

We compared the animals by height. How else can we compare the animals?
Answers may vary.

Grade 3 Activity Book | Unit 2 169

NAME: _____ PP4 ACTIVITY PAGE
 DATE: _____

My Animal Centers Checklist

Name: _____

Center activity	Date completed
Text features	
Making a poster	
Sequence signal words	
Writing prompts	
Comparing heights	

Which center was your favorite? Give three reasons why you chose this as your favorite.

Answers may vary.

Grade 3 Activity Book | Unit 2 171

At which center did you learn the most? Why?

Answers may vary.

172 Unit 2 | Activity Book Grade 3

Name: _____ PP6 ACTIVITY PAGE

Identify Compound Sentences

For each sentence,

- draw a line to separate the subject and predicate.
- mark the subject(s) and predicate(s) by writing the letter *S* above each subject and the letter *P* above each predicate.
- draw two lines under the conjunction *and*.

Then write "Yes" on the line if the sentence is a compound sentence, or write "No" on the line if the sentence is not a compound sentence.

Example: John | liked the zebra and loved the giraffe in the zoo. No

1. Tigers and lions | are very big cats. No

2. The elementary school | has brilliant mathematicians and also has talented artists. No

3. Sarah and Deb | went to the library. No

4. My uncle | visited Paris, and my nephew | went to Venice. Yes

5. Elephants | are very intelligent animals, and dolphins | are very smart. Yes

6. Buffalo and wolves | live in Yellowstone National Park. No

Grade 3 Activity Book | Unit 2 175

Name: _____

Identify Compound Sentences

For each sentence,

- draw a line to separate the subject and predicate
- mark the subject(s) and predicate(s) by writing the letter *S* above each subject and the letter *P* above each predicate.
- draw two lines under the conjunction *and*

Then write "Yes" on the line if the sentence is a compound sentence, or write "No" on the line if the sentence is not a compound sentence.

Example: My sister | ^S loves to jump rope, and | ^S my brother | ^P loves to play kick ball. Yes

1. My mom | ^S likes baseball and | ^P basketball. No

2. A jellyfish | ^S is her favorite animal, and | ^S an otter | ^P is his favorite animal. Yes

3. My sister | ^S wants hot cocoa, and | ^S my brother | ^P wants iced tea. Yes

4. Jacob | ^S likes to go to the movies and | ^P eat popcorn. No

5. My mother | ^S likes the rain, and | ^S my sister | ^P likes the snow. Yes

Challenge

From the sentences you identified as not compound sentences, choose one to rewrite as a compound sentence.

Answers may vary, but they may include: _____

My mom likes baseball, and my mom likes basketball.

Jacob likes to go to the movies, and Jacob likes to eat popcorn.

TEXAS ESSENTIAL KNOWLEDGE AND SKILLS - GRADE 3

Unit 2

Correlation—Teacher’s Guide

(1) Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking—oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:		
TEKS 3.1.A	listen actively, ask relevant questions to clarify information, and make pertinent comments	U2: p. 26; U2: p. 39; U2: p. 52; U2: p. 63; U2: p. 74; U2: p. 77; U2: p. 126; U2: p. 129; U2: p. 178; U2: p. 181; U2: p. 250; U2: p. 253; U2: p. 284; U2: p. 293
TEKS 3.1.B	follow, restate, and give oral instructions that involve a series of related sequences of action	
TEKS 3.1.C	speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively	U2: p. 98, U2: p. 111, U2: p. 121
TEKS 3.1.D	work collaboratively with others by following agreed-upon rules, norms, and protocols	
TEKS 3.1.E	develop social communication such as conversing politely in all situations	
(2) Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking—beginning reading and writing. The student develops word structure knowledge through phonological awareness, print concepts, phonics, and morphology to communicate, decode, and spell. The student is expected to:		
(A) demonstrate and apply phonetic knowledge by:		
TEKS 3.2.A.i	decoding multisyllabic words with multiple sound-spelling patterns, such as eigh, ough, and en	
TEKS 3.2.A.ii	decoding multisyllabic words with closed syllables, open syllables, VCe syllables, vowel teams, including digraphs and diphthongs, r-controlled syllables, and final stable syllables	
TEKS 3.2.A.iii	decoding compound words, contractions, and abbreviations	
TEKS 3.2.A.iv	decoding words using knowledge of syllable division such as VCCV, VCV, and VCCCV with accent shifts	
TEKS 3.2.A.v	decoding words using knowledge of prefixes	U2: p. 74, U2: p. 95
TEKS 3.2.A.vi	decoding words using knowledge of suffixes, including how they can change base words such as dropping e, changing y to i, and doubling final consonants	U2: p. 8, U2: p. 23
TEKS 3.2.A.vii	identifying and reading high-frequency words from a research-based list	
(B) demonstrate and apply spelling knowledge by:		
TEKS 3.2.B.i	spelling multisyllabic words with closed syllables, open syllables, VCe syllables, vowel teams, including digraphs and diphthongs, r-controlled syllables, and final stable syllables	

TEXAS ESSENTIAL KNOWLEDGE AND SKILLS - GRADE 3

Unit 2

Correlation—Teacher’s Guide

TEKS 3.2.B.ii	spelling homophones	
TEKS 3.2.B.iii	spelling compound words, contractions, and abbreviations	
TEKS 3.2.B.iv	spelling multisyllabic words with multiple sound-spelling patterns	
TEKS 3.2.B.v	spelling words using knowledge of syllable division such as VCCV, VCV, and VCCCV	
TEKS 3.2.B.vi	spelling words using knowledge of prefixes	
TEKS 3.2.B.vii	spelling words using knowledge of suffixes, including how they can change base words such as dropping e, changing y to i, and doubling final consonants	U2: p. 8, U2: p. 23, U2: p. 98, U2: p. 103, U2: p. 214, U2: p. 218, U2: p. 234, U2: p. 237, U2: p. 308, U2: p. 310
TEKS 3.2.C	alphabetize a series of words to the third letter	
TEKS 3.2.D	write complete words, thoughts, and answers legibly in cursive leaving appropriate spaces between words.	
(3) Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking—vocabulary. The student uses newly acquired vocabulary expressively. The student is expected to:		
TEKS 3.3.A	use print or digital resources to determine meaning, syllabication, and pronunciation	U2: p. 214, U2: p. 219
TEKS 3.3.B	use context within and beyond a sentence to determine the meaning of unfamiliar words and multiple-meaning words	U2: p. 178; U2: p. 181; U2: p. 182, U2: p. 308; U2: p. 311
TEKS 3.3.C	identify the meaning of and use words with affixes such as <i>im-</i> (into), <i>non-</i> , <i>dis-</i> , <i>in-</i> (not, non), <i>pre-</i> , <i>-ness</i> , <i>-y</i> , and <i>-ful</i>	U2: p. 52; U2: p. 72; U2: p. 74; U2: p. 95; U2: p. 126; U2: p. 143; U2: p. 178; U2: p. 193; U2: p. 198; U2: p. 212
TEKS 3.3.D	identify and explain the meaning of antonyms, synonyms, idioms, homophones, and homographs in a text	
(4) Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking—fluency. The student reads grade-level text with fluency and comprehension. The student is expected to use appropriate fluency (rate, accuracy, and prosody) when reading grade-level text.		
TEKS 3.4	use appropriate fluency (rate, accuracy, and prosody) when reading grade-level text	U2: p. 308, U2: p. 312
(5) Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking—self-sustained reading. The student reads grade-appropriate texts independently. The student is expected to self-select text and read independently for a sustained period of time.		
TEKS 3.5	self-select text and read independently for a sustained period of time	U2: p. 307
(6) Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:		
TEKS 3.6.A	establish purpose for reading assigned and self-selected texts	
TEKS 3.6.B	generate questions about text before, during, and after reading to deepen understanding and gain information	U2: p. 152, U2: p. 157, U2: p. 284, U2: p. 293, U2: p. 294
TEKS 3.6.C	make, correct, or confirm predictions using text features, characteristics of genre, and structures	U2: p. 284, U2: p. 286
TEKS 3.6.D	create mental images to deepen understanding	
TEKS 3.6.E	make connections to personal experiences, ideas in other texts, and society	U2: p. 52, U2: p. 63, U2: p. 70; U2: p. 152; U2: p. 157; U2: p. 250; U2: p. 263

TEXAS ESSENTIAL KNOWLEDGE AND SKILLS - GRADE 3

Unit 2		Correlation—Teacher’s Guide
TEKS 3.6.F	make inferences and use evidence to support understanding	U2: p. 52; U2: p. 63; U2: p. 70; U2: p. 178; U2: p. 181; U2: p. 191
TEKS 3.6.G	evaluate details read to determine key ideas	U2: p. 74, U2: p. 86, U2: p. 126, U2: p. 136
TEKS 3.6.H	synthesize information to create new understanding	U2: p. 52, U2: p. 63, U2: p. 152, U2: p. 164, U2: p. 250, U2: p. 263
TEKS 3.6.I	monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down	
(7) Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:		
TEKS 3.7.A	describe personal connections to a variety of sources, including self-selected texts	U2: p. 8; U2: p. 22; U2: p. 250; U2: p. 263
TEKS 3.7.B	write a response to a literary or informational text that demonstrates an understanding of a text	U2: p. 74; U2: p. 95; U2: p. 178; U2: p. 192; U2: p. 234; U2: p. 246
TEKS 3.7.C	use text evidence to support an appropriate response	U2: p. 52, U2: p. 57
TEKS 3.7.D	retell and paraphrase texts in ways that maintain meaning and logical order	
TEKS 3.7.E	interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating	U2: p. 98; U2: p. 111; U2: p. 126; U2: p. 136; U2: p. 198; U2: p. 212; U2: p. 214; U2: p. 250; U2: p. 269;
TEKS 3.7.F	respond using newly acquired vocabulary as appropriate	U2: p. 26; U2: p. 39; U2: p. 48; U2: p. 74; U2: p. 77; U2: p. 85; U2: p. 98; U2: p. 111; U2: p. 120; U2: p. 178; U2: p. 181, U2: p. 191; U2: p. 214, U2: p. 219, U2: p. 229; U2: p. 234, U2: p. 247
TEKS 3.7.G	discuss specific ideas in the text that are important to the meaning	
(8) Multiple genres: listening, speaking, reading, writing, and thinking using multiple texts—literary elements. The student recognizes and analyzes literary elements within and across increasingly complex traditional, contemporary, classical, and diverse literary texts. The student is expected to:		
TEKS 3.8.A	infer the theme of a work, distinguishing theme from topic	
TEKS 3.8.B	explain the relationships among the major and minor characters	
TEKS 3.8.C	analyze plot elements, including the sequence of events, the conflict, and the resolution	
TEKS 3.8.D	explain the influence of the setting on the plot	
(9) Multiple genres: listening, speaking, reading, writing, and thinking using multiple texts—genres. The student recognizes and analyzes genre-specific characteristics, structures, and purposes within and across increasingly complex traditional, contemporary, classical, and diverse texts. The student is expected to:		
TEKS 3.9.A	demonstrate knowledge of distinguishing characteristics of well-known children’s literature such as folktales, fables, fairy tales, legends, and myths	
TEKS 3.9.B	explain rhyme scheme, sound devices, and structural elements such as stanzas in a variety of poems	U2: p. 171
TEKS 3.9.C	discuss the elements in drama such as characters, dialogue, setting, and acts	
(D) recognize characteristics and structures of informational text, including:		
TEKS 3.9.D.i	the central idea with supporting evidence	U2: p. 26, U2: p. 39, U2: p. 52, U2: p. 63, U2: p. 74, U2: p. 77, U2: p. 198, U2: p. 201, U2: p. 272, U2: p. 275

TEXAS ESSENTIAL KNOWLEDGE AND SKILLS - GRADE 3

Unit 2		Correlation—Teacher’s Guide
TEKS 3.9.D.ii	features such as sections, tables, graphs, timelines, bullets, numbers, and bold and italicized font to support understanding	U2: p. 8; U2: p. 12; U2: p. 26; U2: p. 31; U2: p. 74; U2: p. 86; U2: p. 98; U2: p. 104; U2: p. 111; U2: p. 198; U2: p. 201; U2: p. 234; U2: p. 241; U2: p. 284; U2: p. 286; U2: p. 308; U2: p. 311
TEKS 3.9.D.iii	organizational patterns such as cause and effect and problem and solution	U2: p. 126, U2: p. 129, U2: p. 250, U2: p. 253
(E) recognize characteristics and structures of argumentative text by:		
TEKS 3.9.E.i	identifying the claim	
TEKS 3.9.E.ii	distinguishing facts from opinion	
TEKS 3.9.E.iii	identifying the intended audience or reader	
TEKS 3.9.F	recognize characteristics of multimodal and digital texts	U2: p. 272, U2: p. 274, U2: p. 275
(10) Author’s purpose and craft: listening, speaking, reading, writing, and thinking using multiple texts. The student uses critical inquiry to analyze the authors’ choices and how they influence and communicate meaning within a variety of texts. The student analyzes and applies author’s craft purposefully in order to develop his or her own products and performances. The student is expected to:		
TEKS 3.10.A	explain the author’s purpose and message within a text	U2: p. 26; U2: p. 39; U2: p. 40; U2: p. 41; U2: p. 198; U2: p. 201; U2: p. 206
TEKS 3.10.B	explain how the use of text structure contributes to the author’s purpose	U2: p. 26; U2: p. 39; U2: p. 40; U2: p. 41; U2: p. 198; U2: p. 201; U2: p. 206; U2: p. 250; U2: p. 253; U2: p. 254
TEKS 3.10.C	explain the author’s use of print and graphic features to achieve specific purposes	U2: p. 8; U2: p. 12; U2: p. 13; U2: p. 26; U2: p. 31; U2: p. 32; U2: p. 198; U2: p. 201; U2: p. 211
TEKS 3.10.D	describe how the author’s use of imagery, literal and figurative language such as simile, and sound devices such as onomatopoeia achieves specific purposes	U2: p. 171
TEKS 3.10.E	identify the use of literary devices, including first- or third-person point of view	
TEKS 3.10.F	discuss how the author’s use of language contributes to voice	
TEKS 3.10.G	identify and explain the use of hyperbole	
(11) Composition: listening, speaking, reading, writing, and thinking using multiple texts—writing process. The student uses the writing process recursively to compose multiple texts that are legible and uses appropriate conventions. The student is expected to:		
TEKS 3.11.A	plan a first draft by selecting a genre for a particular topic, purpose, and audience using a range of strategies such as brainstorming, freewriting, and mapping	U2: p. 272; U2: p. 281
(B) develop drafts into a focused, structured, and coherent piece of writing by:		
TEKS 3.11.B.i	organizing with purposeful structure including an introduction and conclusion	U2: p. 272; U2: p. 281
TEKS 3.11.B.ii	developing an engaging idea with relevant details	U2: p. 272; U2: p. 281; U2: p. 284, U2: p. 302
TEKS 3.11.C	revise drafts by adding, revise drafts to improve sentence structure and word choice by adding, deleting, combining, and rearranging ideas for coherence and clarity deleting, or rearranging words, phrases or sentences	U2: p. 284; U2: p. 302
(D) edit drafts using standard English conventions, including:		

TEXAS ESSENTIAL KNOWLEDGE AND SKILLS - GRADE 3

Unit 2		Correlation—Teacher’s Guide
TEKS 3.11.D	edit drafts using standard English conventions	
TEKS 3.11.D.i	complete simple and compound sentences with subject-verb agreement	U2: p. 126, U2: p. 143
TEKS 3.11.D.ii	past, present, and future verb tense	U2: p. 26, U2: p. 49, U2: p. 98, U2: p. 122, U2: p. 250, U2: p. 270
TEKS 3.11.D.iii	singular, plural, common, and proper nouns	U2: p. 26, U2: p. 49, U2: p. 98, U2: p. 122, U2: p. 250, U2: p. 270
TEKS 3.11.D.iv	adjectives, including their comparative and superlative forms	U2: p. 26, U2: p. 49, U2: p. 98, U2: p. 122, U2: p. 250; U2: p. 270
TEKS 3.11.D.v	adverbs that convey time and adverbs that convey manner	
TEKS 3.11.D.vi	prepositions and prepositional phrases	
TEKS 3.11.D.vii	pronouns, including subjective, objective, and possessive cases	
TEKS 3.11.D.viii	coordinating conjunctions to form compound subjects, predicates, and sentences	U2: p. 126, U2: p. 143
TEKS 3.11.D.ix	capitalization of official titles of people, holidays, and geographical names and places	
TEKS 3.11.D.x	punctuation marks including apostrophes in contractions and possessives and commas in compound sentences and items in a series	U2: p. 284; U2: p. 302
TEKS 3.11.D.xi	correct spelling of words with grade-appropriate orthographic patterns and rules and high-frequency words	U2: p. 284; U2: p. 302
TEKS 3.11.E	publish written work for appropriate audiences	U2: p. 272; U2: p. 281
(12) Composition: listening, speaking, reading, writing, and thinking using multiple texts—genres. The student uses genre characteristics and craft to compose multiple texts that are meaningful. The student is expected to:		
TEKS 3.12.A	compose literary texts, including personal narratives and poetry, using genre characteristics and craft	U2: p. 172
TEKS 3.12.B	compose informational texts, including brief compositions that convey information about a topic, using a clear central idea and genre characteristics and craft	U2: p. 214; U2: p. 230; U2: p. 272; U2: p. 281
TEKS 3.12.C	compose argumentative texts, including opinion essays, using genre characteristics and craft	
TEKS 3.12.D	compose correspondence such as thank you notes or letters	
(13) Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:		
TEKS 3.13.A	generate questions on a topic for formal and informal inquiry	
TEKS 3.13.B	develop and follow a research plan with adult assistance	
TEKS 3.13.C	identify and gather relevant information from a variety of sources	U2: p. 8, U2: p. 11; U2: p. 272; U2: p. 281
TEKS 3.13.D	identify primary and secondary sources	

TEXAS ESSENTIAL KNOWLEDGE AND SKILLS - GRADE 3**Unit 2****Correlation—Teacher’s Guide**

Unit 2		Correlation—Teacher’s Guide
TEKS 3.13.E	demonstrate understanding of information gathered	
TEKS 3.13.F	recognize the difference between paraphrasing and plagiarism when using source materials	
TEKS 3.13.G	create a works cited page	
TEKS 3.13.H	use an appropriate mode of delivery, whether written, oral, or multimodal, to present results	U2: p. 98; U2: p. 111; U2: p. 121

ENGLISH LANGUAGE PROFICIENCY STANDARDS - GRADE 3

Unit 2

Correlation—Teacher’s Guide

<p>(1) Cross-curricular second language acquisition/learning strategies. The ELL uses language learning strategies to develop an awareness of his or her own learning processes in all content areas. In order for the ELL to meet grade-level learning expectations across the foundation and enrichment curriculum, all instruction delivered in English must be linguistically accommodated (communicated, sequenced, and scaffolded) commensurate with the student’s level of English language proficiency. The student is expected to:</p>		
ELPS 1.A	use prior knowledge and experiences to understand meanings in English	U2: p. 12
ELPS 1.B	monitor oral and written language production and employ self-corrective techniques or other resources	U2: p. 212, U2: p. 248
ELPS 1.C	use strategic learning techniques such as concept mapping, drawing, memorizing, comparing, contrasting, and reviewing to acquire basic and grade-level vocabulary	U2: p. 91, U2: p. 96, U2: p. 122, U2: p. 147, U2: p. 186, U2: p. 229
ELPS 1.D	speak using learning strategies such as requesting assistance, employing non-verbal cues, and using synonyms and circumlocution (conveying ideas by defining or describing when exact English words are not known)	U2: p. 195, U2: p. 241
ELPS 1.E	internalize new basic and academic language by using and reusing it in meaningful ways in speaking and writing activities that build concept and language attainment	
ELPS 1.F	use accessible language and learn new and essential language in the process	U2: p. 96, U2: p. 147
ELPS 1.G	demonstrate an increasing ability to distinguish between formal and informal English and an increasing knowledge of when to use each one commensurate with grade-level learning expectations	
ELPS 1.H	develop and expand repertoire of learning strategies such as reasoning inductively or deductively, looking for patterns in language, and analyzing sayings and expressions commensurate with grade-level learning expectations	
<p>(2) Cross-curricular second language acquisition/listening. The ELL listens to a variety of speakers including teachers, peers, and electronic media to gain an increasing level of comprehension of newly acquired language in all content areas. ELLs may be at the beginning, intermediate, advanced, or advanced high stage of English language acquisition in listening. In order for the ELL to meet grade-level learning expectations across the foundation and enrichment curriculum, all instruction delivered in English must be linguistically accommodated (communicated, sequenced, and scaffolded) commensurate with the student’s level of English language proficiency. The student is expected to:</p>		
ELPS 2.A	distinguish sounds and intonation patterns of English with increasing ease	
ELPS 2.B	recognize elements of the English sound system in newly acquired vocabulary such as long and short vowels, silent letters, and consonant clusters	
ELPS 2.C	learn new language structures, expressions, and basic and academic vocabulary heard during classroom instruction and interactions	U2: p. 133
ELPS 2.D	monitor understanding of spoken language during classroom instruction and interactions and seek clarification as needed	

ENGLISH LANGUAGE PROFICIENCY STANDARDS - GRADE 3

Unit 2		Correlation—Teacher’s Guide
ELPS 2.E	use visual, contextual, and linguistic support to enhance and confirm understanding of increasingly complex and elaborated spoken language	U2: p. 261, U2: p. 275
ELPS 2.F	listen to and derive meaning from a variety of media such as audio tape, video, DVD, and CD ROM to build and reinforce concept and language attainment	
ELPS 2.G	understand the general meaning, main points, and important details of spoken language ranging from situations in which topics, language, and contexts are familiar to unfamiliar	
ELPS 2.H	understand implicit ideas and information in increasingly complex spoken language commensurate with grade-level learning expectations	
ELPS 2.I	demonstrate listening comprehension of increasingly complex spoken English by following directions, retelling or summarizing spoken messages, responding to questions and requests, collaborating with peers, and taking notes commensurate with content and grade-level needs	U2: p. 63, U2: p. 229, U2: p. 295
<p>(3) Cross-curricular second language acquisition/speaking. The ELL speaks in a variety of modes for a variety of purposes with an awareness of different language registers (formal/informal) using vocabulary with increasing fluency and accuracy in language arts and all content areas. ELLs may be at the beginning, intermediate, advanced, or advanced high stage of English language acquisition in speaking. In order for the ELL to meet grade-level learning expectations across the foundation and enrichment curriculum, all instruction delivered in English must be linguistically accommodated (communicated, sequenced, and scaffolded) commensurate with the student’s level of English language proficiency. The student is expected to:</p>		
ELPS 3.A	practice producing sounds of newly acquired vocabulary such as long and short vowels, silent letters, and consonant clusters to pronounce English words in a manner that is increasingly comprehensible	
ELPS 3.B	expand and internalize initial English vocabulary by learning and using high-frequency English words necessary for identifying and describing people, places, and objects, by retelling simple stories and basic information represented or supported by pictures, and by learning and using routine language needed for classroom communication	
ELPS 3.C	speak using a variety of grammatical structures, sentence lengths, sentence types, and connecting words with increasing accuracy and ease as more English is acquired	U2: p. 133, U2: p. 271
ELPS 3.D	speak using grade-level content area vocabulary in context to internalize new English words and build academic language proficiency	U2: p. 83
ELPS 3.E	share information in cooperative learning interactions	U2: p. 83, U2: p. 91, U2: p. 168
ELPS 3.F	ask and give information ranging from using a very limited bank of high-frequency, high-need, concrete vocabulary, including key words and expressions needed for basic communication in academic and social contexts, to using abstract and content-based vocabulary during extended speaking assignments	U2: p. 12, U2: p. 168
ELPS 3.G	express opinions, ideas, and feelings ranging from communicating single words and short phrases to participating in extended discussions on a variety of social and grade-appropriate academic topics	U2: p. 83

ENGLISH LANGUAGE PROFICIENCY STANDARDS - GRADE 3

Unit 2		Correlation—Teacher’s Guide
ELPS 3.H	narrate, describe, and explain with increasing specificity and detail as more English is acquired	U2: p. 22, U2: p. 63
ELPS 3.I	adapt spoken language appropriately for formal and informal purposes	
ELPS 3.J	respond orally to information presented in a wide variety of print, electronic, audio, and visual media to build and reinforce concept and language attainment	
<p>(4) Cross-curricular second language acquisition/reading. The ELL reads a variety of texts for a variety of purposes with an increasing level of comprehension in all content areas. ELLs may be at the beginning, intermediate, advanced, or advanced high stage of English language acquisition in reading. In order for the ELL to meet grade-level learning expectations across the foundation and enrichment curriculum, all instruction delivered in English must be linguistically accommodated (communicated, sequenced, and scaffolded) commensurate with the student’s level of English language proficiency. For kindergarten and grade 1, certain of these student expectations apply to text read aloud for students not yet at the stage of decoding written text. The student is expected to:</p>		
ELPS 4.A	learn relationships between sounds and letters of the English language and decode (sound out) words using a combination of skills such as recognizing sound-letter relationships and identifying cognates, affixes, roots, and base words	
ELPS 4.B	recognize directionality of English reading such as left to right and top to bottom	U2: p. 17
ELPS 4.C	develop basic sight vocabulary, derive meaning of environmental print, and comprehend English vocabulary and language structures used routinely in written classroom materials	U2: p. 133
ELPS 4.D	use prereading supports such as graphic organizers, illustrations, and pretaught topic-related vocabulary and other prereading activities to enhance comprehension of written text	U2: p. 22, U2: p. 63; U2: p. 91
ELPS 4.E	read linguistically accommodated content area material with a decreasing need for linguistic accommodations as more English is learned	U2: p. 71, U2: p. 161, U2: p. 206, U2: p. 281
ELPS 4.F	use visual and contextual support and support from peers and teachers to read grade-appropriate content area text, enhance and confirm understanding, and develop vocabulary, grasp of language structures, and background knowledge needed to comprehend increasingly challenging language	U2: p. 39, U2: p. 105, U2: p. 112, U2: p. 186, U2: p. 242, U2: p. 269, U2: p. 287
ELPS 4.G	demonstrate comprehension of increasingly complex English by participating in shared reading, retelling or summarizing material, responding to questions, and taking notes commensurate with content area and grade level needs	U2: p. 40, U2: p. 137
ELPS 4.H	read silently with increasing ease and comprehension for longer periods	
ELPS 4.I	demonstrate English comprehension and expand reading skills by employing basic reading skills such as demonstrating understanding of supporting ideas and details in text and graphic sources, summarizing text, and distinguishing main ideas from details commensurate with content area needs	

ENGLISH LANGUAGE PROFICIENCY STANDARDS - GRADE 3

Unit 2

Correlation—Teacher’s Guide

ELPS 4.J	demonstrate English comprehension and expand reading skills by employing inferential skills such as predicting, making connections between ideas, drawing inferences and conclusions from text and graphic sources, and finding supporting text evidence commensurate with content area needs	
ELPS 4.K	demonstrate English comprehension and expand reading skills by employing analytical skills such as evaluating written information and performing critical analyses commensurate with content area and grade-level needs	
<p>(5) Cross-curricular second language acquisition/writing. The ELL writes in a variety of forms with increasing accuracy to effectively address a specific purpose and audience in all content areas. ELLs may be at the beginning, intermediate, advanced, or advanced high stage of English language acquisition in writing. In order for the ELL to meet grade-level learning expectations across foundation and enrichment curriculum, all instruction delivered in English must be linguistically accommodated (communicated, sequenced, and scaffolded) commensurate with the student’s level of English language proficiency. For kindergarten and grade 1, certain of these student expectations do not apply until the student has reached the stage of generating original written text using a standard writing system. The student is expected to:</p>		
ELPS 5.A	learn relationships between sounds and letters of the English language to represent sounds when writing in English	
ELPS 5.B	write using newly acquired basic vocabulary and content-based grade-level vocabulary	U2: p. 192, U2: p. 230, U2: p. 283
ELPS 5.C	spell familiar English words with increasing accuracy, and employ English spelling patterns and rules with increasing accuracy as more English is acquired	U2: p. 24, U2: p. 241
ELPS 5.D	edit writing for standard grammar and usage, including subject-verb agreement, pronoun agreement, and appropriate verb tenses commensurate with grade-level expectations as more English is acquired	
ELPS 5.E	employ increasingly complex grammatical structures in content area writing commensurate with grade level expectations such as (i) using correct verbs, tenses, and pronouns/antecedents; (ii) using possessive case (apostrophe -s) correctly; and, (iii) using negatives and contractions correctly	U2: p. 302
ELPS 5.F	write using a variety of grade-appropriate sentence lengths, patterns, and connecting words to combine phrases, clauses, and sentences in increasingly accurate ways as more English is acquired	U2: p. 50, U2: p. 72, U2: p. 302
ELPS 5.G	narrate, describe, and explain with increasing specificity and detail to fulfill content area writing needs as more English is acquired	U2: p. 23; U2: p. 95, U2: p. 169, U2: p. 211, U2: p. 246, U2: p. 270, U2: p. 283

General Manager K-8 Humanities and SVP, Product

Alexandra Clarke

Chief Academic Officer, Elementary Humanities

Susan Lambert

Content and Editorial

Elizabeth Wade, PhD, Director,
Elementary Language Arts Content

Patricia Erno, Associate Director, Elementary ELA Instruction

Maria Martinez, Associate Director, Spanish Language Arts

Baria Jennings, EdD, Senior Content Developer

Christina Cox, Managing Editor

Product and Project Management

Ayala Falk, Director, Business and Product Strategy,
K-8 Language Arts

Amber McWilliams, Senior Product Manager

Elisabeth Hartman, Associate Product Manager

Catherine Alexander, Senior Project Manager, Spanish Language Arts

LaShon Ormond, SVP, Strategic Initiatives

Leslie Johnson, Associate Director, K-8 Language Arts

Thea Aguiar, Director of Strategic Projects, K-5 Language Arts

Zara Chaudhury, Project Manager, K-8 Language Arts

Design and Production

Tory Novikova, Product Design Director

Erin O'Donnell, Product Design Manager

Other Contributors

Patricia Beam, Bill Cheng, Ken Harney, Molly Hensley, David Herubin, Sara Hunt, Kristen Kirchner, James Mendez-Hodes, Christopher Miller, Diana Projansky, Todd Rawson, Jennifer Skelley, Julia Sverchuk, Elizabeth Thiers, Amanda Tolentino, Paige Womack

Texas Contributors

Content and Editorial

Sarah Cloos

Laia Cortes

Jayana Desai

Angela Donnelly

Claire Dorfman

Ana Mercedes Falcón

Rebecca Figueroa

Nick García

Sandra de Gennaro

Patricia Infanzón-
Rodríguez

Seamus Kirst

Michelle Koral

Sean McBride

Jacqueline Ovalle

Sofía Pereson

Lilia Perez

Sheri Pineault

Megan Reasor

Marisol Rodriguez

Jessica Roodvoets

Lyna Ward

Product and Project Management

Stephanie Koleda

Tamara Morris

Art, Design, and Production

Nanyamka Anderson

Raghav Arumugan

Dani Aviles

Olioli Buika

Sherry Choi

Stuart Dalgo

Edel Ferri

Pedro Ferreira

Nicole Galuszka

Parker-Nia Gordon

Isabel Hetrick

Ian Horst

Ashna Kapadia

Jagriti Khirwar

Julie Kim

Lisa McGarry

Emily Mendoza

Marguerite Oerlemans

Lucas De Oliveira

Tara Pajouhesh

Jackie Pierson

Dominique Ramsey

Darby Raymond-
Overstreet

Max Reinhardsen

Mia Saine

Nicole Stahl

Flore Thevoux

Jeanne Thornton

Amy Xu

Jules Zuckerberg

Series Editor-in-Chief

E. D. Hirsch Jr.

President

Linda Bevilacqua

Editorial Staff

Mick Anderson
Robin Blackshire
Laura Drummond
Emma Earnst
Lucinda Ewing
Sara Hunt
Rosie McCormick
Cynthia Peng
Liz Pettit
Tonya Ronayne
Deborah Samley
Kate Stephenson
Elizabeth Wafler
James Walsh
Sarah Zelinke

Design and Graphics Staff

Kelsie Harman
Liz Loewenstein
Bridget Moriarty
Lauren Pack

Consulting Project Management Services

ScribeConcepts.com

Additional Consulting Services

Erin Kist
Carolyn Pinkerton
Scott Ritchie
Kelina Summers

Acknowledgments

These materials are the result of the work, advice, and encouragement of numerous individuals over many years. Some of those singled out here already know the depth of our gratitude; others may be surprised to find themselves thanked publicly for help they gave quietly and generously for the sake of the enterprise alone. To helpers named and unnamed we are deeply grateful.

Contributors to Earlier Versions of These Materials

Susan B. Albaugh, Kazuko Ashizawa, Kim Berrall, Ang Blanchette, Nancy Braier, Maggie Buchanan, Paula Coyner, Kathryn M. Cummings, Michelle De Groot, Michael Donegan, Diana Espinal, Mary E. Forbes, Michael L. Ford, Sue Fulton, Carolyn Gosse, Dorrit Green, Liza Greene, Ted Hirsch, Danielle Knecht, James K. Lee, Matt Leech, Diane Henry Leipzig, Robin Luecke, Martha G. Mack, Liana Mahoney, Isabel McLean, Steve Morrison, Juliane K. Munson, Elizabeth B. Rasmussen, Ellen Sadler, Rachael L. Shaw, Sivan B. Sherman, Diane Auger Smith, Laura Tortorelli, Khara Turnbull, Miriam E. Vidaver, Michelle L. Warner, Catherine S. Whittington, Jeannette A. Williams.

We would like to extend special recognition to Program Directors Matthew Davis and Souzanne Wright, who were instrumental in the early development of this program.

Schools

We are truly grateful to the teachers, students, and administrators of the following schools for their willingness to field-test these materials and for their invaluable advice: Capitol View Elementary, Challenge Foundation Academy (IN), Community Academy Public Charter School, Lake Lure Classical Academy, Lepanto Elementary School, New Holland Core Knowledge Academy, Paramount School of Excellence, Pioneer Challenge Foundation Academy, PS 26R (the Carteret School), PS 30X (Wilton School), PS 50X (Clara Barton School), PS 96Q, PS 102X (Joseph O. Loretan), PS 104Q (the Bays Water), PS 214K (Michael Friedsam), PS 223Q (Lyndon B. Johnson School), PS 308K (Clara Cardwell), PS 333Q (Goldie Maple Academy), Sequoyah Elementary School, South Shore Charter Public School, Spartanburg Charter School, Steed Elementary School, Thomas Jefferson Classical Academy, Three Oaks Elementary, West Manor Elementary.

And a special thanks to the Pilot Coordinators, Anita Henderson, Yasmin Lugo-Hernandez, and Susan Smith, whose suggestions and day-to-day support to teachers using these materials in their classrooms were critical.

Credits

Cover: Amplify; 11 (Student Reader, Rattenborough's Guide to Animals): Amplify; 13 (Rattenborough): (illustrations): Alisa Haggard; 13 (Rattenborough in one habitat): (illustrations): Alisa Haggard; (photographs): Shutterstock; 15 (Rattenborough in three habitats): (illustrations): Alisa Haggard; 16 (Rattenborough in two water habitats): (illustrations): Alisa Haggard; (photographs): Shutterstock; 18 (Different animals eat different things): (photographs): Shutterstock; 31 (All living things are classified): (illustrations): Alisa Haggard; (photographs): Shutterstock; 33 (Plant characteristics): Shutterstock; 34 (Animals characteristics): Shutterstock; 35 (Scientists classify living things): Shutterstock; 36 (Insects are the largest group of animals): Shutterstock; 39 (Rattenborough, animal expert with animals and Earth): Shutterstock; 39 (Rattenborough): (illustrations): Alisa Haggard; 39 (Salamander and squirrel): Shutterstock; 40 (Taxonomists: From Linnaeus to today): (illustrations): Simini Blocker; 41 ("Living Things" chart): Shutterstock; 42 (Child's spine): Shutterstock; 42 (Taxonomy diagram): Core Knowledge Staff; 42 (Invertebrate and Vertebrate Graphic): Core Knowledge Staff; 43 (Vertebrate animals around the world, illustrations): (illustrations): Alisa Haggard; 43 (frog): Shutterstock; 43 (fish): Shutterstock; 43 (hippo): Shutterstock; 43 (crane): Shutterstock; 43 (snake): Jan Rehschuh/Wikimedia Commons/Creative Commons Attribution-Share Alike 3.0 Unported, <http://creativecommons.org/licenses/by-sa/3.0/deed.en/> Modified from Original; 45 (Unexplored places on Earth): Shutterstock; 45 (Classification questions): Shutterstock; 57 (Scientists classify living things): Shutterstock; 59 (Humans classified as vertebrates): Shutterstock; 63 (Animals and Their Spines): (illustrations): Alisa Haggard; (photographs): Shutterstock; 65 (Insects): Shutterstock; 66 (Insects and arachnids): Shutterstock; 66 (Crustaceans): Shutterstock; 67 (Other Invertebrates): Shutterstock; 67 (Classification of a Housecat): Shutterstock; 78 (Vertebrate Animals Around the World): (illustrations): Alisa Haggard; (photographs): Shutterstock; Jan Rehschuh/Wikimedia Commons/Creative Commons Attribution-Share Alike 3.0 Unported, <http://creativecommons.org/licenses/by-sa/3.0/deed.en/> Modified from Original; 78 (Paolo and piranhas): (illustrations): Alisa Haggard; (photographs): Shutterstock; 79 (Taking child's temperature): Shutterstock; 80 (Anna and anaconda): (illustrations): Alisa Haggard; (photographs): Shutterstock; 80 (Tabitha and toad): (illustrations): Alisa Haggard; (photographs): Shutterstock; 81 (Ebenezer and egret): (illustrations): Alisa Haggard; (photographs): Shutterstock; 82 (Hilda and hippotamus): (illustrations): Alisa Haggard; (photographs): Shutterstock; 86 (Scientists classify living things): Shutterstock; 92 (Crocodiles cool off): Shutterstock; 104 (Fish come in many sizes and colors): Shutterstock; 106 (Scales, Tail, Gills, Fins): Shutterstock; 107 (These tropical fish live in a saltwater habitat.): Shutterstock; 111 (Rainforest with Paolo): (illustrations): Erika Baird; Alisa Haggard; 112 (Earth's oceans and fish): Shutterstock; 112 (Trout and salmon): Shutterstock; 113 (Amazon River and piranha): Shutterstock; 113 (Red-Bellied Piranha): Shutterstock; 114 (Diagram of fish): Shutterstock; 114 (Child snorkeling and fish swimming)-Fish scales: Shutterstock; (Rattenborough): Alisa Haggard; 115 (Fish scales): Shutterstock; (Rattenborough): Alisa Haggard; 115 (Fish eggs and shark mother with baby): Shutterstock; 116 (Bony fish, cartilaginous fish, and jawless fish): Shutterstock; 129 (Rainforest with Tabitha): (illustrations): Erika Baird; Alisa Haggard; 129 (Toad, and toad with vertebrae): (illustrations): Simini Blocker; (photographs): Shutterstock; 130 (Tabitha jumping in and out of the water): (illustrations): Alisa Haggard; (photographs): Shutterstock; 131 (Toad eggs): Shutterstock; 131 (Tadpole's metamorphosis): Shutterstock; 133 (Fish, early amphibian, and fossil): Shutterstock; 138 (The life cycle of a frog or toad): Shutterstock; 139 (Bottom: A young amphibian leaving the pond for land. Top: The life cycle of a frog or toad: Shutterstock; 140 (This toad may be preparing to hibernate for the winter.): Shutterstock; 153 (An American green tree frog): Public Domain; 154 (Tree frog's long toes with suction): Public Domain; 156 (American green tree frog is nocturnal): Shutterstock; 157 (Tree frog in Mexico and Central America.): Shutterstock; 159 (Sapphire blue species of poison dart frog.): Public Domain; 160 (Poison dart frog.): Cliff/Flickr via CC BY 2.0; 160 (Poison dart frogs brightly colored skin): Public Domain; 161 (Strawberry Poison-dart Frog): Public Domain

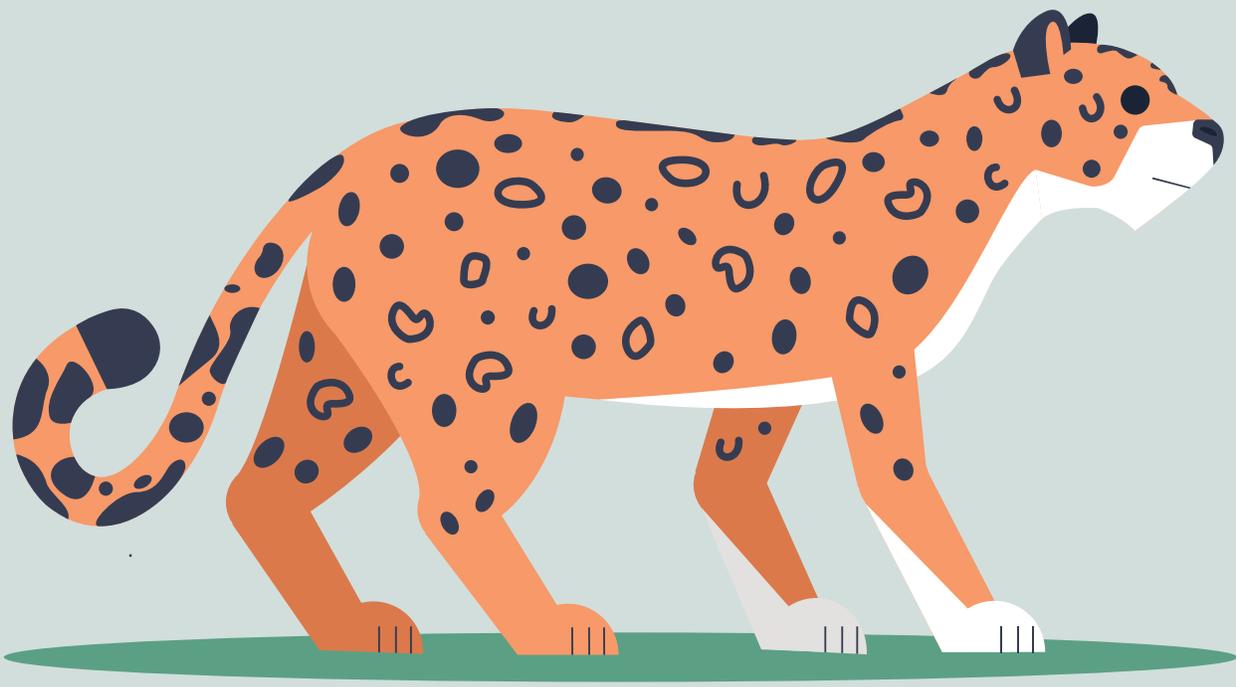


Grade 3 | Unit 2 | Teacher Guide
Scales, Feathers, and Fur: Animal Classification

ISBN 9781683919605



9 781683 919605



Grade 3

Unit 2 | Activity Book

Scales, Feathers, and Fur: Animal Classification

Grade 3

Unit 2

Scales, Feathers, and Fur: Animal Classification

Activity Book

Notice and Disclaimer: The agency has developed these learning resources as a contingency option for school districts. These are optional resources intended to assist in the delivery of instructional materials in this time of public health crisis. Feedback will be gathered from educators and organizations across the state and will inform the continuous improvement of subsequent units and editions. School districts and charter schools retain the responsibility to educate their students and should consult with their legal counsel regarding compliance with applicable legal and constitutional requirements and prohibitions.

Given the timeline for development, errors are to be expected. If you find an error, please email us at **texashomelearning@tea.texas.gov**.

ISBN 978-1-64383-735-2

This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

You are free:

to Share—to copy, distribute, and transmit the work

to Remix—to adapt the work

Under the following conditions:

Attribution—You must attribute any adaptations of the work in the following manner:

This work is based on original works of Amplify Education, Inc. (amplify.com) and the Core Knowledge Foundation (coreknowledge.org) made available under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License. This does not in any way imply endorsement by those authors of this work.

Noncommercial—You may not use this work for commercial purposes.

Share Alike—If you alter, transform, or build upon this work, you may distribute the resulting work only under the same or similar license to this one.

With the understanding that:

For any reuse or distribution, you must make clear to others the license terms of this work. The best way to do this is with a link to this web page:

<https://creativecommons.org/licenses/by-nc-sa/4.0/>

© 2020 Amplify Education, Inc.
amplify.com

Trademarks and trade names are shown in this book strictly for illustrative and educational purposes and are the property of their respective owners. References herein should not be regarded as affecting the validity of said trademarks and trade names.

Printed in Mexico
01 XXX 2021

Unit 2

Scales, Feathers, and Fur: Animal Classification

Activity Book

This Activity Book contains activity pages that accompany the lessons from the Unit 2 Teacher Guide. The activity pages are organized and numbered according to the lesson number and the order in which they are used within the lesson. For example, if there are two activity pages for Lesson 4, the first will be numbered 4.1 and the second 4.2. The Activity Book is a student component, which means each student should have an Activity Book.

NAME: _____

DATE: _____

Animal Image

Directions: Record your observations about the animal below. Be sure to give it a name.



NAME: _____

DATE: _____

Animal Webcam Observations

Animal Researchers! Use this activity page to describe each animal and record its actions.

Researcher's Name: _____ Date of Observation: _____

During your observation, think about the following questions:

- *What is the animal doing?*
- *How would you describe the animal?*
- *How would you describe the habitat?*
- *What would animal researchers notice about this animal?*

Animals	What I already know	Time	Observation
Asian small-clawed otter			
Clouded leopard			
Elephant			

Animals	What I already know	Time	Observation
Fishing cats			
Lions			
Naked mole rat			
Orangutan			
Panda			

NAME: _____

DATE: _____

Rattenborough

Directions: Write down what you remember about Rattenborough.



Text Feature Project Hunt

1. Divide a piece of paper or file folder into eight equal squares.
2. Go back to the Reader to complete the task for each text feature; write each answer inside one of the eight squares until all squares are filled.

<p>Table of contents: (definition)</p> <ul style="list-style-type: none"> – Write your own definition of a table of contents. – Choose one title in the table of contents that you are excited to read. – Include the page number. 	<p>Heading: (definition)</p> <ul style="list-style-type: none"> – Write your own definition of a heading. – Choose one heading from your Reader. – Include the page number.
<p>Bold print words: (definition)</p> <ul style="list-style-type: none"> – Write your own definition of bold print words. – Copy two bold print words. – Include the page numbers. 	<p>Photo and caption: (definition)</p> <ul style="list-style-type: none"> – Write your own definition of a photo and caption. – Find a photo in your Reader. – Draw the photo and include the caption and page number.
<p>Chart: (definition)</p> <ul style="list-style-type: none"> – Write your own definition of a chart. – Find a chart in your Reader. – Draw the chart and include the page number. 	<p>Map: (definition)</p> <ul style="list-style-type: none"> – Write your own definition of a map. – Find a map in your Reader. – Draw the map and include the page number.
<p>Glossary: (definition)</p> <ul style="list-style-type: none"> – Write your own definition of a glossary. – Choose two words from the glossary. – Write each word and the definition. 	<p>Diagram: (definition)</p> <ul style="list-style-type: none"> – Write your own definition of a diagram. – Find one diagram in your Reader. – Draw the diagram and include the page number.

NAME: _____

DATE: _____

Text Feature Project Hunt: Support

Use the following definitions as references for your project hunt.

Table of contents: lists an overview of what texts are in the Reader and where to find them
Heading: provides information about key topics in the text
Bold print words: shows important words or concepts in the reading
Photo and caption: visually shows what the text is about; caption describes the photo
Chart: summarizes information that is in the Reader
Map: shows specific areas that are talked about in the text
Glossary: gives the definition of select words
Diagram: labels places or the parts of something discussed in the text

NAME: _____

DATE: _____

Spelling Practice

	Root Word	-ed	-ing
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____
6.	_____	_____	_____
7.	_____	_____	_____
8.	_____	_____	_____
9.	_____	_____	_____
10.	_____	_____	_____

Challenge Word: _____

Challenge Word: _____

NAME: _____

DATE: _____

Family Letter

Dear Family Members,

These weekly family letters will come home each week. They will include spelling words and an explanation of the Reader chapters your child will read this week. Please help your child succeed in spelling by taking a few minutes each evening to review the words together. Helpful activities for your child to do include: spelling the words orally, writing sentences using the words, or simply copying the words.

Spelling Words

For the first time this year, your child has been assigned spelling words. This week, we are focusing on adding the suffixes *-ed* and *-ing* to words. On the assessment, your child will be asked to write not only the root words listed in the following list but also those root words with the suffixes *-ed* and *-ing* added. On Friday, your child will be assessed on these words.

Students have reviewed the rules for adding *-ed* and *-ing* to words. When words end with CVC (Consonant–Vowel–Consonant), the final consonant must be doubled before adding *-ed* or *-ing*. The root words that are starred in the list follow this rule. For example, the root word *hop* becomes *hopped* and *hopping*. When words end with two consonants, the suffixes *-ed* and *-ing* are simply added. There is no doubling of consonants. For example, the root word *finish* becomes *finished* and *finishing*.

Students have been assigned two Challenge Words, *give* and *live*, to spell this week. Challenge Words are words used very often. They may not follow spelling patterns and need to be memorized. Students will not be responsible for adding suffixes to the Challenge Words on the assessment.

The spelling words, including the Challenge Words, are listed below:

1. finish	7. hop*
2. discuss	8. rub*
3. submit*	9. grab*
4. stretch	10. ship*
5. plan*	Challenge Word: <i>give</i>
6. patch	Challenge Word: <i>live (rhymes with give)</i>

Student Reader

The Reader for Unit 2 is entitled *Rattenborough’s Guide to Animals*. Although it is a nonfiction reader, Rattenborough, a fictional character, is the narrator who guides students through the factual information. We are using Rattenborough as the narrator in this Reader to make the informational text more accessible to students. The Reader consists of selections that explain the way in which animals are classified by scientists.

This week, students will learn about the characteristics of living things and how scientists classify living things using these characteristics. Characteristics that scientists use include whether animals are warm-blooded or cold-blooded and whether they are vertebrates or invertebrates. Finally, a chapter on fish is included.

NAME: _____

1.8

TAKE-HOME

DATE: _____

Spelling

This week's spelling words focus on the -ed and -ing endings. Students will read the passage below and underline words with the -ed and -ing endings. Together, discuss the meaning of each underlined word.

Introduction: Meet “Rattenborough”

Greetings! Rattenborough, the famous explorer and **animal** expert here! Remember me? I taught you all about **animals** and **habitats** when you were just little kids in first grade. I've been busy since then traveling around the world. But, I'm back now to teach you everything I've learned about **animals** during my travels.

First, let's take a quick look at what you learned in first grade. Do you remember what a **habitat** is? A **habitat** is the place where **animals** and plants live. We learned that there are different **habitats** all over the world with different kinds of **animals** and plants living there.

We visited a desert **habitat** where it was very hot and dry. It hardly ever rains in a desert so the plants and **animals** that live there have to be able to get by with very little water. I bet you remember that cactus plants live in the desert, along with snakes and lizards.

We also visited an African **savanna**. A **savanna** is also called a grassland. There were lots of interesting **animals** living there—zebras, elephants, and even lions! To be perfectly honest, I was always a little nervous while we were in the **savanna**!

Next, we checked out some different kinds of forests. We went to a hardwood forest full of trees with leaves that change color and drop off in the fall. We saw squirrels, deer, and even bears. We saw lots of different kinds of birds in those tall trees.

Then, we visited a tropical rainforest that was very hot, humid, and wet. There were lots of birds in this forest, too. These birds were colorful, tropical birds like toucans and parrots.

Last, but not least, we visited freshwater and saltwater **habitats**. In the freshwater **habitat**, we saw fish, turtles, ducks, and beavers. In the saltwater **habitat** of the sea, we saw starfish, crabs, lobsters, and sharks!

Besides learning about **habitats** in first grade, we also studied the different kinds of things that **animals** eat. Do you remember talking about **herbivores**, **carnivores**, and **omnivores**? We learned that you can sort animals by what they eat.

So, get ready because we are going to learn a lot more about how to sort **animals**. Rattenborough, your personal **animal** expert, at your service!

See you next time!

NAME: _____

DATE: _____

Living Things: Text Features Scavenger Hunt

Text feature	Is this text feature in the chapter? (yes or no)	Page	Evidence
Table of contents			List two chapters in the table of contents.
Heading			What is the heading?
Bold print words			What are the bolded print words?
Photo and caption			What is in the photo? What is the caption?

Diagram			What is the diagram?
Chart			What is the chart?
Map			What is the map?
Glossary			What is in the glossary?

1. What four characteristics do all living things have in common?

2. What text feature from the Reader could help you answer the previous question?

Author's Purpose

In the 1700s, zoologist Carolus Linnaeus made a big leap for science. He set up an animal classification system. He grouped animals with similar features together. He depended mainly on human observation to do this. He did not have the tools we have now. Today, scientists use special technologies to find hidden similarities among animals. For example, they found that chimpanzees are more closely related to us than they are to gorillas. In fact, we and the chimps share an ape ancestor that lived millions of years ago! Chimps are part of a group called the great African apes. Gorillas, bonobos, and orangutans are part of this group, too. Linnaeus placed these apes in one group and us in a different one, all by ourselves. However, new research has changed things. The great African apes have joined us as part of one family—the hominids. This was a big leap for science. As science continues to advance, the way we classify all the world's animals will continue to change, too.

1. Why did the author write this passage?

2. Is the author trying to answer, explain, or describe? Explain your answer.

1. Why did the author write this passage?

2. Is the author trying to answer, explain, or describe? Explain your answer.

NAME: _____

DATE: _____

Nouns, Verbs, and Adjectives

Circle the nouns, draw a wiggly line under the verbs, and draw a box around the adjectives. Draw an arrow from the adjective to the noun it describes.

The old, brown bear protects the small cubs.

1. One cage holds colorful birds.
2. Sam rushed to the nearest window.
3. My red toy train raced around the track.
4. Frank skates down the steep hill.
5. During the hot summer she plays at the beach.
6. Speedy jets arrive at the busy airport.
7. My favorite aunt stays with a good friend at her home.
8. He swallowed the hot and sweet donuts.
9. The brown apple looks rotten.
10. Sam, Sally, and Sue attend Johnson Elementary School.

NAME: _____

DATE: _____

Vertebrate or Invertebrate Connection

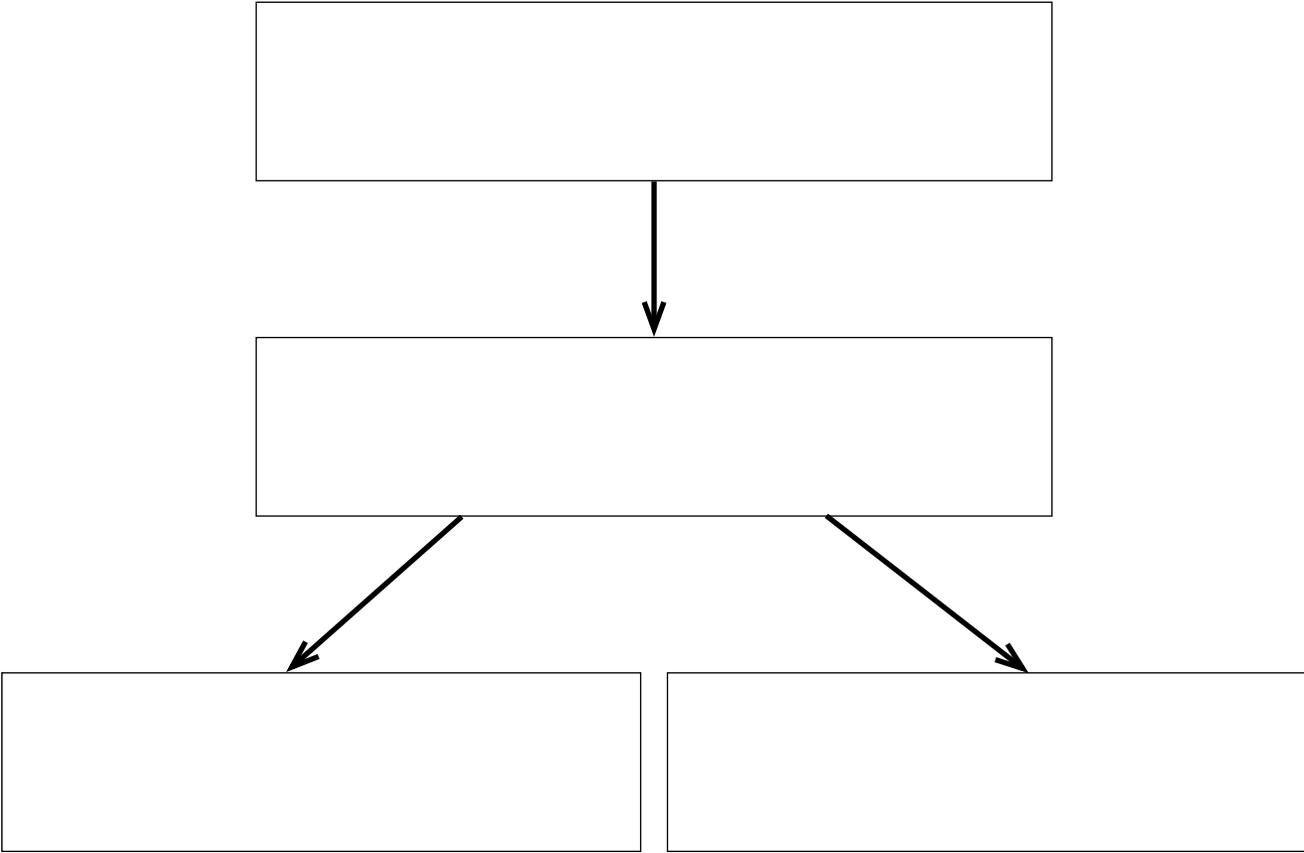
1. How are vertebrates and invertebrates alike?

2. How are vertebrates and invertebrates different?

3. How are all vertebrates alike?

4. How are all invertebrates alike?

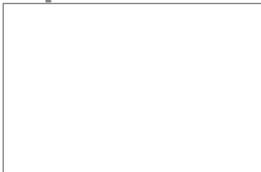
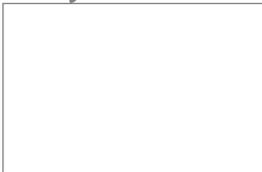
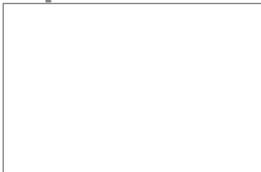
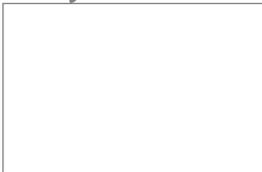
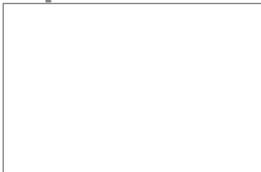
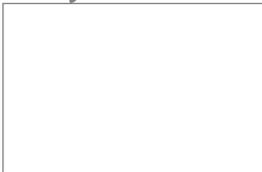
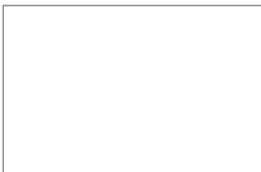
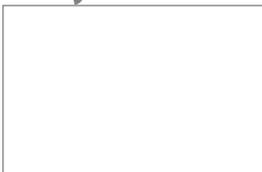
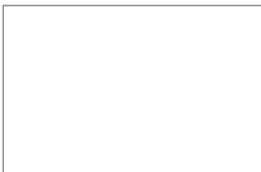
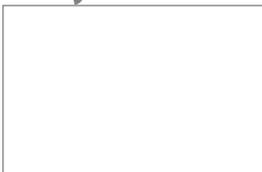
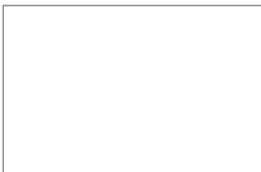
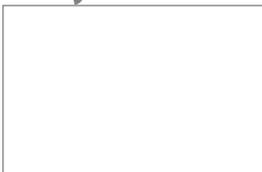
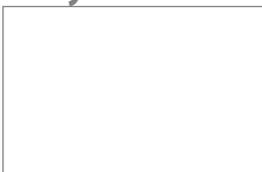
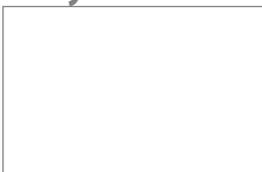
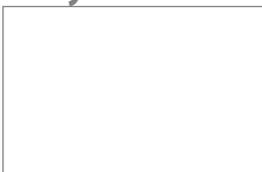
5. Fill in the chart with the following key words: vertebrates, invertebrates, living things, and animals.



NAME: _____

DATE: _____

Animal Classification Foldable

	<p>Name: Date:</p> <p>My animal classification foldable</p>				
	<table><tr><td>Fish</td><td>Body</td></tr><tr><td></td><td></td></tr></table>	Fish	Body		
Fish	Body				
					
	<table><tr><td>Amphibians</td><td>Body</td></tr><tr><td></td><td></td></tr></table>	Amphibians	Body		
Amphibians	Body				
					
	<table><tr><td>Reptile</td><td>Body</td></tr><tr><td></td><td></td></tr></table>	Reptile	Body		
Reptile	Body				
					
	<table><tr><td>Birds</td><td>Body</td></tr><tr><td></td><td></td></tr></table>	Birds	Body		
Birds	Body				
					
	<table><tr><td>Mammals</td><td>Body</td></tr><tr><td></td><td></td></tr></table>	Mammals	Body		
Mammals	Body				
					

<p>Cold-blooded or warm-blooded</p> <p>Body design:</p> <p>Habitat:</p>	<p>Vertebrate or invertebrate</p> <p>Reproduction:</p> <p>Pattern-breaker:</p> <p>Local animals:</p>
<p>Cold-blooded or warm-blooded</p> <p>Body design:</p> <p>Habitat:</p>	<p>Vertebrate or invertebrate</p> <p>Reproduction:</p> <p>Pattern-breaker:</p> <p>Local animals:</p>
<p>Cold-blooded or warm-blooded</p> <p>Body design:</p> <p>Habitat:</p>	<p>Vertebrate or invertebrate</p> <p>Reproduction:</p> <p>Pattern-breaker:</p> <p>Local animals:</p>
<p>Cold-blooded or warm-blooded</p> <p>Body design:</p> <p>Habitat:</p>	<p>Vertebrate or invertebrate</p> <p>Reproduction:</p> <p>Pattern-breaker:</p> <p>Local animals:</p>
<p>Cold-blooded or warm-blooded</p> <p>Body design:</p> <p>Habitat:</p>	<p>Vertebrate or invertebrate</p> <p>Reproduction:</p> <p>Pattern-breaker:</p> <p>Local animals:</p>
<p>Cold-blooded or warm-blooded</p> <p>Body design:</p> <p>Habitat:</p>	<p>Vertebrate or invertebrate</p> <p>Reproduction:</p> <p>Pattern-breaker:</p> <p>Local animals:</p>

Compare Two Texts

Directions: Read the short passages. Using a yellow marker, highlight the topics that are the same. Using an orange marker, circle the information that is different.

<p style="text-align: center;">Reading: “Vertebrates or Invertebrates?”</p>	<p style="text-align: center;">Read-aloud: “Vertebrate Animals”</p>
<p>Many other animals also are vertebrates. All mammals, reptiles, fish, and birds have a backbone, so they are all vertebrates. They have some type of spinal cord, too.</p> <p>Animals with a backbone come in all different shapes and sizes. Apes, rhinos, horses, rabbits, bats, and, yes, rats and humans, too are all mammals and vertebrates. Lizards, turtles, snakes, and crocodiles are reptiles and vertebrates. Huge sharks and tiny goldfish are vertebrates. Small hummingbirds and large eagles are vertebrates, too.</p>	<p>For today, let’s take a glimpse at the backbones of the five animal species to which my five friends belong. We’ve seen that a hippopotamus has a backbone. Next, let’s take a look at one of Ebenezer’s fellow egrets. Its backbone, or spinal column, helps it to hold its head up high and protects its spinal cord. Like all egrets, Ebenezer could not live without his backbone. All birds have backbones, or vertebrae.</p> <p>Snakes don’t look like they have backbones, do they? Even though snakes slither—or slip and slide along—they absolutely do have backbones! A snake’s vertebrae, like Anna Anaconda’s, run the length of its body and swing low to the ground as its muscles help it move along the ground or climb up trees. All reptiles have backbones. So, you can’t always tell from the outside whether an animal is a vertebrate with a spine (backbone), or whether it’s an invertebrate.</p>

<p style="text-align: center;">Reading: “Vertebrates or Invertebrates?”</p>	<p style="text-align: center;">Read-aloud: “Vertebrate Animals”</p>
	<p>How about fish? Would you say fish have a backbone? The answer is yes! All fish have backbones, too, just as reptiles, birds, and mammals do. It’s very tricky to see, but if you took an x-ray of its body, you would see that all the other tiny bones that make up the skeleton of the fish are connected to its spine. Paolo told me that even though all fish have backbones, some fish—like sharks and stingrays—have backbones that are made of lighter and more bendable cartilage instead of hard bone, allowing them to be more flexible and travel more quickly.</p> <p>That leaves amphibians. Take a look at my animal friends one more time; pay close attention to the toad next to Tabitha. It’s hard to tell when you look at a toad’s body that there is a backbone inside! Now tell me—do toads have backbones? Yes, to be sure, they certainly do! Toads are vertebrates, too! All amphibians have backbones! That means that all five of the animals you’ve seen today are vertebrates. They all have backbones.</p>

NAME: _____

DATE: _____

Directions: Read the short passages. Using a yellow marker, highlight the topics that are the same. Using an orange marker, circle the information that is different.

Reading: “Vertebrates or Invertebrates?”	Read-aloud: “Vertebrate Animals”
<p>But there are many more animals that do not have a backbone. Animals without backbones are called invertebrates. Insects are the largest group in the animal kingdom. Insects are also the largest invertebrates. Insects include flies, wasps, beetles, cockroaches, ladybugs, and butterflies. Other kinds of invertebrates include earthworms and spiders.</p>	<p>Think how many insects there must be on our planet! They make up three quarters of all the species in the animal kingdom! Can you name a few of the many animals in the insect group? Flies, wasps, beetles, cockroaches, ladybugs, and butterflies are all insects. There are surely a lot more species of insects than there are species of amphibians, mammals, birds, fish, and reptiles all put together!</p> <p>Even though insects are by far the largest group of invertebrates, they are not the only invertebrates. Here’s another question for you to think about. Close your eyes and pretend you are a taxonomist for a moment. Can you think of any other animals without backbones? Here’s a hint: instead of internal vertebrae, these animals have an external, or outer, hard body covering.</p>

<p style="text-align: center;">Reading: “Vertebrates or Invertebrates?”</p>	<p style="text-align: center;">Read-aloud: “Vertebrate Animals”</p>
	<p>The largest group of invertebrates is made up of arthropods. Insects make up the largest group of arthropods. Another large group of arthropods includes arachnids. Spiders are arachnids, and so are ticks, daddy longlegs, and scorpions. Insects have six legs and three body parts. The ant has very long antennae—they almost look like legs! In comparison, arachnids have eight legs and two body parts. Instead of having flexible internal skeletons, all of the arthropods wear a tough exoskeleton, or protective covering, on the outside. I bet you can recognize some of these common examples of insects and arachnids.</p>

NAME: _____

DATE: _____

Blank Busters

Follow along with your teacher to fill in the blanks with the correct spelling words. The root words are listed in the box below. You will not use a word more than once.

hop	rub	ship	grab	patch
plan	stretch	finish	discuss	submit

1. All the groups _____ their ideas for the science fair to our teacher before the Friday deadline.
2. My sister asked, “Will you please _____ sunscreen on my back since I can’t reach it?”
3. My family is _____ a surprise party for my grandfather’s birthday.
4. Marcus _____ out my new soccer socks when he borrowed them for practice.
5. Mom peeked in my room to be sure I was _____ the last question on my math homework.
6. Lisa _____ her hat and gloves and started walking to the bus stop.

7. My aunt who lives in England is _____ us some clothes that her children can no longer wear.
8. Rachel's mom _____ the hole in her skirt so she could wear it again.
9. A toad _____ out of the bushes near the drain and onto the sidewalk.
10. Our baseball coach wanted to _____ last night's game during today's practice.

NAME: _____

DATE: _____

Blank Busters

Create your own *Blank Busters* sentences using three words from this week's spelling list. Do not fill in the blanks—you will do that in class when you bring this back!

Example: My aunt is _____ us some clothes that her children can no longer wear.

Root Word	-ed	-ing
hop	hopped	hopping
rub	rubbed	rubbing
ship	shipped	shipping
grab	grabbed	grabbing
patch	patched	patching
plan	planned	planning
stretch	stretched	stretching
finish	finished	finishing
discuss	discussed	discussing
submit	submitted	submitting

1. _____

2. _____

3. _____

NAME: _____

4.1

ACTIVITY PAGE

DATE: _____

All My Best Friends Represent Vertebrates



Warm-Blooded and Cold-Blooded Animals

List the statements that refer to warm-blooded animals under the heading “Warm-Blooded Animals.” List the statements that refer to cold-blooded animals under the heading “Cold-Blooded Animals.”

Use energy from what they eat to keep their bodies warm.

Sweat to stay cool.

Drink lots of water to stay cool.

Can only live in certain habitats.

An example would be crocodiles.

An example would be third-grade children.

Body temperature changes depending on the outside temperature.

Use what is around them to stay warm or cool.

Warm-Blooded Animals

1. _____

2. _____

3. _____

4. _____

Cold-Blooded Animals

1. _____

2. _____

3. _____

4. _____

***un-*: Prefix Meaning “not”**

unable —(adjective) cannot do something	
unnecessary —(adjective) not needed	
uneven —(adjective) not the same in size, length, or amount	
unsafe —(adjective) not protected from harm or danger	

Write the correct word to complete each sentence.

unnecessary	unsafe	unsure	unwell
-------------	--------	--------	--------

1. Dad stayed up late working on a presentation and felt _____ this morning.
2. The baby bird hesitated and looked _____ about flying from the tree branch to the ground.
3. It is _____ to cross the street without first looking both ways.
4. Write your own sentence using the one word left in the box.

***non-*: Prefix Meaning “not”**

nonliving —(adjective) not alive	
nonabsorbent —(adjective) not able to soak up liquid	
nonverbal —(adjective) does not use spoken words	
nondairy —(adjective) not made with milk	

Write the correct word to complete each sentence.

nondairy	nonthreatening	nonfictional	nonverbal
----------	----------------	--------------	-----------

1. Becca is allergic to dairy products so she can only have _____ food and drink, like soy milk or tofu.
2. My brother and I had a _____ agreement to let our cousin bat first in the baseball game.
3. The clouds in the sky today look _____ since they are white and fluffy, not dark and gray.
4. Write your own sentence using the one word left in the box.

Warm-Blooded and Cold-Blooded Animals

Rattenborough here again! In the last chapter, you learned how scientists classify living things into groups called kingdoms. You learned about the animal and plant kingdoms. You also learned that animals and other living things are classified into more specific groups.

Today, you will learn more about the animal kingdom. You will learn that there are many kinds of animals that have different characteristics. Scientists study these different characteristics to divide the animal kingdom into more specific groups.

Many animals—such as cats, mice, rats, cows, elephants, tigers, and even people—belong to a group called **mammals**. So, you and I are **mammals**! All **mammals** have hair, but some have more hair, or fur, than others. You have to get pretty close to an elephant to see its hair, but it is a **mammal**.

Another characteristic of **mammals** is that they give birth to live babies. **Mammal** babies begin breathing, moving, and looking for food as soon as they are born. **Mammal** mothers make milk to feed their newborns. This is another key characteristic of all **mammals**.

Do you think this **crocodile** is a **mammal**?

Answer: No!

Why not?

- **Crocodiles** have **scales**, not hair or fur.
- **Crocodiles** lay eggs and baby crocodiles hatch from those eggs.
- A baby **crocodile** does not get milk from its mother. Its first meal might be a bug. Later, it will eat bigger animals.

Crocodiles belong to a different group of animals called **reptiles**, along with snakes, lizards, and turtles.

Scientists also classify animals as **mammals** or **reptiles** based on how the animals control their body temperature. All animals need to keep a **constant temperature** inside their bodies for their bodies to work properly. If an animal gets too hot or too cold, its body will not work the way it should. An animal may become sick or even die.

Mammals are **warm-blooded** animals. When **warm-blooded** animals are in a cold place, they use energy from food they eat to help keep their bodies warm. Some **warm-blooded** animals shiver to keep warm. When they shiver, their bodies make heat to keep warm.

When **warm-blooded** animals are somewhere hot, their bodies react in a different way to cool off. Some **warm-blooded** animals, like people, sweat to stay cool. Dogs pant to stay cool. Other **warm-blooded** animals drink lots of water as a way to cool off. Did you know that cows need to drink almost a bathtub full of water a day?

Warm-blooded animals act in different ways to maintain a **constant temperature** inside their bodies. **Mammals** can live in habitats with different **temperatures** because their bodies do not rely on the environment. **Warm-blooded** animals, like **mammals**, must eat often to make energy to heat or cool their bodies. Most **warm-blooded** animals need to eat every day. Some need to eat every hour!

Reptiles are **cold-blooded** animals. The body temperature of **cold-blooded** animals changes depending on the outside **temperature**. They become hot when it is hot outside and cold when it is cold outside. But **cold-blooded** animals must also keep a **constant temperature** for their bodies to work properly.

NAME: _____

DATE: _____

Cold-blooded animals do not use energy from their bodies to stay warm or cool. Instead they use what is around them to keep warm or keep cool. **Crocodiles** stay in water or mud in order to stay cool on hot days. If they need to warm up on cooler days, they bask in the sun.

While **warm-blooded** animals can live in just about any habitat, **cold-blooded** animals can only live in certain habitats.

Cold-blooded animals do not need to eat as often as **warm-blooded** animals. This is because they do not need lots of food to make energy to warm or cool their bodies. Most **crocodiles** only eat once a week, but they can survive for months and sometimes years without eating!

Choose one paragraph from the reading and complete the diagram:

Central idea:
Supporting detail:
Supporting detail:
Supporting detail:

NAME: _____

DATE: _____

Spelling Assessment

	Root Word	-ed	-ing
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____
6.	_____	_____	_____
7.	_____	_____	_____
8.	_____	_____	_____
9.	_____	_____	_____
10.	_____	_____	_____

Challenge Word: _____

Challenge Word: _____

Dictated Sentence

1. _____

Fish and Gills: Matching

Draw a line to connect the text feature to the correct picture.

Table of contents

Fish

Heading

G
gill—one of a pair of organs fish use to breathe underwater (**gills**)

Bold print words

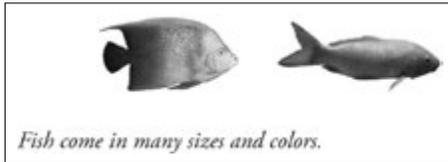
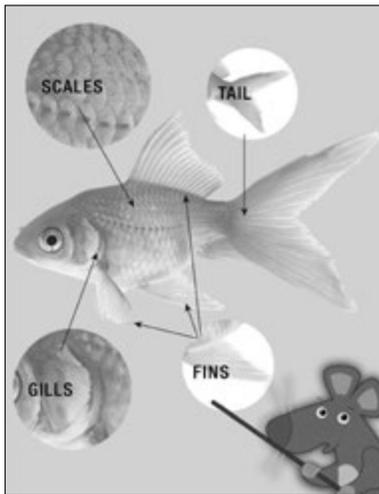


Photo and caption

aquatic animals

Chart



Map

Glossary

Diagram

Introduction: Meet Rattenborough	2
Chapter 1: Classifying Living Things	10
Chapter 2: Warm-Blooded and Cold-Blooded Animals.	20
Chapter 3: Vertebrate or Invertebrate?	34
Chapter 4: Fish	44
Chapter 5: Amphibians.	52

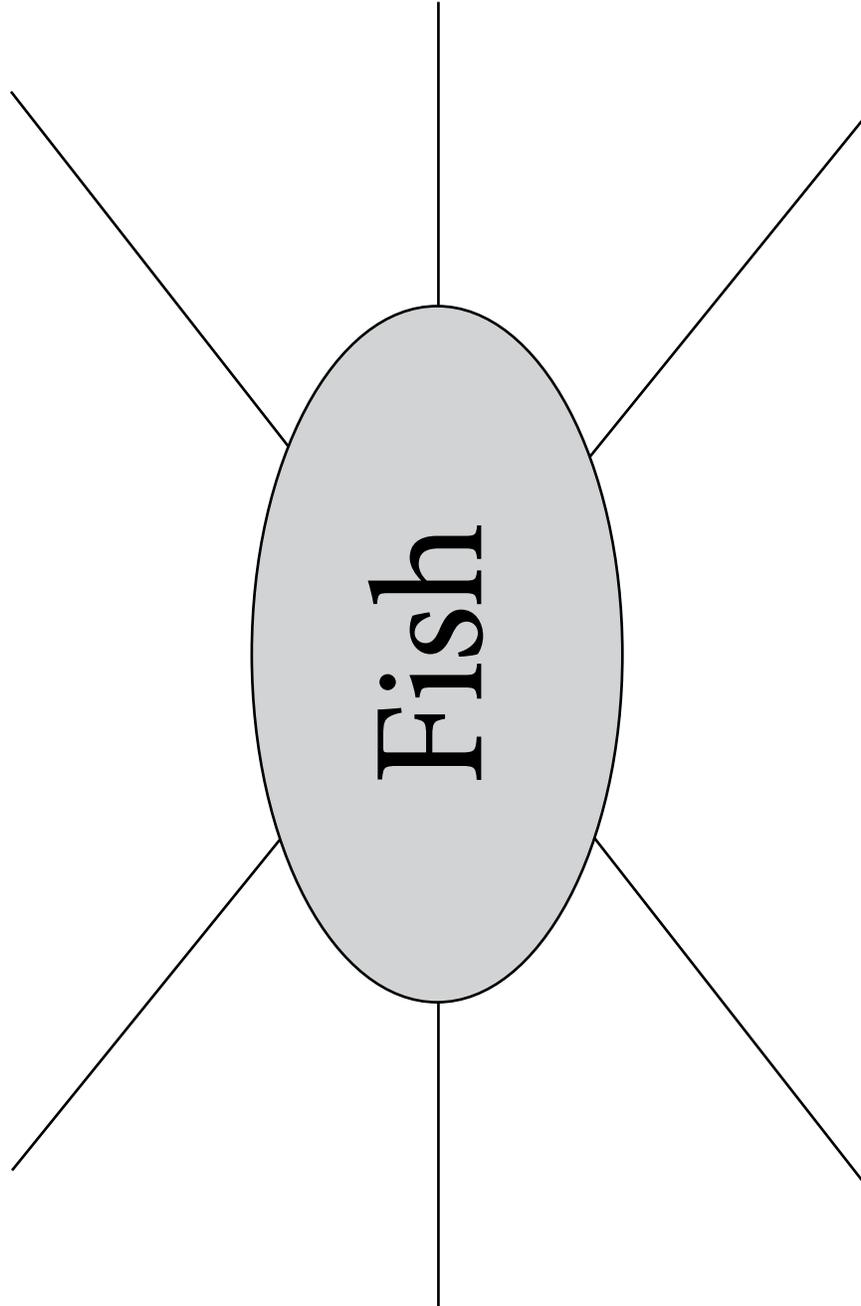
NAME: _____

5.3

ACTIVITY PAGE

DATE: _____

Fish Web



Student Interview

Student 1: _____

Which text feature did you find in the Reader? _____

What did you learn from this text feature?

NAME: _____

DATE: _____

Fish and Gills Exit Slip

My reflection

Name: _____

Which text feature did I find in the Reader? _____

What did I learn from this text feature?

NAME: _____

DATE: _____

Parts of Speech

Draw a vertical line separating the subject and predicate. Circle the nouns. Draw a wiggly line under the verbs. Draw a box around the adjectives and an arrow from the adjectives to the nouns they describe.

1. The pottery was from a small factory.
2. Some artists draw pictures on cloth.
3. Mother bought new clothes for my little brother.
4. Sally feels cranky and sad today.
5. The little boy was out in the red barn.
6. Mr. Jones likes the tall tale about the twin sisters.
7. The colorful kite flew high up in the sky.
8. Dad did not want to stay for the whole show.
9. The children forgave each other for the silly misunderstanding.
10. The painter painted the house many colors.

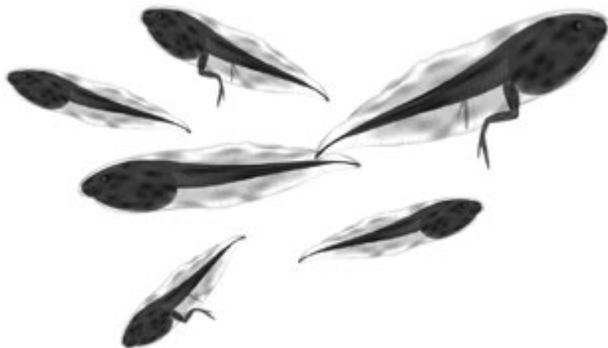
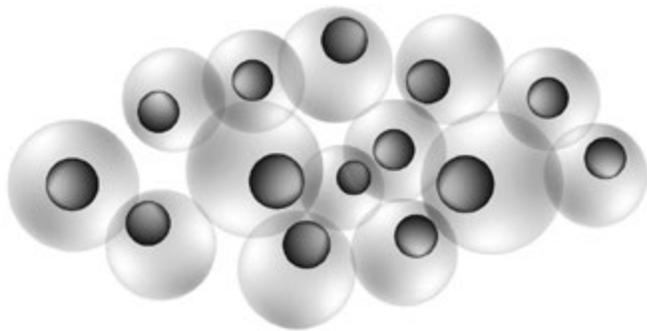
11. Make up two sentences that have nouns, a verb, and adjectives and mark them as you did in numbers 1–10.

NAME: _____

DATE: _____

Common Bond

What do these three pictures have in common?

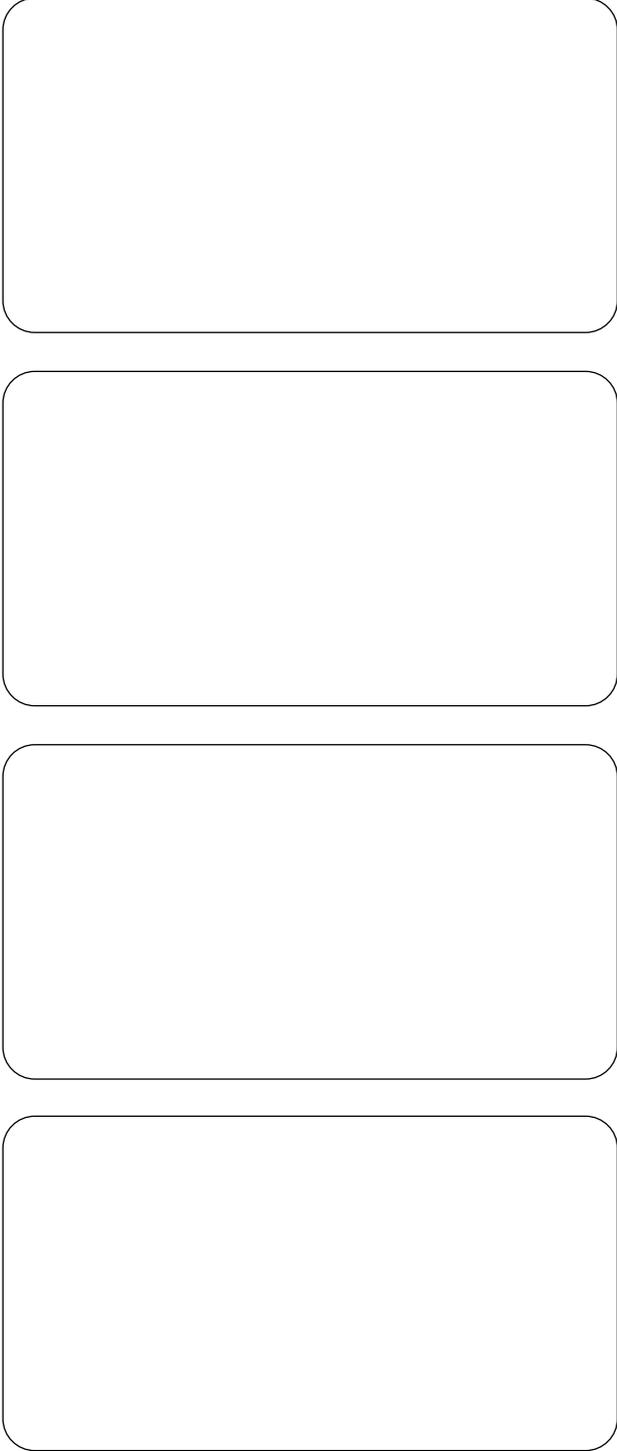


NAME: _____

DATE: _____

Metamorphosis Sequencing

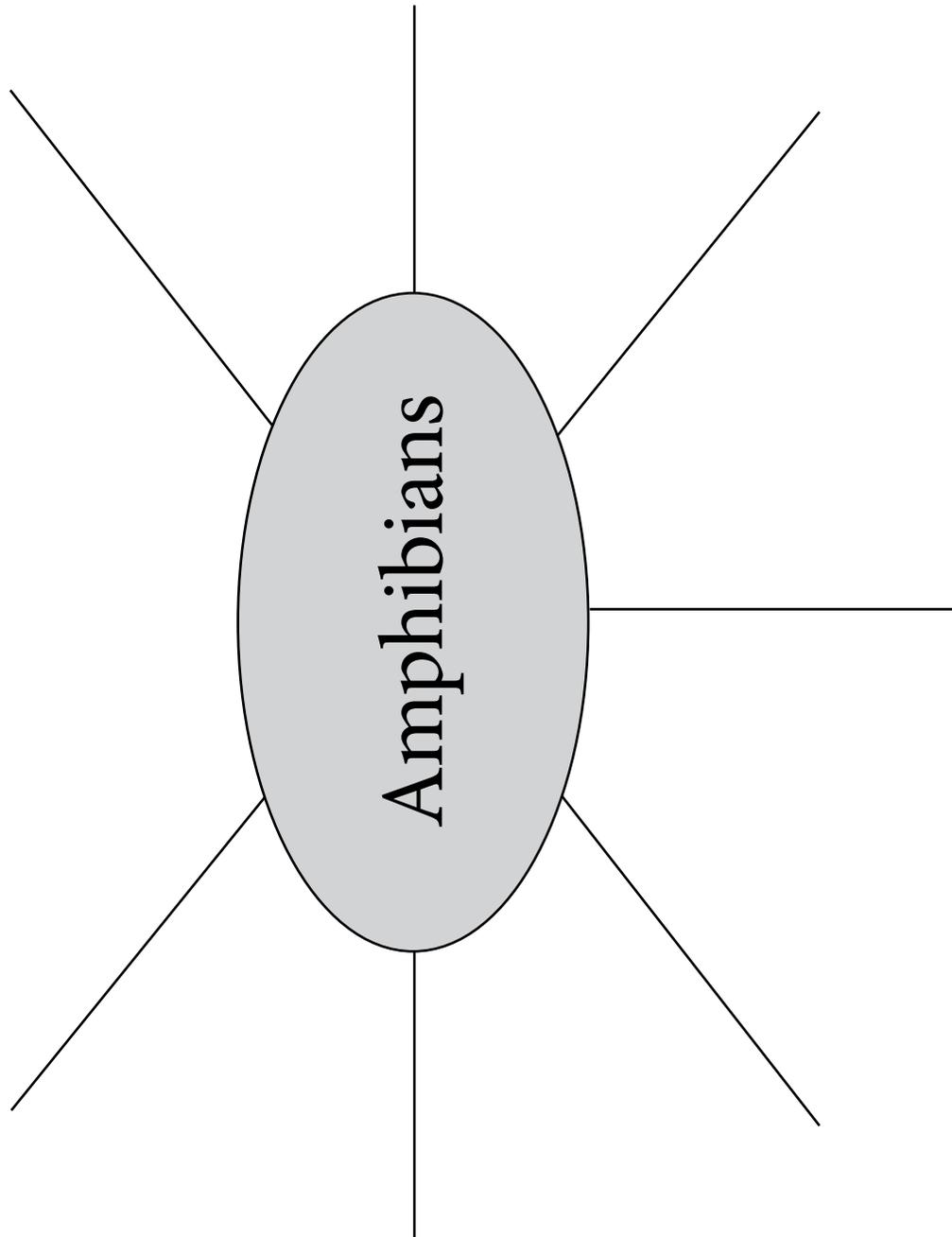
Write a sentence and then draw a picture to show the correct order in the stages of metamorphosis (of a frog or toad).

<p>First</p> <hr/> <hr/> <hr/>	
<p>Next</p> <hr/> <hr/> <hr/>	
<p>Then</p> <hr/> <hr/> <hr/>	
<p>Last</p> <hr/> <hr/> <hr/>	

NAME: _____

DATE: _____

Amphibian Web



NAME: _____

DATE: _____

Identify Compound Sentences

For each sentence,

- draw a line to separate the subject and predicate
- mark the subject(s) and predicate(s) by writing the letter *S* above each subject and the letter *P* above each predicate
- draw two lines under the conjunction *and*

Then write “Yes” on the line if the sentence is a compound sentence, or write “No” on the line if the sentence is not a compound sentence.

1. The boys and girls watched a beaver in the river. _____
2. The chicken sat on the eggs, and then the eggs hatched. _____
3. Jamal likes long novels, and his friend Derek likes to read too.

4. Mark and his classmates will write a report on mammals. _____
5. The class went to the park and the museum. _____
6. Tim and Bill went to the store, and Bill bought candy. _____
7. The children want salad and spaghetti for dinner. _____
8. The trip was fun, and Mary enjoyed it. _____

NAME: _____

DATE: _____

Identify Compound Sentences

For each sentence,

- draw a line to separate the subject and predicate
- mark the subject(s) and predicate(s) by writing the letter *S* above each subject and the letter *P* above each predicate
- draw two lines under the conjunction *and*

Then write “Yes” on the line if the sentence is a compound sentence, or write “No” on the line if the sentence is not a compound sentence.

Example: **S** **S** **P**
Example: The hummingbirds and bees|surprised the children. **No**

1. Mary fed her pet mice, and Peter fed his pet turtle. _____
2. The birds fed their babies and protected them from predators.

3. The scientist watched the chimpanzees during the day, and the rest of the crew watched them at night. _____
4. My brother is a great artist, and he loves to paint. _____
5. My sister is a great athlete and loves to run. _____
6. My mother and aunt like to take walks together. _____
7. Our dog ran around the yard, and our cat slept indoors. _____

NAME: _____

DATE: _____

Take-Home Letter

Dear Family Members,

Please help your child succeed in spelling by taking a few minutes each evening to review the words together. Helpful activities for your child to do include: spelling the words orally, writing sentences using the words, or simply copying the words.

Spelling Words

This week, we are focusing again on adding the suffixes *-ed* and *-ing* to words. On the assessment, your child will be asked to write not only the root words listed below but also those root words with the suffixes *-ed* and *-ing* added. The spelling words this week end with the letter 'e'. When the suffixes *-ed* and *-ing* are added to these words, it is first necessary to drop the final letter 'e' before adding the suffix. For example, the root word *smile* becomes *smiled* and *smiling*. Your child will be assessed on these words.

Students have been assigned two Challenge Words, *does* and *done*. Challenge Words are words used very often. They may not follow spelling patterns and need to be memorized. Students will not be responsible for adding suffixes to the Challenge Words.

The spelling words, including the Challenge Words, are listed below:

1. smile	7. file
2. vote	8. dine
3. rake	9. quote
4. translate	10. raise
5. prepare	Challenge Word: <i>does</i>
6. tire	Challenge Word: <i>done</i>

Student Reader

The chapters your child will read this week in *Rattenborough's Guide to Animals* include information about amphibians, reptiles, and birds. Once again, Rattenborough will guide students through the factual information.

NAME: _____

DATE: _____

Frog Scavenger Hunt

Frog Clue Card 1: Where can American green tree frogs live?

Frog Clue Card 2: Where can poison dart frogs live?

Frog Clue Card 3: How long is an American green tree frog?

Frog Clue Card 4: How long is a poison dart frog?

Frog Clue Card 5: What color is an American green tree frog?

Frog Clue Card 6: What color is a poison dart frog?

Frog Clue Card 7: What is a distinct characteristic of an American green tree frog?

Frog Clue Card 8: What seeps out of a poison dart frog's skin?

Frog Clue Card 9: Where do American green tree frogs lay their eggs?

Frog Clue Card 10: Where do poison dart frogs take their newly hatched tadpoles?

NAME: _____

DATE: _____

Frog Exit Ticket

How are these two texts alike?

How are these two texts different?

NAME: _____

DATE: _____

Nouns, Verbs, and Adjectives

Circle the nouns, draw a wiggly line under the verbs, and draw a box around the adjectives. Draw an arrow from the adjective to the noun it describes.

1. Dancers are lovely and graceful.
2. Sophia's back yard is small and fenced.
3. Apple trees were once small, brown seeds.
4. Penguins like cold climates.
5. Joe read the enjoyable story about kind pirates.
6. The author read a scary chapter from her new book.
7. Some tired sailors mopped the messy deck.
8. Today, people watch huge whales from rented boats.
9. The warm bread and sweet cheese tasted great!
10. The green hoses of the weary gardeners looked like slithery snakes.

NAME: _____

DATE: _____

Reptile Vocabulary

1. What does nocturnal mean in the following sentence?
Like Anna, they are **nocturnal** hunters, hunting at night.

2. What does molting mean in the following sentence?
Reptiles are known for **molting**, or shedding their skin.

re-: Prefix Meaning “to do again”

The left-hand side of the table contains words that use the prefix you have been studying. Use the blanks on the right side to record additional words that use the same prefix. Make sure to include the definition for the new words you brainstorm.

refill —(verb) to make something full again	
reload —(verb) to put things into a container again	
retell —(verb) to report information again	
rename —(verb) to label something again	

Write the correct word to complete each sentence.

retell	reload	redo	review
--------	--------	------	--------

- Robert asked if he could _____ the program for the concert to see what song would be next.
- Mom asked me to _____ the story of how my little brother fell on the playground.
- Ava wanted to _____ her pencil box with supplies over winter break.
- Write your own sentence using the one word left in the box.

pre-: Prefix Meaning “before”

The left-hand side of the table contains words that use the prefix you have been studying. Use the blanks on the right side to record additional words that use the same prefix. Make sure to include the definition for the new words you brainstorm.

precook —(verb) to prepare and heat food before	
preset —(verb) to arrange before	
preselect —(verb) to choose before	
prepay —(verb) to give money for something before	

Write the correct word to complete each sentence.

preselect	preprint	preheat	prepay
-----------	----------	---------	--------

1. Last year, Dad was able to _____ for our summer football camp so we don't owe anything this year.
2. Lucy decided to _____ her boarding pass for the flight so she could go right through security at the airport.
3. When I was in my sister's wedding, I got to _____ the color of my dress several months in advance.
4. Write your own sentence using the one word left in the box.

NAME: _____

DATE: _____

Blank Busters

Follow along with your teacher to fill in the blanks with the correct spelling words. The root words are listed in the box below. You will not use a word more than once.

smile	rake	file	vote	dine
quote	raise	translate	tire	prepare

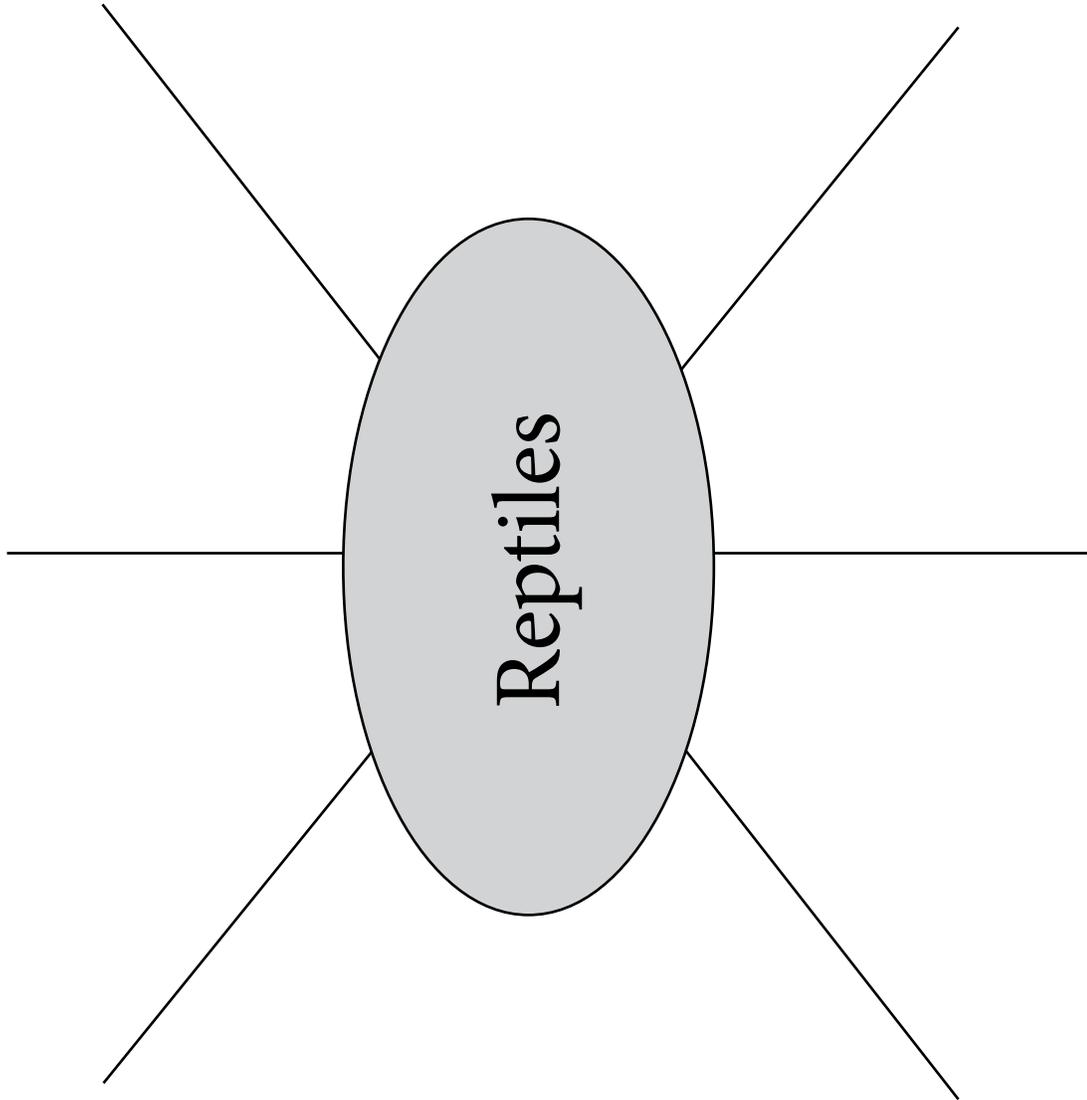
1. The chef _____ a special dish for the night with fish and pasta.
2. When we got home from school, Dad was in the yard _____ leaves into piles.
3. On Election Day, Mom _____ before she went to work.
4. When Ms. Taylor asked for volunteers to help with the math workshop, she saw four students _____ their hands.
5. Some puppies _____ easily from running and playing and need naps, just like people.
6. Kevin _____ his Spanish homework for me so he could tell me what he learned.

7. I saw the baby _____ when his mother leaned over to say hello to him.
8. Darcy _____ the letter she received about science camp in a folder with other science camp documents so they would all be in one place.
9. Grandma said we would be _____ at three o'clock on Sunday afternoon.
10. My sister can _____ most lines from her favorite movie.

NAME: _____

DATE: _____

Reptile Web



NAME: _____

DATE: _____

Blank Busters

Create your own Blank Busters sentences using three words from this week's spelling list. Do not fill in the blanks—you will do that in class when you bring this back!

Example: When we got home from school, Dad was in the yard _____
leaves into piles.

Root Word	-ed	-ing
smile	smiled	smiling
rake	raked	raking
file	filed	filing
vote	voted	voting
dine	dined	dining
quote	quoted	quoting
raise	raised	raising
tire	tired	tiring
translate	translated	translating
prepare	prepared	preparing

1. _____

2. _____

3. _____

Reptiles

Hi again, it's Rattenborough! You have already learned a little about today's group of animals, which are reptiles. You already know that reptiles are cold-blooded animals and vertebrates. But did you know that reptiles live both on land and in water like amphibians? Reptiles have lungs from the time they are born, not gills, like amphibians.

You may also already know that reptiles lay eggs. Some reptile eggs have soft shells and some have hard shells. They lay their eggs on land. A few snakes hold the eggs inside their bodies until they hatch. Very few rare reptiles do give birth to live young, never making real eggs.

Many different groups of animals are classified as reptiles. These include animals such as crocodiles, alligators, turtles, tortoises, snakes, and lizards.

Some people may think reptiles, mainly snakes, are scary. Most reptiles will not harm people. But there are some reptiles that you should try to avoid. The black mamba is the best example. This is the longest and most **poisonous** snake in Africa. It is also the **deadliest** snake in the world. A mamba **injects venom** whenever it bites something. A mamba bite can kill any animal—even a human—in less than 20 minutes!

Rattlesnakes, copperheads, and **water moccasins** are types of **poisonous** snakes found in the United States. Rattlesnakes, or rattlers, are easy to spot because they have “rattles” that shake on their tails. You know when there is one nearby because you can hear the rattles shaking.

Copperheads have a triangle-shaped head and dark stripes. They are normally less than three feet long. They prefer to live in rocky, wooded areas. They only bite humans if they are attacked or **startled**.

Water moccasins live in the water so they are hard to spot. They have a dangerous bite, but rarely attack humans. If you live in a southern state like Florida, Alabama, Mississippi, or Louisiana, you are more likely to see one. They live in swamps or shallow lakes. You might want to avoid swimming in shallow waters if you live in those states.

Some people think snakes are slimy because their skin looks shiny, but most reptiles have thick, dry, scaly skin. Reptiles are known for **molting**, or shedding their skin. Reptiles shed their skin several times during their lives. Snakes, for example, shed their skin in one big piece. They do this when they grow too big for their current skin.

The biggest reptile is the saltwater crocodile, which lives mainly in Australia and a few parts of India and Asia. Male saltwater crocodiles can grow to be 20 feet long or more! Attacks on humans are rare. If they do attack a human, it's usually not a happy ending.

Crocodiles have the most powerful bite in the entire animal kingdom. Their bites are ten times stronger than that of a great white shark. Despite their power when they bite and snap their jaws shut, it is fairly easy to hold a crocodile's mouth closed. They open their mouths using a weak set of muscles. In fact, a third grader may be able to hold a crocodile's jaw shut . . . would you like to try?

Reptiles (Optional)

Direction: Highlight key information in the passage.

Hi again, it's Rattenborough! You have already learned a little about today's group of animals, which are reptiles. You already know that reptiles are cold-blooded animals and vertebrates. But did you know that reptiles live both on land and in water like amphibians? Reptiles have lungs from the time they are born, not gills, like amphibians.

You may also already know that reptiles lay eggs. Some reptile eggs have soft shells and some have hard shells. They lay their eggs on land. A few snakes hold the eggs inside their bodies until they hatch. Very few rare reptiles do give birth to live young, never making real eggs.

Many different groups of animals are classified as reptiles. These include animals such as crocodiles, alligators, turtles, tortoises, snakes, and lizards.

Some people may think reptiles, mainly snakes, are scary. Most reptiles will not harm people. But there are some reptiles that you should try to avoid. The black mamba is the best example. This is the longest and most **poisonous** snake in Africa. It is also the **deadliest** snake in the world. A mamba injects venom whenever it bites something. A mamba bite can kill any animal—even a human—in less than 20 minutes.

Rattlesnakes, copperheads, and **water moccasins** are types of **poisonous** snakes found in the United States. Rattlesnakes, or rattlers, are easy to spot because they have “rattles” that shake on their tails. You know when there is one nearby because you can hear the rattles shaking.

Copperheads have a triangle-shaped head and dark stripes. They are normally less than three feet long. They prefer to live in rocky, wooded areas. They only bite humans if they are attacked or **startled**.

Water moccasins live in the water, so they are hard to spot. They have a dangerous bite, but rarely attack humans. If you live in a southern state like Florida, Alabama, Mississippi, or Louisiana, you are more likely to see one. They live in swamps or shallow lakes. You might want to avoid swimming in shallow waters if you live in those states.

Some people think snakes are slimy because their skin looks shiny, but most reptiles have thick, dry, scaly skin. Reptiles are known for **molting**, or shedding their skin. Reptiles shed their skin several times during their lives. Snakes, for example, shed their skin in one big piece. They do this when they grow too big for their current skin.

One of the biggest reptiles is the saltwater crocodile, which lives mainly in Australia and a few parts of India and Asia. Male saltwater crocodiles can grow to be 20 feet long or more. Attacks on humans are rare. If they do attack a human, it's usually not a happy ending. Crocodiles have the most powerful bite in the entire animal kingdom. Their bites are ten times stronger than that of a great white shark. Despite their power when they bite and snap their jaws shut, it is fairly easy to hold a crocodile's mouth closed. They open their mouths using a weak set of muscles. In fact, a third grader may be able to hold a crocodile's jaw shut—would you like to try?

NAME: _____

DATE: _____

Spelling Assessment

	Root Word	- <i>ed</i>	- <i>ing</i>
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____
6.	_____	_____	_____
7.	_____	_____	_____
8.	_____	_____	_____
9.	_____	_____	_____
10.	_____	_____	_____

Challenge Word: _____

Challenge Word: _____

Dictated Sentence

1. _____

NAME: _____

DATE: _____

Bird Watching

Description of bird (color):

Location:

Observation:

Notes:

Description of bird (color):

Location:

Observation:

Notes:

Description of bird (color):

Location:

Observation:

Notes:

NAME: _____

DATE: _____

Bird Vocabulary

1. What does glide mean in the following sentence?

His long, broad wings are built so that he can **glide**, or move smoothly and continuously.

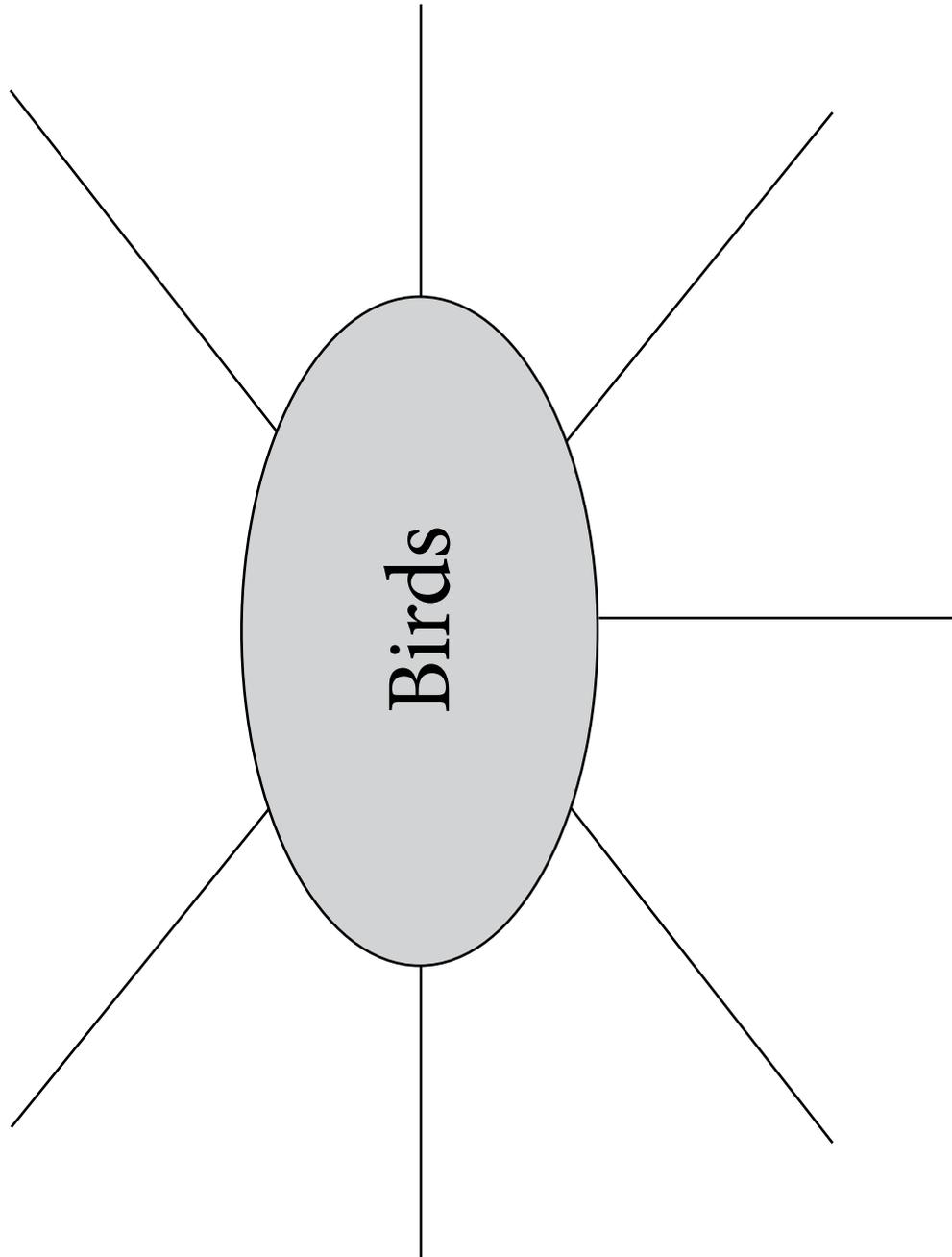
2. What does nest mean in the following sentence?

Most birds prepare a **nest**, or shelter for their young, using whatever materials are available to them in nature.

NAME: _____

DATE: _____

Bird Web



NAME: _____

DATE: _____

Birds

Fill in the chart with details from the chapter.

Characteristics of Birds	
Vertebrates or invertebrates?	
Warm-blooded or cold-blooded?	
Where birds can live	
What all birds have	
Body covering	
What birds eat	
How birds use their songs	

Complete the following sentence.

One interesting thing I learned about birds is

NAME: _____

DATE: _____

Bird Text Features

Text feature in the Reader: _____

What I learned from this text feature about birds: _____

Text feature in the Reader: _____

What I learned from this text feature about birds: _____

Text feature in the Reader: _____

What I learned from this text feature about birds: _____

NAME: _____

DATE: _____

Abstract Nouns

Write the letter C over the concrete nouns and the letter A over the abstract nouns.

C

A

C

Example: The skydiver was full of courage when he jumped from the plane.

1. The character in the story was so full of hate I had to stop reading.
2. The friendship Tim and Tom share makes their parents happy.
3. The photograph clearly shows the beauty of the mountains.
4. The football team was full of pride when they won the state championship game.
5. Your anger is making your face red!
6. The skillful artist showed he was full of skill after painting the mural.
7. An afternoon of relaxation helps to make you feel energetic.
8. Listening to beautiful music fills me with peace.

Create a sentence using each abstract noun.

1. trouble

2. success

3. love

Family Letter

Dear Family Member,

Please help your child succeed in spelling by taking a few minutes each evening to review the words together. Helpful activities for your child to do include: spelling the words orally, writing sentences using the words, or simply copying the words.

Spelling Words

This week, we are focusing on adding the suffix *-es* to words. On the assessment, your child will be asked to write not only the root words listed below but also those root words with the suffix *-es* added. Students have reviewed the rule that when a word ends with the letter ‘y’, it is necessary to change the ‘y’ to ‘i’ before adding the suffix *-es*. For example, the root word *puppy* becomes *puppies*. Your child will be assessed on these words.

Students have been assigned two Challenge Words, *along* and *put*. Challenge Words are words used very often. They may not follow spelling patterns and need to be memorized. Students will not be responsible for adding suffixes to the Challenge Words. Students will not be responsible for adding the suffix *-es* to the Challenge Words.

The spelling words, including the Challenge Words, are listed below:

1. puppy	7. study
2. carry	8. butterfly
3. lady	9. bunny
4. dry	10. hurry
5. marry	Challenge Word: <i>along</i>
6. penny	Challenge Word: <i>put</i>

NAME: _____

DATE: _____

Text Structures

Read the sentences below. Circle the text structure clue word in the sentence. On the line, write compare if the sentence is comparing two or more things or contrast if the sentence is contrasting two or more things.

1. The kangaroo, like the opossum, is part of a group of mammals called marsupials.

2. The duck-billed platypus is unlike other mammals because it lays eggs.

3. Remember learning that birds' beaks may provide clues to their diets? The same is true of mammals' mouths.

NAME: _____

DATE: _____

Compare Two Texts

Write the central ideas from each text. Draw lines to show points that are related.

“Mammals: Live-Bearing Milk Producers”	“Mammals”

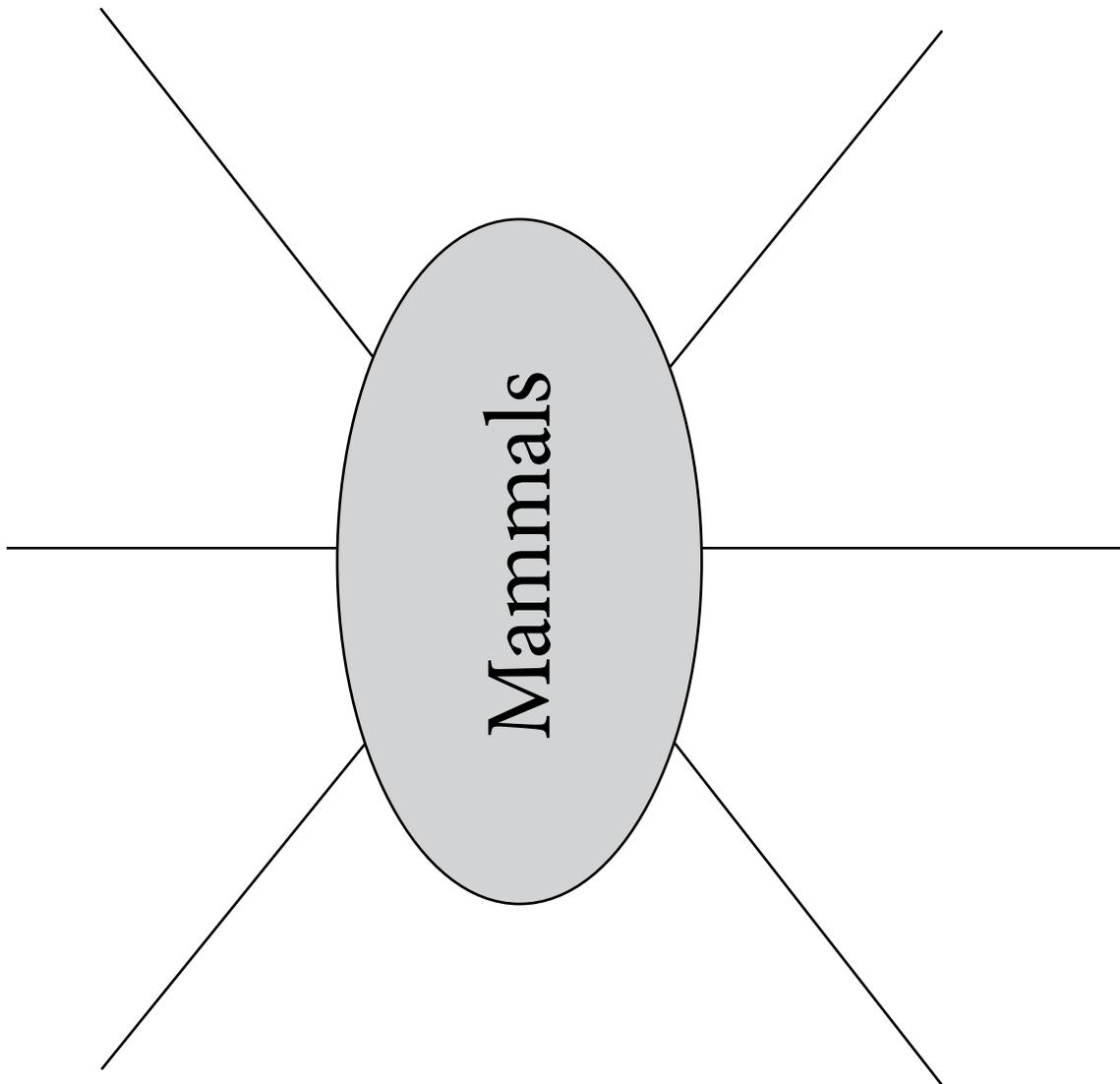
NAME: _____

12.3

ACTIVITY PAGE

DATE: _____

Mammal Web



NAME: _____

DATE: _____

Grammar Review

Label the parts of speech in the following sentences. Circle the nouns, box adjectives and draw arrows to the nouns that they describe, and draw wiggly lines under the verbs.

1. The warm days of summer change to the cool days of fall.
2. The winning team celebrates with a grand party and yummy food.
3. Bill collects many varied stamps for his huge collection.
4. The dedication of the Macon County Fire Department is inspiring.

Explain the function of a noun in a sentence:

Explain the function of a verb in a sentence:

Explain the function of an adjective in a sentence:

NAME: _____

DATE: _____

Taking Notes on Jane Goodall

Jane Goodall: Video Clip

Jane Goodall: Reading

NAME: _____

DATE: _____

Jane Goodall: Central Idea and Supporting Details

Central idea:

Supporting detail:

Supporting detail:

Supporting detail:

NAME: _____

DATE: _____

Animal Report

Directions: Write your topic sentence in the first rectangle to introduce your animal and its group. Choose three supporting details to write in the next three rectangles to support or expand your topic sentence. Write your concluding sentence in the last rectangle to conclude your paragraph.

Topic Sentence
Supporting Detail #1
Supporting Detail #2
Supporting Detail #3
Concluding Sentence

Family Letter

Dear Family Members,

Over the past couple of weeks, your child has been learning more about the classification of animals. S/he has learned about each of the five groups of vertebrate animals: fish, amphibians, reptiles, birds, and mammals. Your child has listened to several colorful and informative read-aloud stories. For each animal group, your child has learned whether it is cold-blooded or warm-blooded, whether it is a vertebrate or an invertebrate, and other important characteristics.

Below are some suggestions for activities that you may do at home to reinforce what your child is learning about the classification of animals.

1. Classify the Animal

Look through magazines or books that have pictures/illustrations of animals. Talk to your child about the things s/he notices about each animal, like whether it has a backbone (vertebrate) or no backbone (invertebrate), its body covering (fur or hair, scales, feathers), and whether it is cold-blooded or warm-blooded. Your child may want to create a collage of pictures of animals that belong to one of the vertebrate groups.

2. Animal Groups Drawing

Have your child draw a picture of one of the groups of animals (fish, amphibians, reptiles, birds, and mammals) s/he has learned about, with several examples of the kinds of animals included in the group. Talk with your child about one of these animals, how scientists classify this animal, and any other interesting facts.

3. Sayings and Phrases: The Show Must Go On

Discuss with your child what the saying “the show must go on” means. It was in use in the United States starting in about 1867, and likely originated with the popularity of the circus. Despite tragic accidents, poor weather

conditions, and other setbacks which might have meant cancellation, circus shows usually took place as scheduled. To prevent profits from being drastically reduced and to keep morale up amongst circus workers, many circus managers operated in this way. Think of a time when your child needed to continue on with something that needed to be completed, even though there were setbacks.

4. Words to Use

Below are several words that your child will be learning about and using. Try to use these words as they come up in everyday speech with your child.

- *aquatic*—Fish and other aquatic animals can be found in the lake south of town.
- *nest*—My grandmother spotted a robin’s nest with four, small, blue eggs in it.
- *venomous*—When visiting a new ecosystem, it is a good idea to learn what kinds of venomous animals live there.
- *lungs*—My lungs help me to breathe air, but my pet goldfish must use its gills to get the oxygen it needs from water.
- *terrestrial*—Some of the larger terrestrial animals at the zoo, such as elephants and bears, need a lot of land in which to move around and exercise.

5. Read Aloud Each Day

It is very important that you read to your child each day. Set aside time to read to your child and also to listen to your child read to you.

Be sure to praise your child whenever s/he shares what has been learned at school.

NAME: _____

DATE: _____

Text Feature Search

Take a picture walk through “Scientists Who Classify Animals” and make a prediction after each text feature listed below. What information do you think you will learn from each text feature listed? After reading, go back and note if your prediction was true or false. Finally, write a corrected statement for each false prediction.

Text features	Before reading prediction	After reading (true or false)	Corrected prediction
Heading			
Bold print words			
Photo and caption			
Glossary			

NAME: _____

DATE: _____

Questions and Answers

1: Question	2: Answer
3: Question	4: Answer
5: Question	6: Answer
7: Question	8: Answer

Additional questions:

1. _____

2. _____

3. _____

Revision Checklist

Ask yourself these questions as you revise your paragraph.

1.	Do I have a good topic sentence?	
2.	Do I have a good concluding sentence?	
3.	Are there any parts that do not make sense?	
4.	Do my sentences flow well in this order?	
5.	Do I have a good variety of sentence structure?	
6.	Could I combine any of my sentences?	
7.	Do I have a good variety of descriptive words?	
8.	Is my paragraph interesting?	
9.	Is this my best work?	

NAME: _____

DATE: _____

Spelling Assessment

Root Word

-es

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

Challenge Word: _____

Challenge Word: _____

Dictated Sentence

1. _____

NAME: _____

15.2

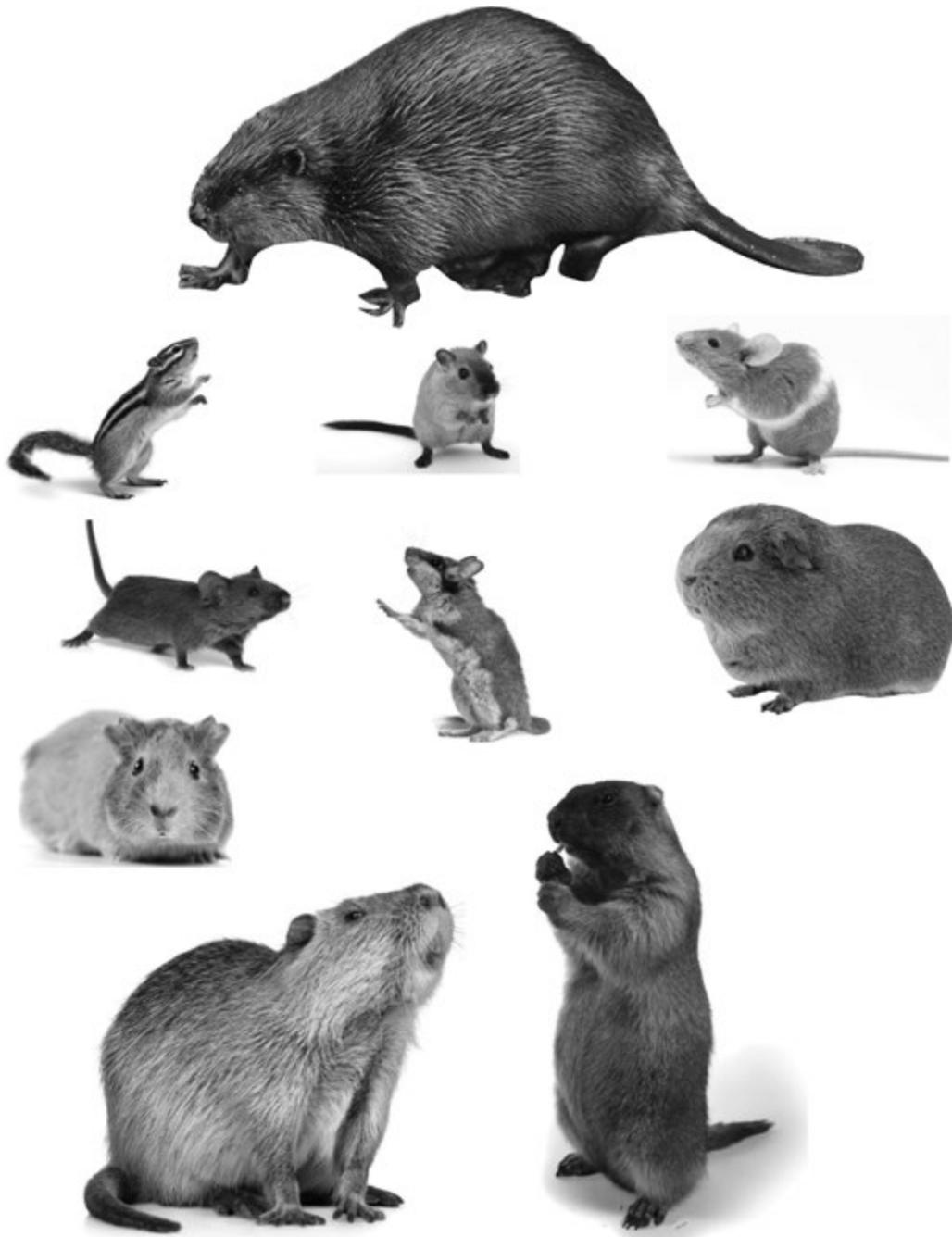
ASSESSMENT

DATE: _____

Beavers



Beavers have long, sharp teeth and a flat, wide tail.



*Beavers are mammals that belong to a smaller group of animals called **rodents**.*

NAME: _____

DATE: _____



A beaver swimming from its lodge toward a dam.



Beavers are territorial.

NAME: _____

DATE: _____

Beavers are mammals that have an important role in nature. Beavers have two key characteristics: long, sharp teeth and a flat, wide tail. They use their teeth to **gnaw** down trees of all sizes for food and for building things. They use their tails to swim, but that's not all! If a beaver smells or sees danger nearby, it will warn the other beavers. It slaps its tail on the water surface as a loud warning.

Beavers live in ponds and lakes in some parts of North America and in some parts of Europe and Asia. They are pretty hard to find today because they were nearly hunted to **extinction**. Beavers were prized for their **pelts**, which people used to make fur coats and hats.

They are still hunted today, not only for their **pelts** but also because many people think they are pests. As you will learn, beavers can play a very important role in nature by creating a special habitat called a **wetland**. But sometimes they are pests because they disturb places where people live.

Beavers are the second largest **rodent** in the world. They do look a bit like their fellow **rodents**, such as mice, rats, and hamsters.

Have you ever heard the expression “busy as a beaver”? It comes from the fact that, in the wild, beavers never seem to stop working.

They spend much of their time in water. They are best known for building dams in rivers and streams. They build dams in order to create deeper bodies of water. They move slowly on land, but they are great swimmers. Deep water protects them from bears and other predators. They dive underwater when they sense danger. They can hold their breath underwater for up to 15 minutes.

Beavers also build places to live called lodges. Lodges are big piles of sticks and mud that they build after they have built a nice dam. After the beavers **gnaw** down trees, they strip off and eat the bark of the tree. They use the rest of the tree to build their lodges and dams.

A single beaver family can really change its surroundings. Beavers' dams can cause the water in the stream or river to rise up, flooding the nearby land. This creates a swamp, or **wetland**. **Wetlands** are important habitats for many types of birds, mammals, fish, and insects. But if there are people living nearby, they may not welcome the flooding!

Beavers don't stay in one place for very long. Once the good bark from all the trees is eaten in one place, they tend to move downstream and start all over again. But the **wetland** they made often remains long after they leave.

Beavers are very **territorial**: they often attack other beavers that try to move into a space that they have claimed. They want to keep all the tasty tree bark for themselves.

All in all, beavers are interesting mammals to watch and study.

1. According to the selection, what does the word *gnaw* mean?

2. According to the selection, what does the word *wetlands* mean?

NAME: _____

DATE: _____

3. What information did you learn from the photos and captions?

4. What information did you learn from the heading?

5. What information did you learn about the bold print words?

Hummingbirds



A hummingbird compared to the size of a penny.

NAME: _____

DATE: _____



A hummingbird approaches a flower for nectar.



The locations where the ruby-throated hummingbird lives in summer and winter.

NAME: _____

DATE: _____



A ruby-throated hummingbird feeds its babies.

Birds can be found nearly everywhere on Earth, and they come in many different sizes and colors. They also live in many different types of habitats. This affects how they eat, nest, and sing songs. Hummingbirds are among the smallest birds. The bee hummingbird is the smallest bird on Earth at just two inches long and weighing less than a penny!

A hummingbird is an amazing little animal. It can flap its wings up to 90 times in 1 second! That's so fast that it looks like its wings are a blur. It's hard to see its wings because they are constantly flapping.

Hummingbirds dart around from flower to flower, like bees. They use their long, pointy beaks to drink sweet nectar from flowers. Since they are so busy flapping their wings, they need to eat a lot to replace all of their energy. A typical hummingbird will visit hundreds of flowers every day, drinking more than its own weight in nectar. Nectar has sugar, which gives hummingbirds plenty of energy. As they find insects on flowers, hummingbirds eat them up.

Hummingbirds are attracted to red flowers. They are also drawn to red feeders, which people hang on porches and trees. The feeders are filled with sugary water, which is then dyed red to attract the birds. People hang feeders for them because these birds are a lot of fun to watch!

Like many birds, the ruby-throated hummingbird migrates. This means it spends part of the year in one place and part of the year in another place. It can be found in parts of the eastern United States during the late spring and early summer. When autumn rolls around, it heads south for warmer weather.

Here is an amazing fact: this tiny bird, which is shorter than your finger, doesn't migrate just a few miles. It migrates all the way across the Gulf of

NAME: _____

DATE: _____

Mexico—500 miles—without stopping! From there, it may continue south through Mexico to Costa Rica and beyond.

Here is another interesting fact: they are the only birds that can fly backwards! They can also **hover**, or float in the air, and fly upside down.

Their nests are very small, about half as big as a walnut shell. They make their nests using leaves and small yellow and green plants called **moss**. They use spider webs to hold these little bits of nature together. They sometimes eat the spider before using its web as glue.

The spider web is nice and sticky, and it is also **flexible**. A hummingbird will lay two tiny eggs. When its tiny eggs hatch and the babies begin to grow, the spider web will allow the nest to expand. This helps the babies stay warm and safe. In the photo, a hummingbird is feeding its babies. Maybe it is giving them a nice juicy bug to eat or sharing a taste of sweet flower nectar.

See if you can find a more interesting little bird than that!

6. According to the selection, what does the word *hover* mean?

7. According to the selection, what does the word *moss* mean?

8. What information did you learn from the photos?

9. What information did you learn from the map?

10. What additional text feature could be included with this selection? Why?

11. How are these two texts alike?

NAME: _____

DATE: _____

12. How are these two texts different?

13. Choose the nouns from the following sentence.

The hog had a litter of seven grunting, snorting babies.

- A. hog, had, litter
- B. the, of, seven
- C. hog, litter, babies
- D. seven, grunting, snorting

14. If you decide to rename something, what are you doing to it?

15. Choose the adjectives from the following sentence.

The mother snake had nine, long, lovely, baby snakes.

- A. mother, nine, long, snakes
- B. snake, long, lovely, baby
- C. nine, lovely, baby, snakes
- D. nine, long, lovely, baby

16. Write the **letter C** over the concrete nouns and the **letter A** over the abstract nouns.

The grandparents were full of pride when they watched their grandchild get the award for bravery.

Choose the best word to complete the sentence. Write it on the line.

17. Standing outside during a storm is an _____ thing to do because you might get hurt.
(unsafe, uneven)

18. I chose a _____ costume for Derek's costume party since younger kids will be there, and I don't want to scare them.
(nondairy, nonthreatening)

Piranhas

Piranhas are meat-eating fish with razor sharp teeth. If an animal goes into a pond where these fish are, the piranhas may attack.	12
A large school of hungry piranhas can kill a large animal very quickly.	25
Piranhas live in South America. They are found in the Amazon River and in other rivers and lakes.	37
Like most fish, piranhas lay eggs. The female lays up to five thousand eggs at one time. The male piranha guards the eggs until they hatch. However, after they hatch, the baby piranhas are on their own.	48
A typical piranha is five to ten inches long. It might weigh two pounds.	55
A piranha has a single row of teeth. These teeth are shaped like triangles and are very sharp. In fact, they are so sharp that in the past, some native people used them to make weapons and tools.	67
Piranhas have very strong jaws. Pound for pound, they are stronger biters than great white sharks!	79
Here is how scientists measure bite strength. First, they weigh the animal. Next, they allow the animal to bite a special tool that measures how strong its bite is. Finally, they divide the bite strength by the animal size.	90
	92
	104
	106
	119
	134
	144
	154
	160
	171
	184
	197
	199

A great white shark has a bite force about equal to its body. It	213
might weigh five thousand pounds and it might bite with a force of	226
about five thousand pounds. A piranha is much smaller. It might	237
weigh two pounds. But it can bite with sixty pounds of force. Sixty	250
divided by two is thirty. That means the piranha's bite strength is	262
about thirty times as strong as a great white shark.	272
A piranha's bite hurts a lot, but what makes it even worse is what	286
comes next. Once the piranha has bitten down, it spins away from its	299
prey, tearing out a chunk of flesh. Ouch!	307
Piranhas have been known to attack humans. But such attacks are	318
not common. There are some scary movies that make it sound like	330
piranhas are always attacking people. We know now that this is just	342
not true.	344

NAME: _____

DATE: _____

W.C.P.M. Calculation Worksheet

Student: _____

Date: _____

Story: *Piranhas*

Total words: 344

<p style="text-align: center;">Words</p> <div style="text-align: center;"> <div style="border: 1px solid black; width: 60px; height: 40px; margin: 0 auto 10px auto;"></div> <div style="display: flex; justify-content: center; align-items: center;"> <div style="border: 1px solid black; width: 60px; height: 40px; margin-right: 10px;"></div> <div style="text-align: right;">Words Read</div> </div> <div style="display: flex; justify-content: center; align-items: center; margin: 5px 0;"> <div style="border: 1px solid black; width: 60px; height: 40px; margin-right: 10px;"></div> <div style="text-align: right;">Uncorrected Mistakes</div> </div> <hr style="width: 100%; border: 1px solid black; margin: 5px 0;"/> <div style="display: flex; justify-content: center; align-items: center;"> <div style="border: 1px solid black; width: 60px; height: 40px; margin-right: 10px;"></div> <div style="text-align: right;">Words Correct</div> </div> </div>	<p style="text-align: center;">Time</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p style="font-size: small;">Minutes</p> <div style="border: 1px solid black; width: 40px; height: 30px; margin: 0 auto;"></div> </div> <div style="text-align: center;"> <p style="font-size: small;">Seconds</p> <div style="border: 1px solid black; width: 40px; height: 30px; margin: 0 auto;"></div> </div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 5px;"> <div style="text-align: center;"> <p style="font-size: small;">Finish Time</p> </div> <div style="text-align: center;"> <p style="font-size: small;">Start Time</p> </div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> <div style="text-align: center;">-</div> <div style="border: 1px solid black; width: 40px; height: 30px; margin-right: 10px;"></div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> </div>
--	---

Text Feature Project Hunt

1. Divide a piece of paper or file folder into eight equal squares.
2. Look through the books in the bin and complete the task for each text feature.

<p>Table of contents: (Definition)</p> <ul style="list-style-type: none"> – Write your own definition for table of contents. – Choose one title in the table of contents that you are excited to read. – Include the page number. 	<p>Heading: (Definition)</p> <ul style="list-style-type: none"> – Write your own definition for heading. – Choose one heading from your book. – Include the page number.
<p>Bold print words: (Definition)</p> <ul style="list-style-type: none"> – Write your own definition for bold print words. – Copy two bold print words. – Include the page number. 	<p>Photo and caption: (Definition)</p> <ul style="list-style-type: none"> – Write your own definition for photo and captions. – Find a photo in your Reader. – Draw the photo and include the caption and page number.
<p>Chart: (Definition)</p> <ul style="list-style-type: none"> – Write your own definition for chart. – Find a chart in your Reader. – Draw the chart and include the page number. 	<p>Map: (Definition)</p> <ul style="list-style-type: none"> – Write your own definition for map. – Find a map in your Reader. – Draw the map and include the page number.
<p>Glossary: (Definition)</p> <ul style="list-style-type: none"> – Write your own definition of a glossary. – Choose two words from the glossary. – Write each word and the definition. 	<p>Diagram: (Definition)</p> <ul style="list-style-type: none"> – Write your own definition of diagram. – Find one diagram in your Reader. – Draw the diagram and include the page number.

NAME: _____

DATE: _____

Signal Words

Different types of text structures	Clue words	Sentence in Reader with signal word	Page number in Reader
Time	Before Now Later		
Sequence	First Next Then After Last Finally		
Cause and effect	Because Then If So As a result When		

NAME: _____

DATE: _____

Comparing Heights

Which animal is the tallest on the ruler?

Which animal is the shortest on the ruler?

Which animal is closest to your height?

Which animal's height surprised you? Why?

We compared the animals by height. How else can we compare the animals?

NAME: _____

DATE: _____

My Animal Centers Checklist

Name: _____

Center activity	Date completed
Text features	
Making a poster	
Sequence signal words	
Writing prompts	
Comparing heights	

Which center was your favorite? Give three reasons why you chose this as your favorite.

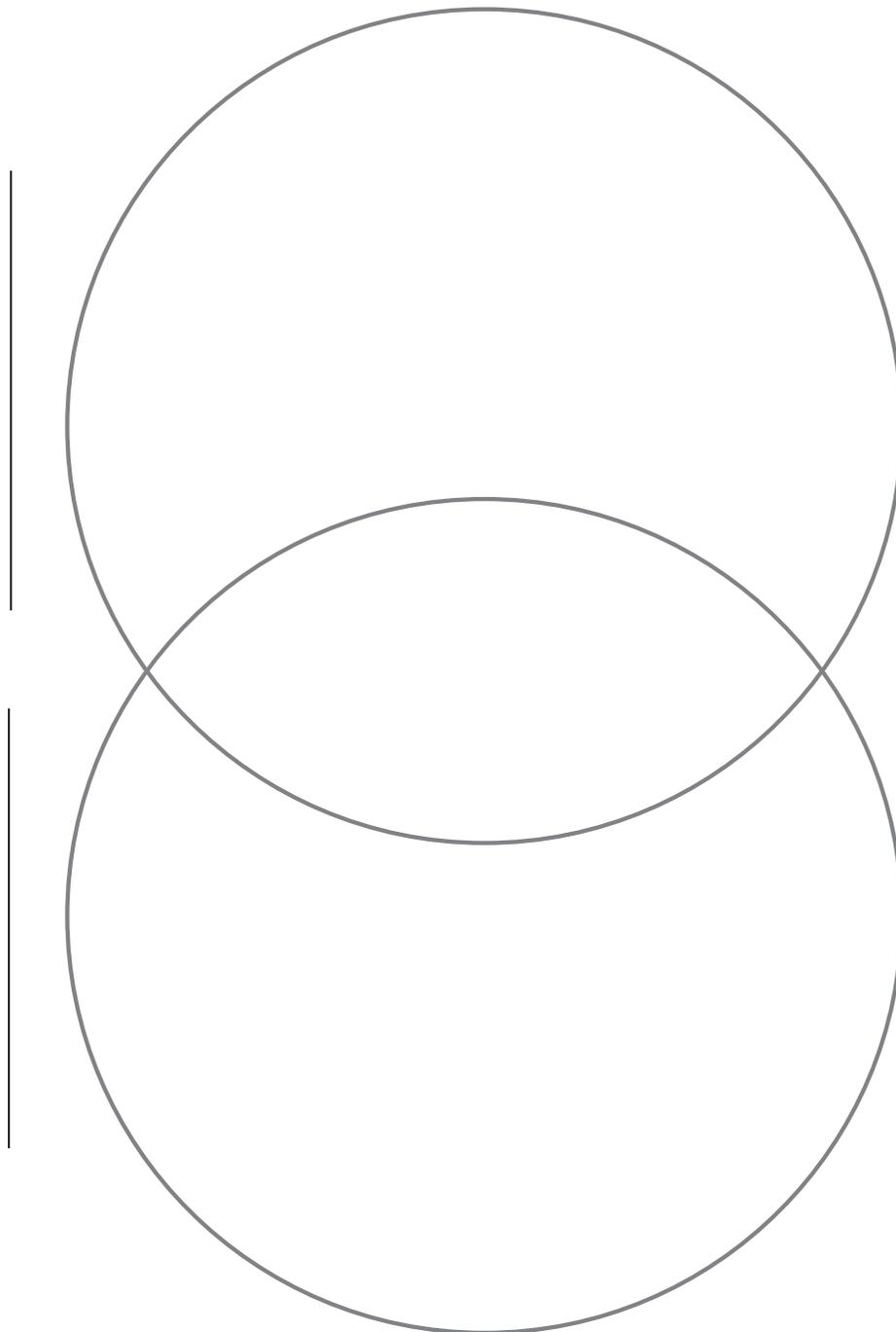
At which center did you learn the most? Why?

NAME: _____

DATE: _____

Venn Diagram

Directions: Write the two vertebrate groups you are comparing and contrasting on the two blanks. In the overlapping part of the diagram, write words and/or phrases that describe how the two things are alike. In the non-overlapping parts of each circle, write words and/or phrases that describe how the two things are different.



Identify Compound Sentences

For each sentence,

- draw a line to separate the subject and predicate.
- mark the subject(s) and predicate(s) by writing the letter *S* above each subject and the letter *P* above each predicate.
- draw two lines under the conjunction *and*.

Then write “Yes” on the line if the sentence is a compound sentence, or write “No” on the line if the sentence is not a compound sentence.

S P P

Example: John | liked the zebra and loved the giraffe in the zoo. _____ No _____

1. Tigers and lions are very big cats. _____
2. The elementary school has brilliant mathematicians and also has talented artists. _____
3. Sarah and Deb went to the library. _____
4. My uncle visited Paris, and my nephew went to Venice. _____
5. Elephants are very intelligent animals, and dolphins are very smart.

6. Buffalo and wolves live in Yellowstone National Park. _____

Challenge

From the sentences you identified as not compound sentences, choose one to rewrite as a compound sentence.

Illustration and Photo Credits

1.1 (Animal Image): Amplify Staff; 1.2 (Rattenborough): Alisa Haggard; 4.1 (All my best friends): Erika Baird; 5.2A (Fish title): Staff; 5.2B (Gil definition): Staff; 5.2C (Fish many sizes): Shutterstock; 5.2D (Aquatic title): Staff; 5.2E (Fish anatomy): Shutterstock; 5.2F (Rattenborough table of contents): Staff; 6.1A (Tadpoles metamorphosis): Shutterstock; 15.2 (Beavers winter): Shutterstock; 15.2B (Rodent family): Shutterstock; 15.2C (Beaver swimming): Shutterstock; 15.2D (Beavers territorial): Shutterstock; 15.2E (Hummingbird penny): Shutterstock; 15.2F (Hummingbird flower nectar): Shutterstock; 15.2G (Hummingbird migration): Shutterstock; 15.2H (Hummingbird nest): Shutterstock

General Manager K-8 Humanities and SVP, Product

Alexandra Clarke

Chief Academic Officer, Elementary Humanities

Susan Lambert

Content and Editorial

Elizabeth Wade, PhD, Director,
Elementary Language Arts Content

Patricia Erno, Associate Director, Elementary ELA Instruction

Maria Martinez, Associate Director, Spanish Language Arts

Baria Jennings, EdD, Senior Content Developer

Christina Cox, Managing Editor

Product and Project Management

Ayala Falk, Director, Business and Product Strategy,
K-8 Language Arts

Amber McWilliams, Senior Product Manager

Elisabeth Hartman, Associate Product Manager

Catherine Alexander, Senior Project Manager, Spanish Language Arts

LaShon Ormond, SVP, Strategic Initiatives

Leslie Johnson, Associate Director, K-8 Language Arts

Thea Aguiar, Director of Strategic Projects, K-5 Language Arts

Zara Chaudhury, Project Manager, K-8 Language Arts

Design and Production

Tory Novikova, Product Design Director

Erin O'Donnell, Product Design Manager

Other Contributors

Patricia Beam, Bill Cheng, Ken Harney, Molly Hensley, David Herubin, Sara Hunt, Kristen Kirchner, James Mendez-Hodes, Christopher Miller, Diana Projansky, Todd Rawson, Jennifer Skelley, Julia Sverchuk, Elizabeth Thiers, Amanda Tolentino, Paige Womack

Texas Contributors

Content and Editorial

Sarah Cloos

Laia Cortes

Jayana Desai

Angela Donnelly

Claire Dorfman

Ana Mercedes Falcón

Rebecca Figueroa

Nick García

Sandra de Gennaro

Patricia Infanzón-
Rodríguez

Seamus Kirst

Michelle Koral

Sean McBride

Jacqueline Ovalle

Sofía Pereson

Lilia Perez

Sheri Pineault

Megan Reasor

Marisol Rodriguez

Jessica Roodvoets

Lyna Ward

Product and Project Management

Stephanie Koleda

Tamara Morris

Art, Design, and Production

Nanyamka Anderson

Raghav Arumugan

Dani Aviles

Olioli Buika

Sherry Choi

Stuart Dalgo

Edel Ferri

Pedro Ferreira

Nicole Galuszka

Parker-Nia Gordon

Isabel Hetrick

Ian Horst

Ashna Kapadia

Jagriti Khirwar

Julie Kim

Lisa McGarry

Emily Mendoza

Marguerite Oerlemans

Lucas De Oliveira

Tara Pajouhesh

Jackie Pierson

Dominique Ramsey

Darby Raymond-
Overstreet

Max Reinhardsen

Mia Saine

Nicole Stahl

Flore Thevoux

Jeanne Thornton

Amy Xu

Jules Zuckerberg

Series Editor-in-Chief

E. D. Hirsch Jr.

President

Linda Bevilacqua

Editorial Staff

Mick Anderson
Robin Blackshire
Laura Drummond
Emma Earnst
Lucinda Ewing
Sara Hunt
Rosie McCormick
Cynthia Peng
Liz Pettit
Tonya Ronayne
Deborah Samley
Kate Stephenson
Elizabeth Wafler
James Walsh
Sarah Zelinke

Design and Graphics Staff

Kelsie Harman
Liz Loewenstein
Bridget Moriarty
Lauren Pack

Consulting Project Management Services

ScribeConcepts.com

Additional Consulting Services

Erin Kist
Carolyn Pinkerton
Scott Ritchie
Kelina Summers

Acknowledgments

These materials are the result of the work, advice, and encouragement of numerous individuals over many years. Some of those singled out here already know the depth of our gratitude; others may be surprised to find themselves thanked publicly for help they gave quietly and generously for the sake of the enterprise alone. To helpers named and unnamed we are deeply grateful.

Contributors to Earlier Versions of These Materials

Susan B. Albaugh, Kazuko Ashizawa, Kim Berrall, Ang Blanchette, Nancy Braier, Maggie Buchanan, Paula Coyner, Kathryn M. Cummings, Michelle De Groot, Michael Donegan, Diana Espinal, Mary E. Forbes, Michael L. Ford, Sue Fulton, Carolyn Gosse, Dorrit Green, Liza Greene, Ted Hirsch, Danielle Knecht, James K. Lee, Matt Leech, Diane Henry Leipzig, Robin Luecke, Martha G. Mack, Liana Mahoney, Isabel McLean, Steve Morrison, Juliane K. Munson, Elizabeth B. Rasmussen, Ellen Sadler, Rachael L. Shaw, Sivan B. Sherman, Diane Auger Smith, Laura Tortorelli, Khara Turnbull, Miriam E. Vidaver, Michelle L. Warner, Catherine S. Whittington, Jeannette A. Williams.

We would like to extend special recognition to Program Directors Matthew Davis and Souzanne Wright, who were instrumental in the early development of this program.

Schools

We are truly grateful to the teachers, students, and administrators of the following schools for their willingness to field-test these materials and for their invaluable advice: Capitol View Elementary, Challenge Foundation Academy (IN), Community Academy Public Charter School, Lake Lure Classical Academy, Lepanto Elementary School, New Holland Core Knowledge Academy, Paramount School of Excellence, Pioneer Challenge Foundation Academy, PS 26R (the Carteret School), PS 30X (Wilton School), PS 50X (Clara Barton School), PS 96Q, PS 102X (Joseph O. Loretan), PS 104Q (the Bays Water), PS 214K (Michael Friedsam), PS 223Q (Lyndon B. Johnson School), PS 308K (Clara Cardwell), PS 333Q (Goldie Maple Academy), Sequoyah Elementary School, South Shore Charter Public School, Spartanburg Charter School, Steed Elementary School, Thomas Jefferson Classical Academy, Three Oaks Elementary, West Manor Elementary.

And a special thanks to the Pilot Coordinators, Anita Henderson, Yasmin Lugo-Hernandez, and Susan Smith, whose suggestions and day-to-day support to teachers using these materials in their classrooms were critical.



Grade 3 | Unit 2 | Activity Book
Scales, Feathers, and Fur: Animal Classification

ISBN 9781643837352



9 781643 837352



Amplify.
TEXAS

ELEMENTARY LITERACY PROGRAM

ENGLISH



Grade 3

Unit 2 | Reader

Rattenborough's Guide to Animals

Grade 3

Unit 2

Rattenborough's Guide to Animals

Reader

Notice and Disclaimer: The agency has developed these learning resources as a contingency option for school districts. These are optional resources intended to assist in the delivery of instructional materials in this time of public health crisis. Feedback will be gathered from educators and organizations across the state and will inform the continuous improvement of subsequent units and editions. School districts and charter schools retain the responsibility to educate their students and should consult with their legal counsel regarding compliance with applicable legal and constitutional requirements and prohibitions.

Given the timeline for development, errors are to be expected. If you find an error, please email us at texashomelearning@tea.texas.gov.

ISBN 978-1-64383-853-3

This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

You are free:

to Share—to copy, distribute, and transmit the work

to Remix—to adapt the work

Under the following conditions:

Attribution—You must attribute any adaptations of the work in the following manner:

This work is based on original works of Amplify Education, Inc. (amplify.com) and the Core Knowledge Foundation (coreknowledge.org) made available under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License. This does not in any way imply endorsement by those authors of this work.

Noncommercial—You may not use this work for commercial purposes.

Share Alike—If you alter, transform, or build upon this work, you may distribute the resulting work only under the same or similar license to this one.

With the understanding that:

For any reuse or distribution, you must make clear to others the license terms of this work. The best way to do this is with a link to this web page:

<https://creativecommons.org/licenses/by-nc-sa/4.0/>

© 2020 Amplify Education, Inc.
amplify.com

Trademarks and trade names are shown in this book strictly for illustrative and educational purposes and are the property of their respective owners. References herein should not be regarded as affecting the validity of said trademarks and trade names.

Printed in Mexico
01 XXX 2021

Table of Contents

Rattenborough's Guide to Animals

Unit 2 Reader

Chapter 1: Introduction: Meet Rattenborough	2
Chapter 2: Classifying Living Things	10
Chapter 3: Vertebrate or Invertebrate?	20
Chapter 4: Warm-Blooded and Cold-Blooded Animals. . .	26
Chapter 5: Fish	34
Chapter 6: Fish: Fins and Gills	42
Chapter 7: Amphibians.	58
Chapter 8: Tree Frogs.	66
Chapter 9: The Poison Dart Frog.	74
Chapter 10: Reptiles: Cold-Blooded Scaly Vertebrates . .	80
Chapter 11: Reptiles	92
Chapter 12: Birds.	98
Chapter 13: Mammals	104
Chapter 14: Jane Goodall.	112

Chapter 15: Scientists Who Classify Animals120
Chapter 16: Vertebrate Animals Around the World. . .	128
Pausing Point (Additional Chapters for Enrichment)	
Chapter 17: Deep-Sea Fish	140
Chapter 18: The Komodo Dragon	148
Glossary for <i>Rattenborough's Guide to Animals</i>157



Chapter
1

Introduction: Meet Rattenborough



Greetings! Rattenborough, the famous explorer and animal expert here! Remember me? I taught you all about animals and **habitats** when you were just little kids in first grade. I've been busy since then traveling around the world. But, I'm back now to teach you everything I've learned about animals during my travels.

First, let's take a quick look at what you learned in first grade. Do you remember what a **habitat** is? A **habitat** is the place where animals and plants live. We learned that there are different **habitats** all over the world with different kinds of animals and plants living there.

We visited a desert **habitat** where it was very hot and dry. It hardly ever rains in a desert so the plants and animals that live there have to be able to get by with very little water. I bet you remember that cactus plants live in the desert, along with snakes and lizards.

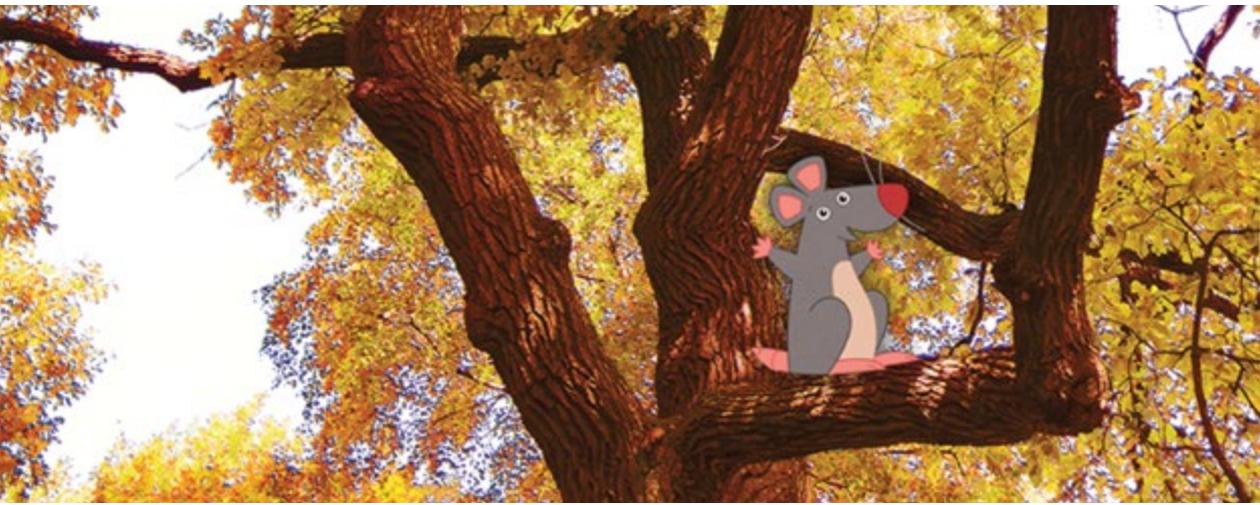


*Rattenborough in one **habitat**.*

We also visited an African savanna. A savanna is also called a grassland. There were lots of interesting animals living there—zebras, elephants, and even lions! To be perfectly honest, I was always a little nervous while we were in the savanna!

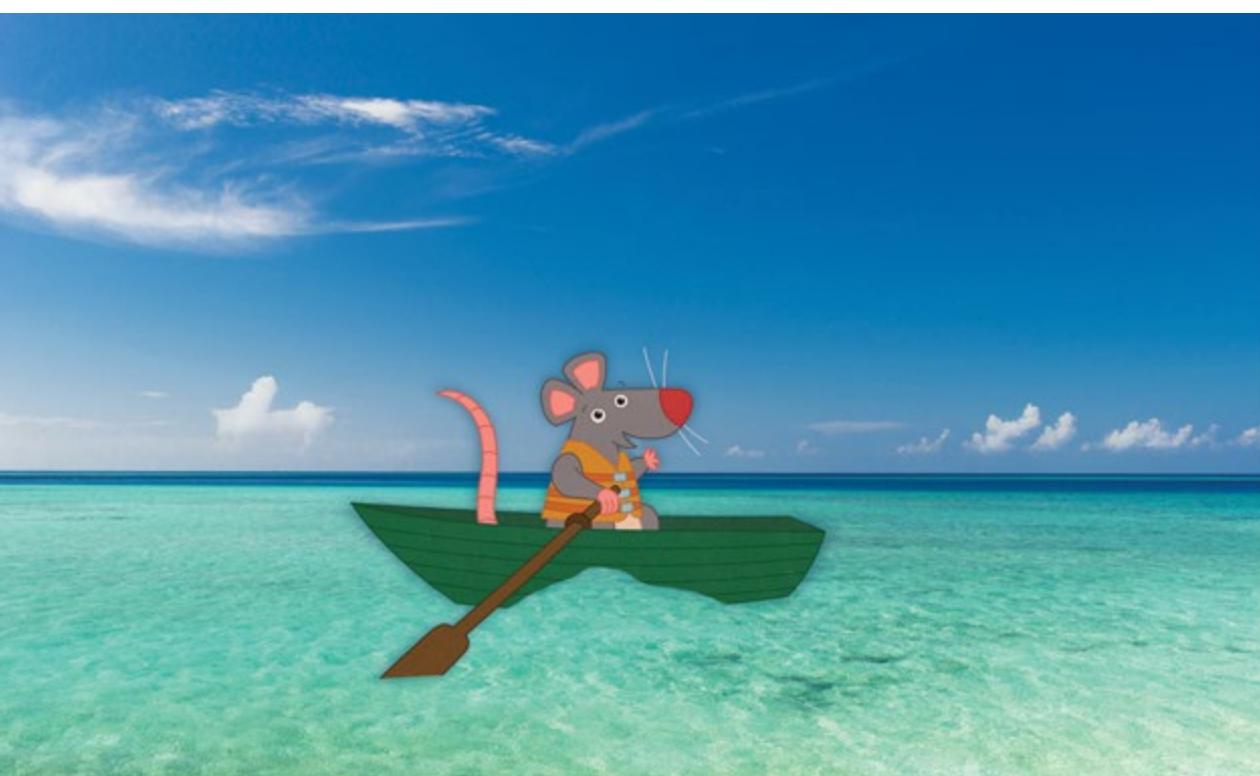
Next, we checked out some different kinds of forests. We went to a hardwood forest full of trees with leaves that change color and drop off in the fall. We saw squirrels, deer, and even bears. We saw lots of different kinds of birds in those tall trees.

Then, we visited a tropical rainforest that was very hot, humid, and wet. There were lots of birds in this forest, too. These birds were colorful, tropical birds like toucans and parrots.



*Rattenborough in three **habitats***

Last, but not least, we visited freshwater and saltwater **habitats**. In the freshwater **habitat**, we saw fish, turtles, ducks, and beavers. In the saltwater **habitat** of the sea, we saw starfish, crabs, lobsters, and sharks!



*Rattenborough in two water **habitats***

Besides learning about **habitats** in first grade, we also studied the different kinds of things that animals eat. Do you remember talking about **herbivores**, **carnivores**, and **omnivores**? We learned that you can sort animals by what they eat.

So, get ready because we are going to learn a lot more about how to sort animals. Rattenborough, your personal animal expert, at your service!

See you next time!

HERBIVORES

Eat only plants



OMNIVORES

Eat plants and meat



CARNIVORES

Eat mainly meat



Different animals eat different things.

Classifying Living Things



Rattenborough here! Do you remember who I am? I'm here now to help you learn about how scientists sort, or **classify**, living things into groups. Since I am an expert on animals, we will focus mainly on animals.

First, I'm going to ask you two very important questions. How do you know if something is living or nonliving? What important **characteristics** do all living things have?

- All living things create energy from food.
- All living things can have babies or make other living things just like themselves.
- All living things have a **life cycle**. They start out small and then grow.
- All living things change to fit in better with their **habitat**.



*All living things are **classified** by their **characteristics**.*

Plants make up one group of living things. We know this because plants have the same **characteristics** that all living things have.

- Plants create energy from food. They make their own food using the sun, water, and gases in the air.
- Plants make seeds that become new plants.
- Plants grow from small seeds into seedlings and become adult plants.
- Plants can **adapt** to their **habitat**. For example, all plants need water, but a cactus in a dry desert does not need as much water as other plants.



*Plants have the **characteristics** that all living things have.*

Animals of all shapes and sizes are living things, too. So, animals also have the same **characteristics** that all living things have.

- Animals get energy from the food they eat.
- Animals can have babies.
- Baby animals are small but grow into adult animals.
- Animals can **adapt** to their **habitat**. For example, the fur of polar bears looks white so they can blend in with the snow where they live.

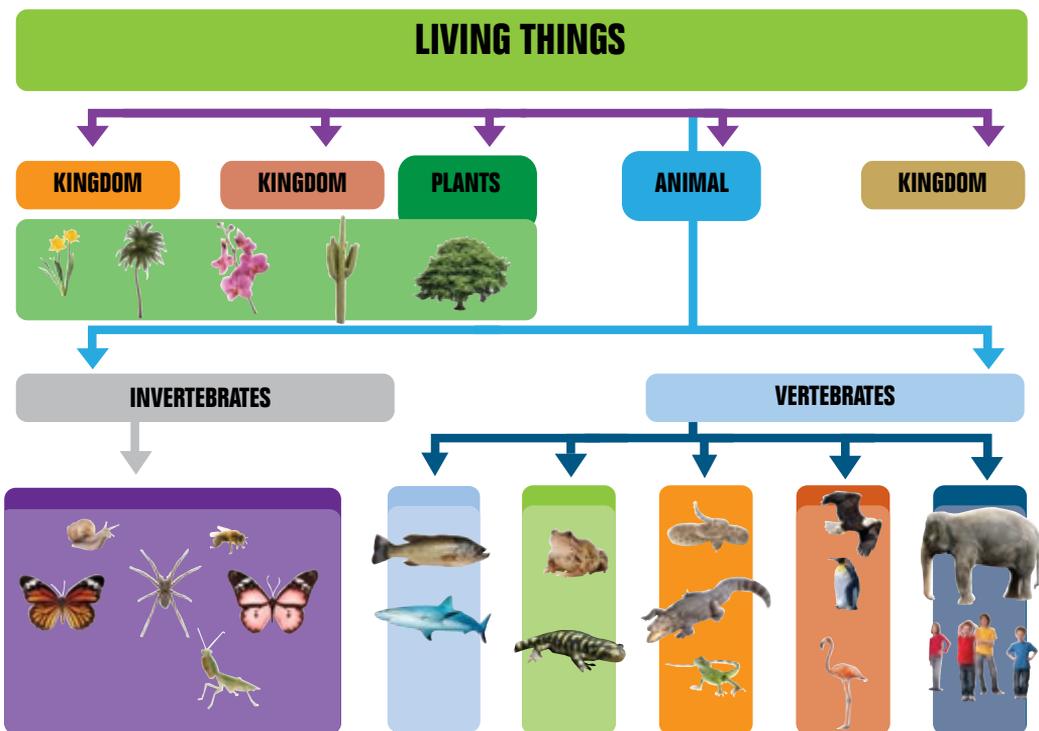


*Animals have the **characteristics** that all living things have.*

Plants and animals are both living things, but plants and animals are different in important ways. For example, animals move from place to place, but plants do not.

Scientists study how living things are alike and different and sort, or **classify**, them into large groups called **kingdoms**. There are five **kingdoms** of living things. You have just learned about two—the plant **kingdom** and the animal **kingdom**. (You will learn about the other **kingdoms** in later grades.) The living things in each **kingdom** can then be sorted into more specific groups.

Scientists study animals within the animal **kingdom** and **classify** them by the **characteristics** they share with other animals. One way scientists **classify** animals into more specific groups is by checking if an animal has a backbone. Insects do not have backbones, but birds and fish do. So, animals with a backbone are in different, more specific groups within the animal **kingdom**. Insects make up the largest group in the animal **kingdom**. But there are other large groups of animals, such as birds and fish. You will learn more about other major groups in future chapters.



Scientists **classify** living things into five **kingdoms**. They **classify** animals into other groups by their **characteristics**.

We **classify** the things around us so we can get to know our world better. As we learn about living things, we also learn about ourselves and our place in the world.

So far, scientists have **classified** over 1 million different kinds of animals. Most of these are insects! Many scientists think there may be close to 10 million other animals that still have not been **classified**!

That's all for now! Rattenborough, over and out! I'll be back in the next chapter to tell you more about how animals are **classified** into different groups.



Insects are the largest group of animals.

Vertebrate or Invertebrate?



Rattenborough, here again! You have learned that scientists who study the animal **kingdom classify** animals into different groups, based on different **characteristics**. Some **characteristics** scientists study are:

- what makes up the animal's skin, such as hair or **scales**
- whether animals give birth to live babies or lay eggs
- whether mothers feed their babies milk from their own bodies
- whether animals are **warm-blooded** or **cold-blooded**



Scientists **classify** living things by different **characteristics**, such as what is on their skin, if they lay eggs or have live babies, how they feed their babies, and whether they are **warm-blooded** or **cold-blooded**.

Another key **characteristic** that scientists study is whether animals have a backbone. Animals that have a backbone are called **vertebrates**. Humans are **vertebrates**. Place your hand on the back of your neck until you feel a bump. Now, rub your hand up and down the middle of your back. Do you feel bumpy bones that run in a row down your back, from your neck down to your waist? That's your backbone. Another name for a backbone is a **spine**.

The backbone or **spine** wraps around and protects an important part of your body called the spinal cord. The spinal cord is a bundle of nerves. Messages travel up and down your spinal cord from your brain to other parts of your body. This is the way that your brain sends signals telling the other parts of your body what to do.



*Humans have a backbone and are classified as **vertebrates**.*

Many other animals also are **vertebrates**. All **mammals**, **reptiles**, fish, and birds have a backbone, so they are all **vertebrates**. They have some type of spinal cord, too.

Animals with a backbone come in all different shapes and sizes. Apes, rhinos, horses, rabbits, bats—and yes, rats and humans, too—are all **mammals** and **vertebrates**. Lizards, turtles, snakes, and crocodiles are **reptiles** and **vertebrates**. Huge sharks and tiny goldfish are also **vertebrates**. Small hummingbirds and large eagles are **vertebrates**, too.

But there are many more animals that do not have a backbone. Animals without a backbone are called **invertebrates**. Insects are the largest group in the animal **kingdom**. Insects are also the largest group of **invertebrates**. Insects include flies, wasps, beetles, cockroaches, ladybugs, and butterflies. Other kinds of **invertebrates** include earthworms and spiders.

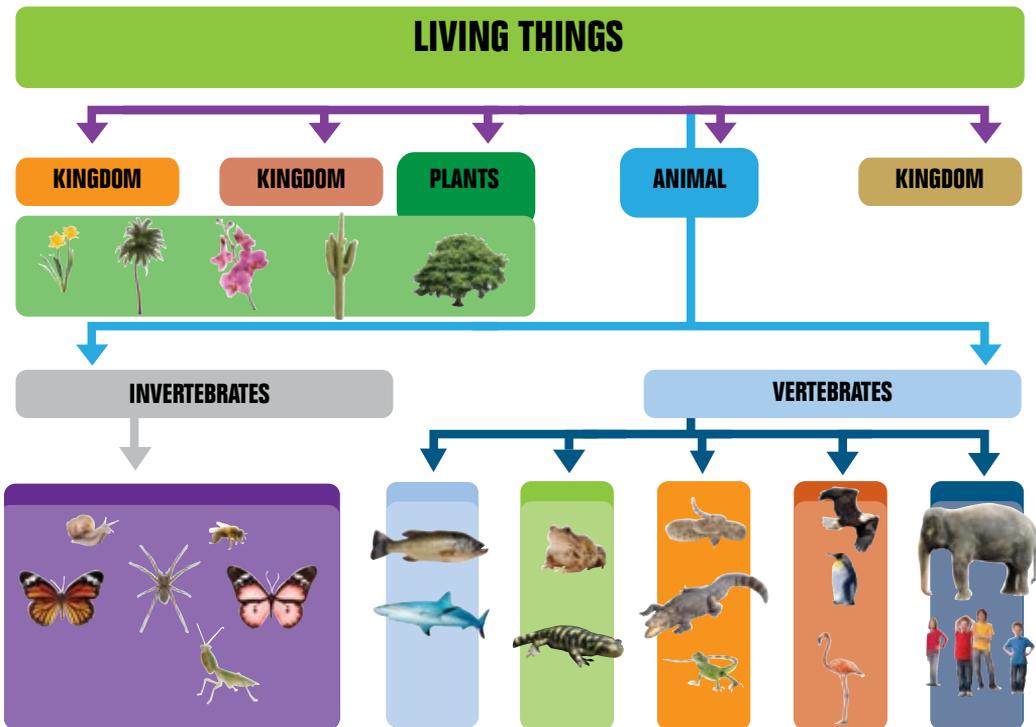
Some interesting **invertebrates** live in the sea. Lobsters, shrimp, and crabs do not have a backbone. The giant octopus is an **invertebrate** as well. Have you ever seen a jellyfish or a starfish? They are also **invertebrates**. So, these animals do not have a backbone or spinal cord.

Chapter 4 Warm-Blooded and Cold-Blooded Animals



Rattenborough, here again! In Chapter 2, you learned how scientists **classify** living things into one group called **kingdoms**. You learned about the animal and plant **kingdoms**. You also learned that animals and other living things are classified into more specific groups.

Today, you will learn more about the animal **kingdom**. You will learn that there are many kinds of animals that have different **characteristics**. Scientists study these different **characteristics** to divide the animal **kingdom** into more specific groups.



Scientists **classify** living things by different **characteristics**.

Many animals—such as cats, mice, rats, cows, elephants, tigers, and even people—belong to a group called **mammals**. So, you and I are **mammals**! All **mammals** have hair, but some have more hair, or fur, than others. You have to get pretty close to an elephant to see its hair, but it is a **mammal**.

Another **characteristic** of **mammals** is that they give birth to live babies. **Mammal** babies begin breathing, moving, and looking for food as soon as they are born. **Mammal** mothers make milk to feed their newborns. This is another key **characteristic** of all **mammals**.

Do you think this crocodile is a **mammal**?



Answer: No!

Why not?

- Crocodiles have **scales**, not hair or fur.
- Crocodiles lay eggs and baby crocodiles hatch from those eggs.
- A baby crocodile does not get milk from its mother. Its first meal might be a bug. Later, he'll eat bigger animals.

Crocodiles belong to a different group of animals called **reptiles**, along with snakes, lizards, and turtles.

Scientists also **classify** animals as **mammals** or **reptiles** based on how the animals control their body **temperature**. All animals need to keep a **constant temperature** inside their bodies for their bodies to work properly. If an animal gets too hot or too cold, its body will not work the way it should. An animal may become sick or even die.

Mammals are **warm-blooded** animals. When **warm-blooded** animals are in a cold place, they use energy from food they eat to help keep their bodies warm. Some **warm-blooded** animals shiver to keep warm. When they shiver, their bodies make heat to keep warm.

When **warm-blooded** animals are somewhere hot, their bodies react in a different way to cool off. Some **warm-blooded** animals, like people, sweat to stay cool. Dogs pant to stay cool. Other **warm-blooded** animals drink lots of water as a way to cool off. Did you know that cows need to drink almost a bathtub full of water a day?

Warm-blooded animals act in different ways to maintain a **constant temperature** inside their bodies. **Mammals** can live in **habitats** with different **temperatures** because their bodies do not rely on the environment. **Warm-blooded** animals, like **mammals**, must eat often to make energy to heat or cool their bodies. Most **warm-blooded** animals need to eat every day. Some need to eat every hour!

Reptiles are **cold-blooded** animals. The body **temperature** of **cold-blooded** animals changes depending on the outside **temperature**. They become hot when it is hot outside and cold when it is cold outside. But **cold-blooded** animals must also keep a **constant temperature** for their bodies to work properly.

Cold-blooded animals do not use energy from their bodies to stay warm or cool. Instead they use what is around them to keep warm or keep cool. Crocodiles stay in water or mud in order to stay cool on hot days. If they need to warm up on cooler days, they bask in the sun.

While **warm-blooded** animals can live in just about any **habitat**, **cold-blooded** animals can only live in certain **habitats**.

Cold-blooded animals do not need to eat as often as **warm-blooded** animals. This is because they do not need lots of food to make energy to warm or cool their bodies. Most crocodiles only eat once a week, but they can live for months and sometimes years without eating!



Cold-blooded animals like these crocodiles cool off by taking a swim when it's too hot. When it's cool outside, they warm up in the sun.

Chapter

5

Fish



Rattenborough here again! You have learned that scientists study the **characteristics** of animals. They do this to divide the animal **kingdom** into different groups, such as **mammals** and **reptiles**. Today you are going to learn about another group of animals within the animal **kingdom**—fish.

Fish are **aquatic** animals, meaning that they spend their lives **underwater**. Most fish are **cold-blooded**. Their body **temperature** changes with the **temperature** of the water. Fish are also **vertebrates**. In fact, they are the largest group of animals on Earth that are **vertebrates**. Earth is covered mostly by water, so it makes sense that fish are the most common **vertebrates**. There are many different types and sizes of fish.

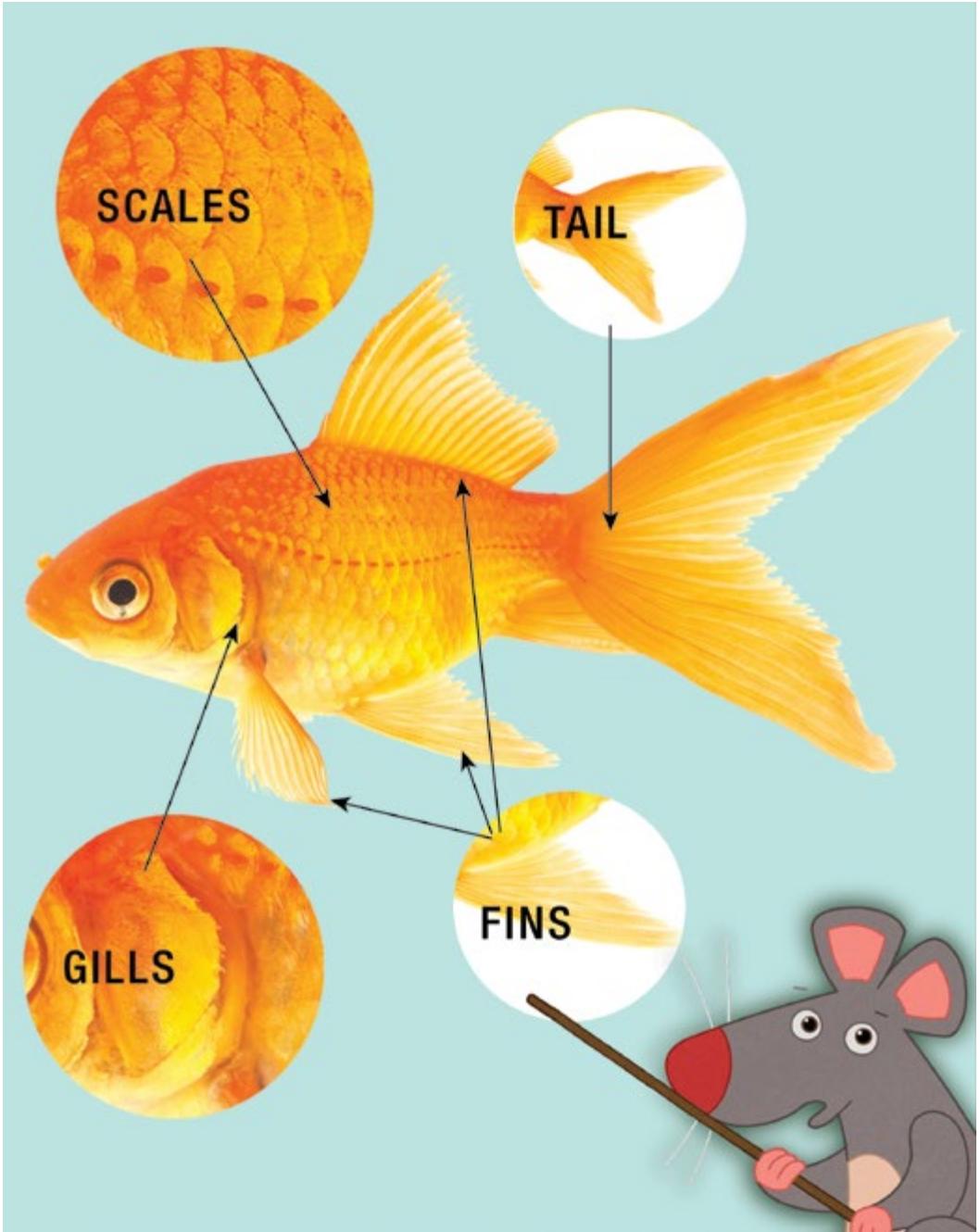


Fish come in many sizes and colors.

Fish lay eggs **underwater**. They also eat and sleep under water. Fish do not sleep in the same way **mammals** sleep. Fish can't close their eyes because they don't have eyelids. When they sleep, they float around or find a place to hide while they rest.

Like other animals, fish need to breathe **oxygen**. But fish do not have lungs like people and they do not breathe **oxygen** from the air. Instead, they have **gills** just behind their heads. Fish **gills** take **oxygen** out of the water, so that fish can breathe. But **gills** do not work well outside water. They cannot take **oxygen** out of the air. A fish will die quickly—within several minutes—if it is removed from water.

Fish have **scales** that cover their skin. **Scales** are rounded and smooth, and there is usually an inner and outer layer. The **scales** protect the skin and help fish move easily through the water. Fish also use the different **fins** on their body and their tails to swim. They are able to glide through the water, rapidly changing direction by using their **fins** and tail.



Most fish live in saltwater, because most water on Earth is salty. Tropical fish that live in the warm ocean are very colorful. They look as if an artist painted interesting patterns on their bodies. Many fish also live in freshwater, including streams, rivers, lakes, and ponds.



*These tropical fish live in a saltwater **habitat**.*

Some fish travel in groups called **schools**. One type of fish that travels in **schools** is salmon. Salmon live in both saltwater and freshwater. Some types of salmon are born in freshwater streams and rivers. After about a year, they make their way to the ocean where they live for one to five years. Then, they **migrate** back to the exact same stream where they were born. They lay eggs and the **life cycle** begins again.

Salmon don't use a map to help them find their way back home. Most scientists think they use their strong sense of smell to find their way. They swim upstream, against the river's current, sometimes swimming hundreds of miles. They leap over waterfalls and rocks to get to the same stream where they were born. They go through all this hard work to reach their home to lay their eggs.

Hopefully, along the way, a grizzly bear or fisherman won't catch them first. It just so happens that salmon are among the tastiest of all fish!

Chapter

6

Fish: Fins and Gills



Read-Aloud

Hello everyone! I'm back after a delightful rest! Today I'm going to tell you more about my friend Paolo Piranha and the group to which he belongs. So far, you've learned that scientists **classify** living things by common **characteristics** in order to study them and show relationships.

You have learned about **cold-blooded** and **warm-blooded** animals. Who remembers if Paolo is **cold-blooded** or **warm-blooded** and can explain what that means? Ah, bravo! Right! Paolo Piranha's internal body **temperature** varies with his surroundings. When Paolo is swimming in warm water, his body **temperature** is higher than when he is swimming in cold water. His body **temperature** is not **constant**; it makes adjustments to the surrounding **temperature** easily.



Rainforest with Paolo

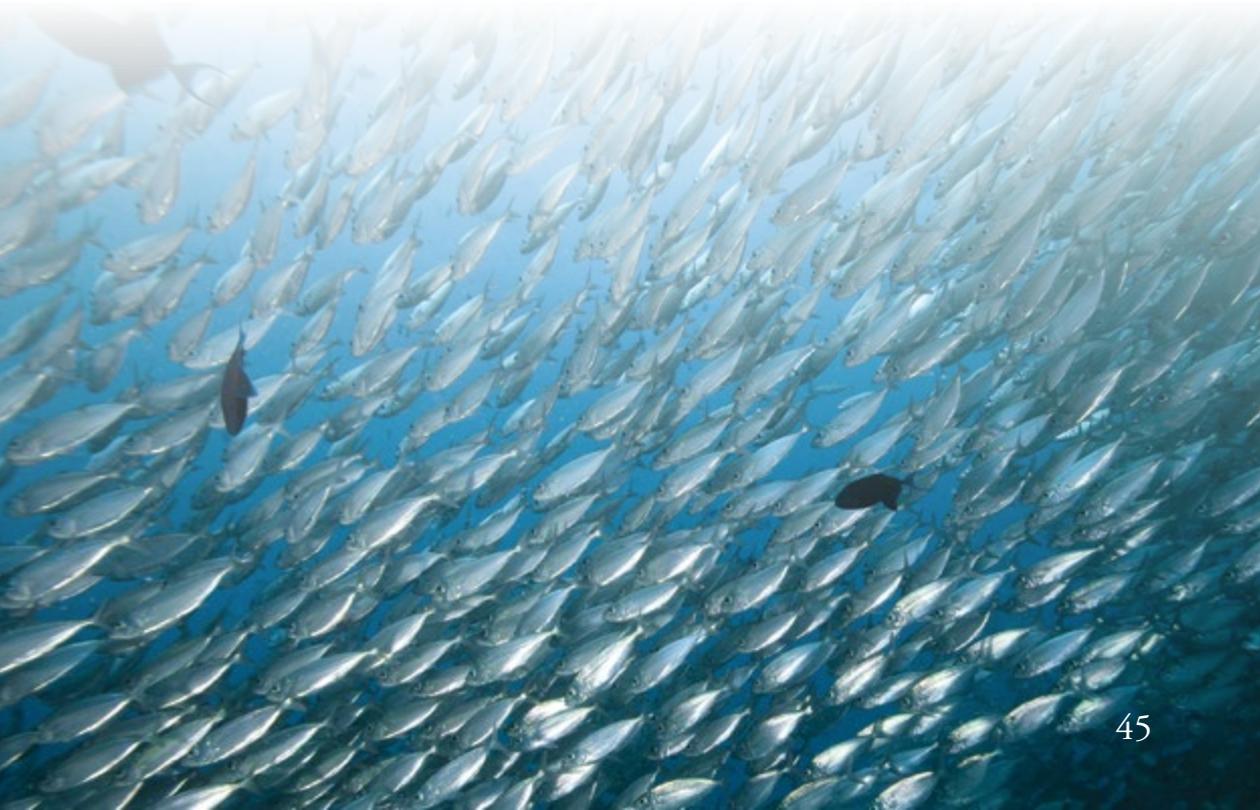
Who remembers another way scientists **classify** animals? I'll give you a hint. It has to do with bones. Right! Some animals have backbones—what's another word for animals with backbones? Yes, animals with backbones are called **vertebrates**. And those without backbones are called . . . Paolo is one of many kinds of animals capable of swimming. Having a strong backbone is one type of body design that helps Paolo and other fish to be good swimmers.

You have also learned a little bit about taxonomy, the science of **classification**. Fish are members of Animalia [an-uh-may-lee-uh], or the animal **kingdom**, just like you and me, but they belong to a different animal group. You are a **mammal** like Hilda Hippo and myself, Ebenezer is a bird, and Paolo is a fish! Fish are **vertebrates** and they are **cold-blooded**. There are many different types and sizes of fish, represented by many species. Today I'm going to teach you a little more about **aquatic** species of animals that are classified as fish. So, to say that in three words: fish are **aquatic**! They don't live on land. They live in water! All species of fish are **aquatic**.

Fish make up the largest group of **vertebrates** on Earth. Let's take a look at my picture that shows a view of planet Earth from space. There is a *lot* more water than land. Nearly three quarters of the earth's surface is covered by water. Fish are swimming about in the earth's waters—from ponds and streams to rivers, lakes, and oceans. They have **adapted** to almost every water **habitat** on Earth except for some very hot springs and the extremely salty Dead Sea. Aside from these places, fish can live anywhere! It's no wonder that fish make up the largest group of **vertebrates** on Earth.



Earth's oceans and fish



Most of those wet, watery fish **habitats** are salty because most of the earth's water is salt water. If you ever swim in the ocean, you may get a little taste of the salty sea. Sharks, cod, and flounder are all saltwater fish.

Freshwater fish live in lakes, rivers, streams, and ponds. What do you think fresh water is? Bass and trout are common freshwater fish, and some humans actually find them very tasty. Come to think of it—I find fish quite delicious when I can get my paws on fish scraps!

Some fish, such as salmon, spend part of their lives in freshwater rivers and part in the salty seawater. Salmon begin their lives in rivers where they stay for anywhere from six months to three years, depending on the species. Then they make an often-dangerous journey out to sea, facing **predators** and changing water **temperatures** along the way. They live in the saltwater ocean for about four years before returning to the freshwater rivers to lay their eggs. Their migration often covers several hundred miles.

Let's stop for a moment to think about the different ways that taxonomists **classify** Paolo, a South American piranha from the Amazon River. He's a **cold-blooded, aquatic vertebrate**. He's a fish to be sure. The question is whether he is a saltwater fish or a freshwater fish. Which of these types of water is his home? That's right! A freshwater river. Paolo's home is the Amazon River, one of the largest rivers in the world. Piranhas live in freshwater environments, mostly rivers, so they are classified as freshwater fish.



Red-Bellied Piranha

Sometimes animals are classified by their physical **characteristics**. Though piranhas do have very sharp teeth, they are not the bloodthirsty **carnivores** they are sometimes perceived to be, always ready to attack humans. Indeed, members of the red-bellied species of piranha do hunt the meat of other fish in large groups, but that's not all they eat. Most piranhas are **omnivores**. You have reviewed **carnivores** and **omnivores** earlier in this Reader. Who can tell me what the difference is? That's right—as **omnivores**, most piranhas eat both animals and plants, eating seeds and fruit that fall into the water. Many piranhas also feed on carrion, animals that have already died. You will continue to hear about the different foods that many different animals eat—this will help you describe animals. Later you will hear about how the shape and size of animals' teeth give you clues about what they eat.

So, you already know several common **characteristics** of fish. But there are more. Can you think of any others? I'll give you a hint. You know that all animals need to breathe **oxygen** in order to live. Fish do not have **lungs**, so we have to wonder how in the world—or in this case under water—do they breathe?

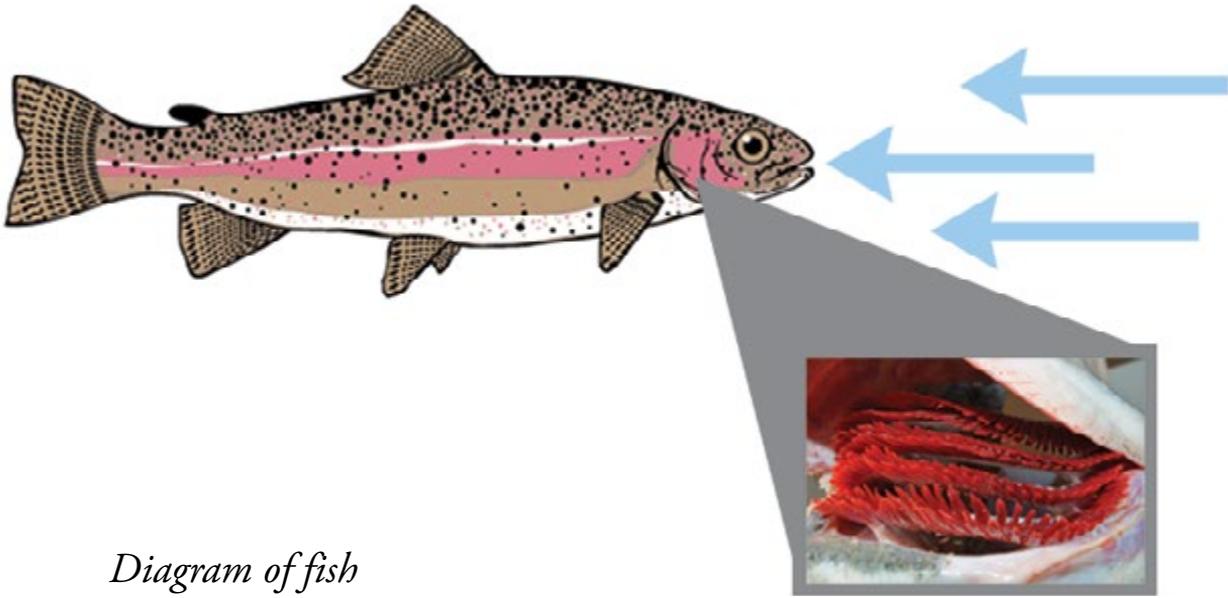


Diagram of fish

Look closely at this fish and see if you can spot its breathing machine. The **respiratory**, or breathing, organs of a fish are called **gills**. All fish have **gills**. They take water in through their mouths and the water passes over their **gills**. The **gills** take in **oxygen** from the water, allowing them to breathe. You will die quickly if you don't get enough air because you draw **oxygen** out of the air. But fish will die quickly if they do not have water, because their **oxygen** comes from water.

The African lungfish is the only fish I know that has lungs in addition to **gills** and can **survive** out of the water. We call this an exception to the rule, or a “pattern-breaker.” Before the dry season, when the water dries up and leaves a sun-baked riverbed behind, the lungfish buries itself deep in the mud and builds a cocoon-like sheath around itself, staying there for a year or more until water returns to the river. Okay then, fish breathe with **gills**, and you breathe with lungs. That’s one big difference between you and fish. What’s another?

Think about how you swim—with your arms and legs, of course! Take a close look at the fish. Do you see any arms and legs? Nope! So, what helps a fish move through the water? Yes, a fish has **fins**—all kinds of **fins!** It has **fins** on the sides of its body for steering, **fins** at the back for powerful speed, and **fins** at the top and bottom to help keep balance. Fish couldn’t begin to move without those wonderfully flat **fins** and their flexible tails. Have you ever worn flippers? Flippers are designed to be like fish tails to help people move more quickly through the water.



Fish scales

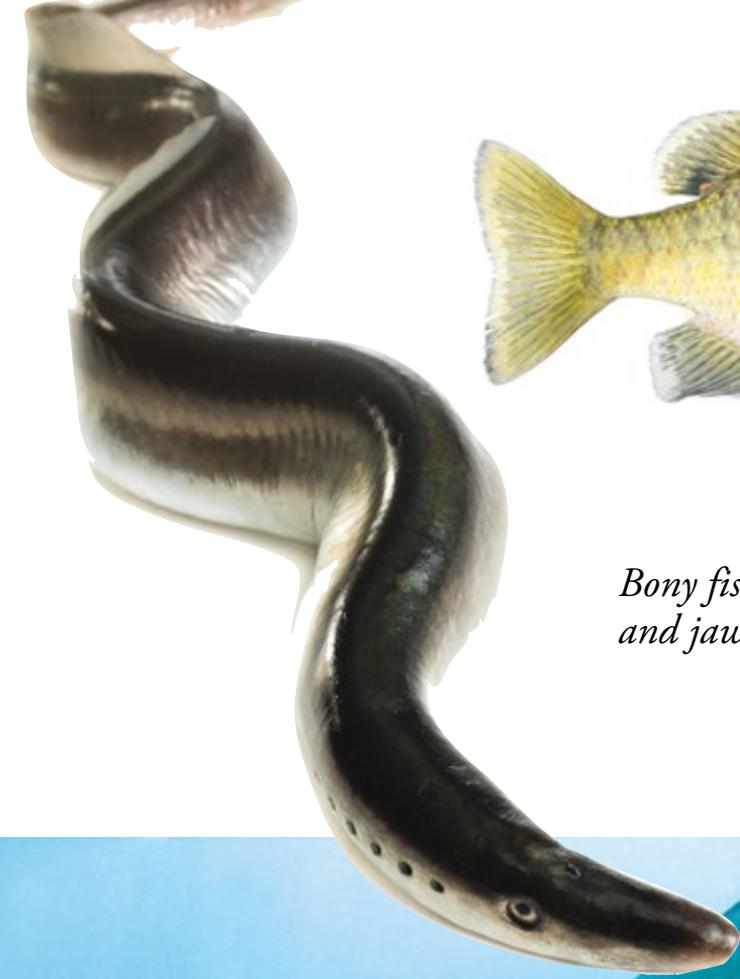
Well, everybody, you've spotted the **gills** and **fins** of a fish, but what about the rest of a fish's body—what about the skin? Hey! Look at me! There I am, taking a close look at fish skin through my magnifying glass. Fish skin is very different from your skin. Fish have scaly skin to help protect them and help them move more easily through the water. These hard overlapping **scales** are rounded and smooth. And fish have more than one layer of skin—just like you!

Many scientists believe that fish appeared in the oceans more than 400 million years ago. It's hard to imagine how many fish live in all of the earth's waters today. More than thirty thousand species are known, but a vast amount of the world's oceans have yet to be explored. What scientists actually know for certain is like one drop of water in a vast bucket! Scientists discover more and more all the time. Maybe one day you will be one of those scientists who will discover something new!

Most fish—such as salmon, goldfish, tuna, and eel—**spawn**, or reproduce, in a very unique way. When fish spawn, the mother releases her eggs into the water and the male **fertilizes** them, or makes them complete and able to grow into baby fish. Once these soft eggs are fertilized, they are often buried along the river bottom. Here, they develop and eventually hatch into tiny fish called larvae [lahr-vee], the early form of fish. Some sharks, on the other hand, are among the few examples of live-bearing fish. Almost the opposite of external spawning, the mother shark's eggs develop internally, remaining inside her body until they are born as live young, rather than as eggs.



Fish eggs and shark mother with baby



*Bony fish, cartilaginous fish,
and jawless fish*



Taxonomists have another way of grouping fish. They have divided all fish into three classes, or classifications. Most fish belong to the class called bony fish. These fish have skeletons that are made of hard, bony material. Most of them have a swim bladder, kind of like an internal “floatie,” which helps them float. Perhaps you know of some fish that are considered bony fish—bass, clownfish, minnows, and sunfish are just a few! Another smaller class has some well-known members. As you have heard earlier, fish like the shark and the stingray have skeletons made of cartilage. This class of fish has tooth-like **scales**, and some of them breathe through spiracles—small **gill** openings on the tops of their heads! The last class of fish is not as familiar to most of us—these fish are jawless and include some interesting members like the hagfish and the lamprey.

Earth’s underwater world—Paolo’s world—is a fascinating place, much of which has not yet been explored. Perhaps some of you will become scientists and study **aquatic** creatures like Paolo. Today, we’ve only talked about fish, but not all sea animals are fish. There are many other **vertebrates** in the ocean, such as dolphins, sea snakes, and sea turtles. The sea is also home to tens of thousands of species of **invertebrates**—animals you may have seen before, such as crabs, clams, sand dollars, and squid.

Let's review the **characteristics** of fish. How many fish **characteristics** can you name? Great job! Now, I'm going to read you some riddles of sea creatures. See if you can identify which ones are fish and which ones are not.

1. I am a jellyfish. My soft body has no bones, and I have neither **gills** nor lungs for breathing. **Oxygen** moves easily through my thin skin. Sometimes I lay eggs, but I may also give live birth. I am **cold-blooded** and will surely die if left out of water. (No, I am not a fish, even though the word is in my name; I am classified as an **invertebrate**.)
2. I am a **cold-blooded** eel. My slimy, snakelike body is covered in **scales** and hides my backbone from view. I have **gills** and **fins**, and I lay my eggs in the water where I live. (Yes, I am a fish.)

3. I am a sea horse. My long body is encased in bony rings. I breathe with **gills**, and my **fins** help me glide through the water. I am the male, and I carry eggs in my pouch until they are ready to hatch. (Yes, I am a fish.)

4. I am a whale, one of the largest animals of the sea. I breathe with lungs and give birth to live babies. Even though I am not covered in hair, I do have a few bristles of hair here and there on my head. (No, I am not a fish, but I am a **vertebrate**. I am a **mammal**.)

Sorting **aquatic** creatures is not as easy as it looks, is it? Next time, things will be even more interesting as we learn about some **aquatic** animals that can live on land as well. How do you think they can do that? You will find out more the next time we meet!

Chapter

7

Amphibians



Greetings once again from your pal and animal expert, Rattenborough! Are you ready to learn about another group of animals within the animal **kingdom**? The group we are going to talk about today is really interesting. They live both in water and on land. This group of animals is called **amphibians**. The word **amphibian** comes from Latin meaning “both sides of life.”

Amphibians are classified into three more specific groups. Frogs and toads are the largest group. Salamanders and newts make up another. Animals in the third group do not have legs, so they look more like large snakes. We don't know as much about this group of **amphibians** because they live mostly underground.

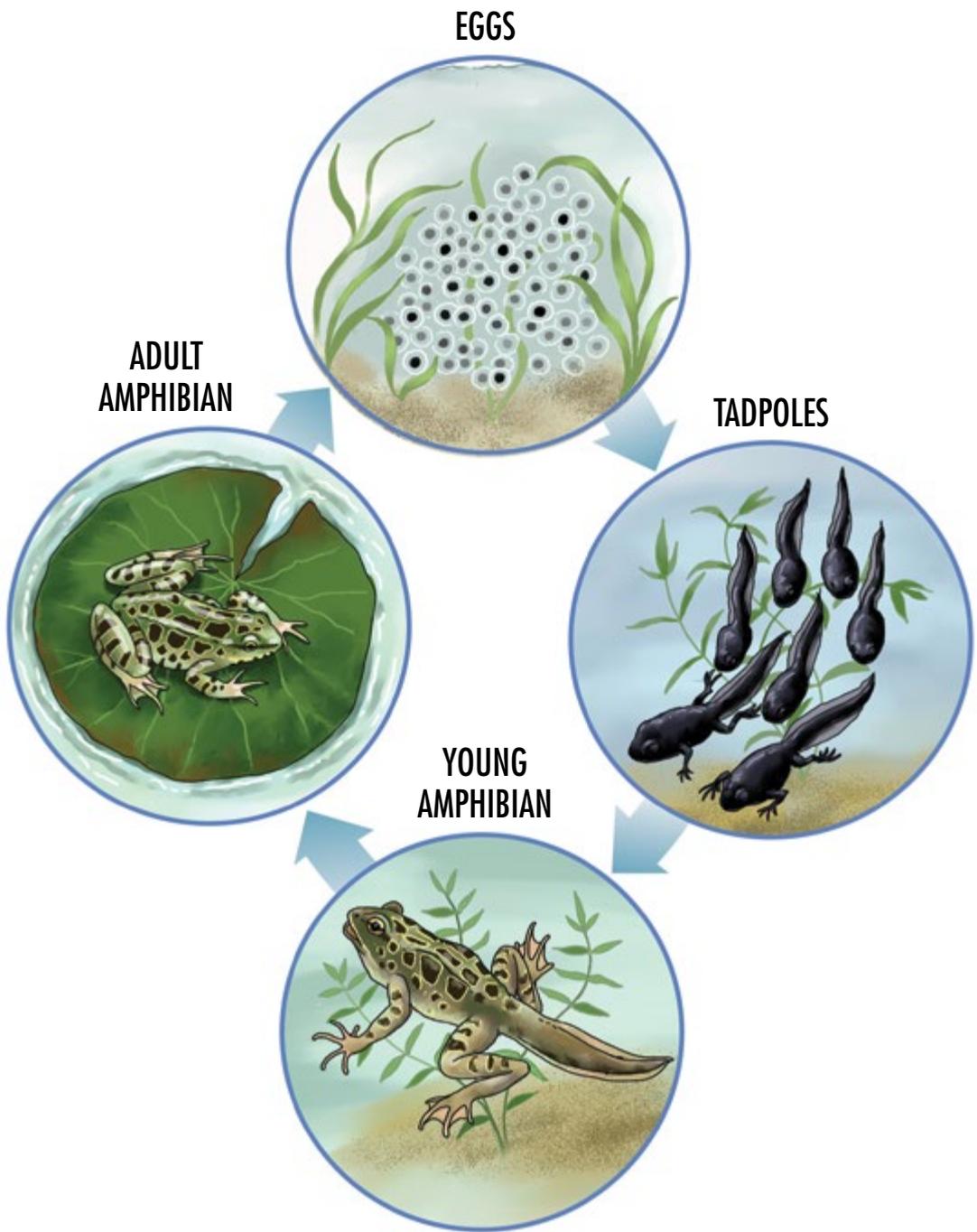
To understand the **life cycle** of an **amphibian**, let's take a closer look at an American toad.

Like all **amphibians**, toads are **cold-blooded**. An **amphibian's** body **temperature** changes as the outdoor **temperature** changes. Some **amphibians hibernate** during the winter. Some toads dig deep underground. Other **amphibians** like frogs bury themselves in mud at the bottom of a pond. **Hibernating amphibians** can **survive** for months. They do not eat or move, using only the fat stored in their body to stay alive. Frogs and toads—and all **amphibians**—are also **vertebrates**.

A toad's **life cycle** begins as one of thousands of soft, slimy eggs. The mother lays her eggs close to shore in a pond, lake, or calm spot in a river or stream.

But most of these eggs will never hatch. Instead, they will be eaten by fish or other animals. If the water moves the eggs away from the shore and into direct sunlight, the eggs will dry out and die.

Out of the thousands of eggs laid, a few hundred toad eggs manage to hatch into **tadpoles**. A **tadpole** is very fragile. Its young body is made up mainly of a mouth, a tail, and **gills**. At this stage, **tadpoles** are **aquatic**. Like fish, they use **gills** to breathe underwater.

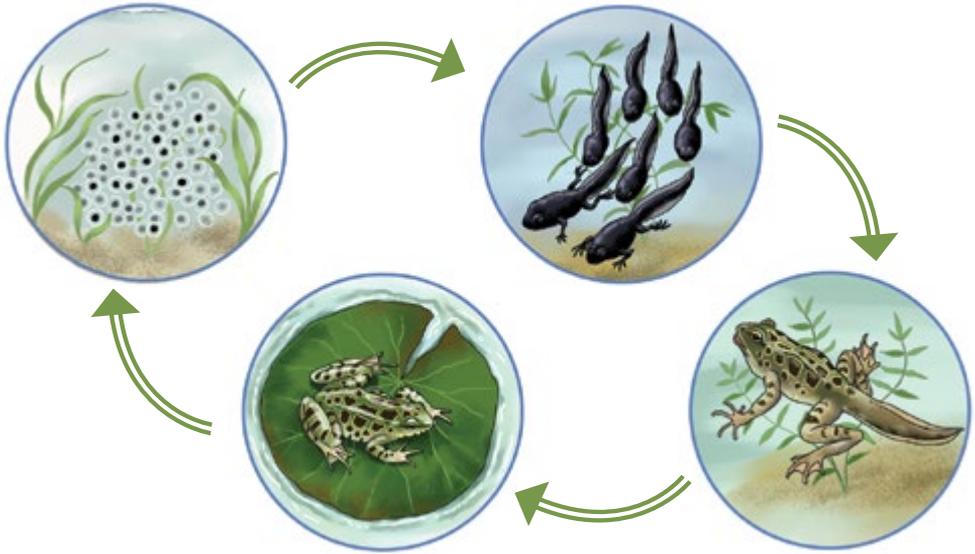


*The **life cycle** of a frog or toad*

After a while, **tadpoles** begin swimming around and eating tiny **aquatic** plants. **Tadpoles** tend to stay together in **schools**, like fish. However, this makes it more likely that other animals will be able to catch and eat them. Most **tadpoles** end up as fish snacks.

If a **tadpole survives** for a month, skin will begin to grow over its **gills**. After about six to nine weeks, the **tadpole** also starts to grow little legs. As its body changes, the young frog or toad starts to look less like an **aquatic** animal and more like a land animal.

After a few months, a toad will make its way out of the water to land. At this stage, it may still have a tail, but that won't last long. By this time, its **gills** have become lungs. That means the toad now breathes **oxygen** from the air instead of **oxygen** from the water, like fish. Soon, it will be a full-grown adult toad living and hopping around on land. Adult **amphibians** are **carnivores**, eating insects, small **reptiles**, and even mice.



*Bottom: A young **amphibian** leaving the pond for land.
Top: The **life cycle** of a frog or toad*

Adult toads are very good swimmers and can even swim underwater. But they cannot use their lungs to breathe underwater. Instead, their thin, moist skin absorbs **oxygen** from the water.

Amphibians are a very interesting animal group. **Amphibians** are the only type of animal that have both **gills** and lungs. As adults, they live on land but lay eggs in the water. The Latin meaning of the word **amphibian** makes perfect sense!



*This toad may be preparing to **hibernate** for the winter.*

Chapter

8

Tree Frogs



As you have learned, **amphibians** are **vertebrates** that spend part of their lives in water and part of their lives on land. They start out like fish because they are born with **gills** and can breathe underwater. They later develop lungs, so they can breathe air and live on land. Tree frogs are one type of **amphibian**. They are different from most **amphibians** because they spend most of their lives in trees.

The American green tree frog can be found in most parts of the southeastern United States. A typical American tree frog is only about two inches long, so they are pretty small. But they can be loud if there are a few hundred of them gathered together.



An American green tree frog

If you live in the southern United States, near water and lots of trees, your summer nights may be filled with the gentle chirps of tree frogs.

American tree frogs range in color from lime green to yellow. A tree frog's most distinct **characteristic** is its long toes with **suction cups**. The **suction cups** allow a tree frog to cling to and climb anything. A tree frog can even stick to a window.

Tree frogs like to stay in the trees, so you are more likely to hear them instead of see them. They will leave the trees to lay eggs. They are most likely to come down to the ground after a heavy rain, when everything is nice and wet.



*This tree frog's long toes with **suction cups** help it climb this branch.*

If you do see one, don't worry! They are pretty friendly. They are easy to catch, too. If you catch one, it might sit on your hand or crawl around on your back.

You will probably only find them at night because they are **nocturnal**. This means they sleep during the day and are active at night. They eat small insects, such as crickets, moths, and other **nocturnal** insects.

Like other **amphibians**, American green tree frogs lay their eggs in or near the water. Most of them like to lay their eggs very close to water, but not quite in it. Their favorite place is on a tree limb or leafy branch that has fallen into a pond.



*The American green tree frog is **nocturnal**.*

Different kinds of tree frogs have been around since long before the dinosaurs roamed the earth. You can find many different types of tree frogs in parts of North and South America, Europe, and Southeast Asia. This is a red-eyed tree frog, which you can find in Mexico and much of Central America.

Most tree frogs prefer a fairly warm, wet **climate**. If you live in a place with tree frogs, consider yourself lucky. In the summer, you can fall asleep each night listening to the steady song of a tree frog **orchestra**.



This type of tree frog lives in Mexico and Central America.

Chapter

9

The Poison Dart Frog



A poison dart frog lives in the rainforests of South America. It is a tiny frog. It is only an inch and a half long.

It is cute, but it would be a mistake to pet this frog. Frogs like this one **secrete** poison. That means the poison seeps out from its skin. Some poison dart frogs secrete a mild poison. Others secrete a poison that is strong enough to kill humans. The poison helps protect the frog. It tells other animals to leave the frog alone.

The native people of South America collected poison from this kind of frog. They dipped darts into the poison. Then, they used blow guns to fire poisoned darts at their enemies. This is why the frogs are called poison dart frogs.

Many poison dart frogs are brightly colored. You might think this would be a dangerous trait. After all, many animals are camouflaged. Their camouflage helps them hide from **predators**. Why, then, would an animal be brightly colored? Why would it stand out? Wouldn't that make it easy for **predators** to spot?

Sapphire blue species of poison dart frog.



Scientists think that is precisely the point. They have noted that many **poisonous** animals are brightly colored. They think the color serves as a warning sign. It tells other animals, “Watch out! You don’t want to eat me! I will poison you!”

Poison dart frogs are **amphibians**. That means they live in water and on land.

Poison dart frogs lay eggs. The female lays the eggs in a moist spot. Then, the male fertilizes the eggs. Eventually, **tadpoles** hatch out of the fertilized eggs.



Some **amphibians** lay a lot of eggs and leave the young to fend for themselves. Poison dart frogs are not like that. They are dedicated parents. The adult frogs carry their newly hatched **tadpoles** up into the canopy, or tops, of trees above the rainforest. They carry the baby **tadpoles**

Poison dart frog.



*Poison dart frogs have brightly colored skin that gives off the warning to **predators** of their toxicity.*

on their backs, one at a time. The parents secrete sticky mucus. This sticky mucus keeps the **tadpoles** from falling off the parents' backs during the climb up to the canopy.

For many species, the mothers do much of the childcare. This is not true of poison dart frogs. Mothers and fathers both take care of the young. Moms and dads both carry the **tadpoles** up into the canopy.

The parents deposit the **tadpoles** in small pools of water that form in plants at the top of the canopy. The **tadpoles** live in these pools for a while. They breathe underwater, using **gills**. They eat tiny animals that live in the water. If there is not enough food, the mother may lay eggs in the pool. The **tadpoles** can eat the eggs.

Eventually, the **tadpoles** experience a metamorphosis, or change. They grow legs. They develop lungs. They change into frogs. Once this happens, they are ready to leave the water.

The **habitat** of the poison dart frog is under threat. It is threatened by logging and farming. If trees are cut down, these frogs have nowhere to live. In recent years, lots of trees have been cut down in South America. Some people cut them down to sell the wood. Some cut them down to set up farms. As a result of this tree cutting, some kinds of poison dart frogs are now endangered.



Strawberry Poison-dart Frog.

Chapter

10

Reptiles: Cold-Blooded Scaly Vertebrates



Read-Aloud

Hello, boys and girls. As you can see, Anna Anaconda is our starting place for today's lesson. She is a green anaconda, one of the largest snakes in the world. When she unwinds, she is about as long as six of you stretched head-to-toe across the room, and she weighs about five hundred pounds! That's more than about eight of you put together!

Anna Anaconda belongs to a group of animals that shares a lot of the same **characteristics** as the **amphibians** you learned about last time. Who knows the name of the group used by taxonomists to **classify** snakes? Yes, snakes are **reptiles**. **Reptiles** include crocodiles, alligators, lizards, turtles, and tortoises. But right now I want to focus on one **reptile** only: Anna. It's no secret that she has a very high opinion of herself—she was quite fond of telling me so when I visited Peru. She thinks she is rather pretty, and I quite agree!



Rainforest with piranha, toad, and Anna Anaconda

In spite of her heavy body, Anna is a very good swimmer. Unlike some of her reptilian relatives, she is an **aquatic** snake, preferring swamps and rivers to the land.

Snakes often have a bad reputation. Some snakes are **poisonous**, releasing **poisonous** liquid called **venom** when they bite. Anna's teeth are actually quite small and she is not **venomous**, so you need not worry about that. However, some people fear anacondas because they are members of a family of snakes called constrictors. Does anyone know what that means? Constrictors catch and kill their prey by coiling, or wrapping, around and squeezing them very tightly. Anacondas' jaws open

so wide that they can swallow animals whole—fish, caiman, even jaguars and small deer. The anaconda's powerful muscles crush the bones of its prey as it constricts. Once swallowed, the anaconda slowly digests its meal.

Uh oh, some of you look fearful. Don't worry. You're safe. Anacondas don't live where you live in North America; you'll find them far, far away on the continent of South America. That's where I met Anna! Anna was sure to tell me that as far as she knows, there is no documented record of an anaconda ever killing a man, woman, or child. She and all anacondas are **nocturnal** animals and they hunt at night, eating frogs, toads, birds, fish, and turtles. She doesn't have to hunt very often because one animal will satisfy her appetite for a long time.

Well, that's a lot of information about Anna's **characteristics**, the ways by which scientists **classify** her as belonging to the animal class called **reptiles**, or reptilia. Anna and other **reptiles** share some common **characteristics** with **amphibians**. Many scientists believe **reptiles** evolved from **amphibians**. **Reptiles** are all **vertebrates** because they all have backbones, and they are all **cold-blooded** because their internal **temperatures** change with their surroundings. Most **reptiles** can adjust

their body **temperatures** by basking in the sun to stay warm, or by hiding under a rock to stay cool.

Just like **amphibians**, **reptiles** live on land and in water. However, these two groups do—of course—have their differences. **Amphibians** depend upon water to stay alive much more so than **reptiles**. **Amphibians'** thin, wet, slimy skin needs moisture to absorb **oxygen** from the air, but **reptiles'** skin is waterproof. Unlike toads and salamanders, Anna and other **reptiles** do not breathe through their skin, which is hard, dry, and scaly. They use only their lungs to breathe air, which means they are able to withstand very harsh dry weather, conditions under which **amphibians** would not be able to **survive**. Of course, because they have lungs, this also means that **reptiles** cannot stay underwater very long without coming to the surface to breathe.

Amphibians usually spend part of their lives entirely in water, but this is not true of **reptiles** as a group. Whereas **amphibians** begin life with **gills**, **reptiles** are born with lungs and are never dependent upon **gills** for breathing. Remember how different baby **tadpoles** look from adult toads? This is not the case for **reptiles**. Baby **reptiles** usually look a lot like their parents. They do not undergo metamorphosis the way that **amphibians** do.



*From top left going clockwise: gecko, iguana, gecko, chameleon.
Bottom: Komodo dragon*

Let's take a look at some of the animals that belong to the animal group classified as **reptiles**. These include lizards, geckos, iguanas, and chameleons. Unlike snakes, most lizards have four legs. Chameleons have a keen sense of sight and very long tongues. Their brilliant colors—all shades of pink, blue, red, orange, turquoise, and green—help them camouflage when they come face-to-face with their enemies.

Earth's largest living lizard is the Komodo dragon. It can grow to be ten feet long and may weigh as much as 150 pounds! These giant island **carnivores** eat animals as large as goats, pigs, and deer.

Saltwater crocodiles are the largest **reptiles** on Earth, some weighing up to one ton. Looking like very large lizards, crocodiles make their homes in tropical **climates**, and are often seen floating like logs in the water with only their nostrils, eyes, and ears showing. Like Anna, they are **nocturnal** hunters, hunting at night. Crocodiles have the most powerful bite in the entire animal **kingdom** and are fierce hunters, living off fish and small **mammals**. Some live to be more than one hundred years old!



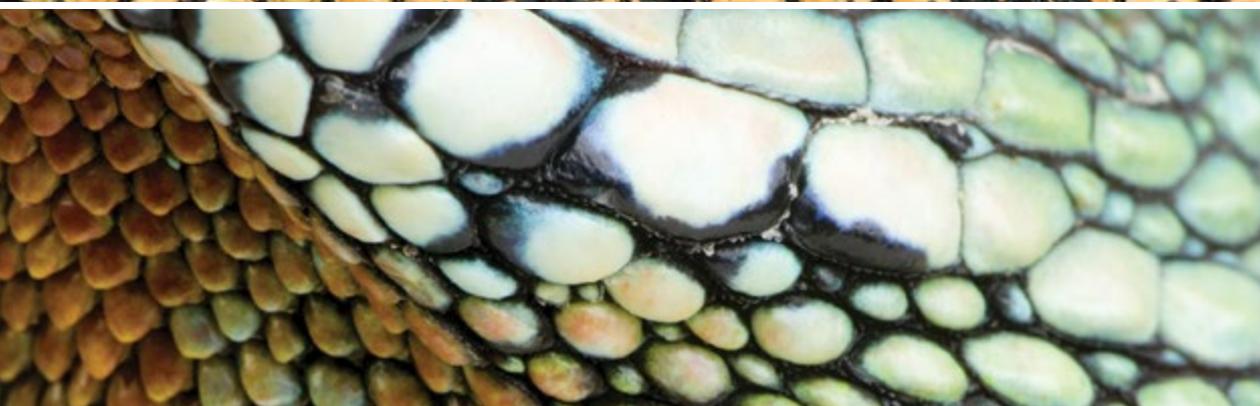
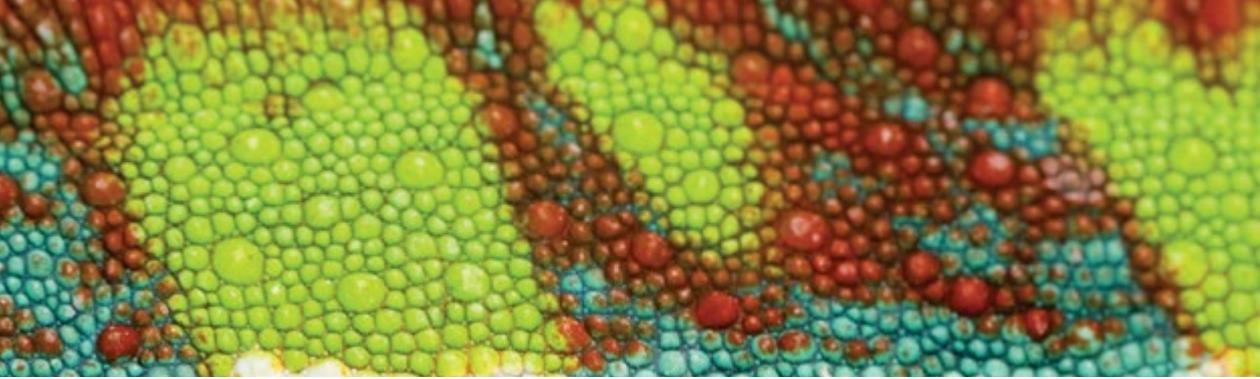
Alligator and crocodile

Alligators resemble crocodiles, but they are usually less **aggressive**, or boldly forceful, and live in freshwater **habitats**. Can you tell the difference between an alligator and a crocodile? Alligators usually have a wide, rounded, U-shaped snout, and crocodiles tend to have longer, more pointed, V-shaped noses.

Look at all of these **reptiles** side by side: chameleons, Komodo dragons, crocodiles, and alligators. What do you notice about their skin? Is it rough or smooth? Does it look thick or thin?

Remember when I mentioned that **reptiles**' skin is waterproof, and that it is hard, thick, and scaly? Their type of scaly skin protects them from overheating, and because their skin is waterproof, it keeps water *inside* their bodies. Because **reptiles**' skin is very **sensitive** to—or easily affected by—**temperature**, it becomes hot or cold very quickly when exposed to sun or shade. Like many **amphibians**, some **reptiles** shed their skin. Many lizards and snakes shed their skin several times a year as they grow. Snakes do not eat their shed skin the way **amphibians** do.

Turtles and tortoises are the only **reptiles** with bony shells as part of their skeletons. Their backbones are actually fused to their shells. These shells may be flat or domed. Turtles have softer shells so that they can swim faster, but land-dwelling tortoises need hard, leathery shells to protect them from **predators**. Their legs vary in appearance, depending upon where they live as well. Sea turtles have oar-shaped flippers for moving through water **effectively**. Many turtles have claws which help them dig, and pond turtles also have webs between



Reptile scales



Frog and snake eggs

their claws to effectively maneuver, or move, through water. Land tortoises—like the giant Galapagos—have huge, column-shaped legs with claws. These claws help them dig into the ground to move across it. Some turtle species live for more than a century! That’s a very long time indeed.

Body coverings are an important difference between **amphibians** and **reptiles**. Another thing that sets the two groups apart is their eggs. Remember the picture that showed strands of thousands of soft eggs that Tabitha Toad laid in the pond? Most **reptiles**

lay far fewer eggs, and they lay their eggs in nests on land. **Membranes**, soft outer coverings, that provide protection and also help to hold in necessary water for eggs to grow, usually coat the inside of reptilian eggs. In most **reptile** species, the eggs are also covered in leathery, **calcified** shells. A few snakes and lizards give birth to fully formed, live young instead of laying eggs. The garter snake, a snake that is right here in North America, is one of these exceptions to the rule; so is the Solomon Island Skink, a lizard whose **habitat** is near the continent of Australia.

Like **amphibians**, **reptiles** live all over the world. They prefer hot, low areas like rainforests, prairies, deserts, and oceans, but they can be found everywhere except near the cold South Pole.

If you are as fascinated as I am with **reptiles** and **amphibians**, you may want to think about becoming a herpetologist. Yes, indeed—*herpetologist* is the name given to a scientist who specializes in herpetology, the study of certain crawling animals, specifically, **reptiles** and **amphibians**. With more than 5,600 species of lizards alone, that should keep you busy for a lifetime!

Chapter

11 Reptiles



Hi again, it's Rattenborough! You have already learned a little about today's group of animals, which are **reptiles**. You already know that **reptiles** are **cold-blooded** animals and **vertebrates**. But did you know that **reptiles** live both on land and in water like **amphibians**? **Reptiles** have lungs from the time they are born, not **gills**, like **amphibians**.

You may also already know that **reptiles** lay eggs. Some **reptile** eggs have soft shells and some have hard shells. They lay their eggs on land. A few snakes hold the eggs inside their bodies until they hatch. Very few rare **reptiles** do give birth to live young, never making real eggs.

Many different groups of animals are classified as **reptiles**. These include animals such as crocodiles, alligators, turtles, tortoises, snakes, and lizards.



*Crocodiles, turtles, snakes, and lizards are all **reptiles**.*

Some people may think **reptiles**, mainly snakes, are scary. Most **reptiles** will not harm people. But there are some **reptiles** that you should try to avoid. The black mamba is the best example. This is the longest and most **poisonous** snake in Africa. It is also the deadliest snake in the world. A mamba **injects venom** whenever it bites something. A mamba bite can kill any animal—even a human—in less than 20 minutes!

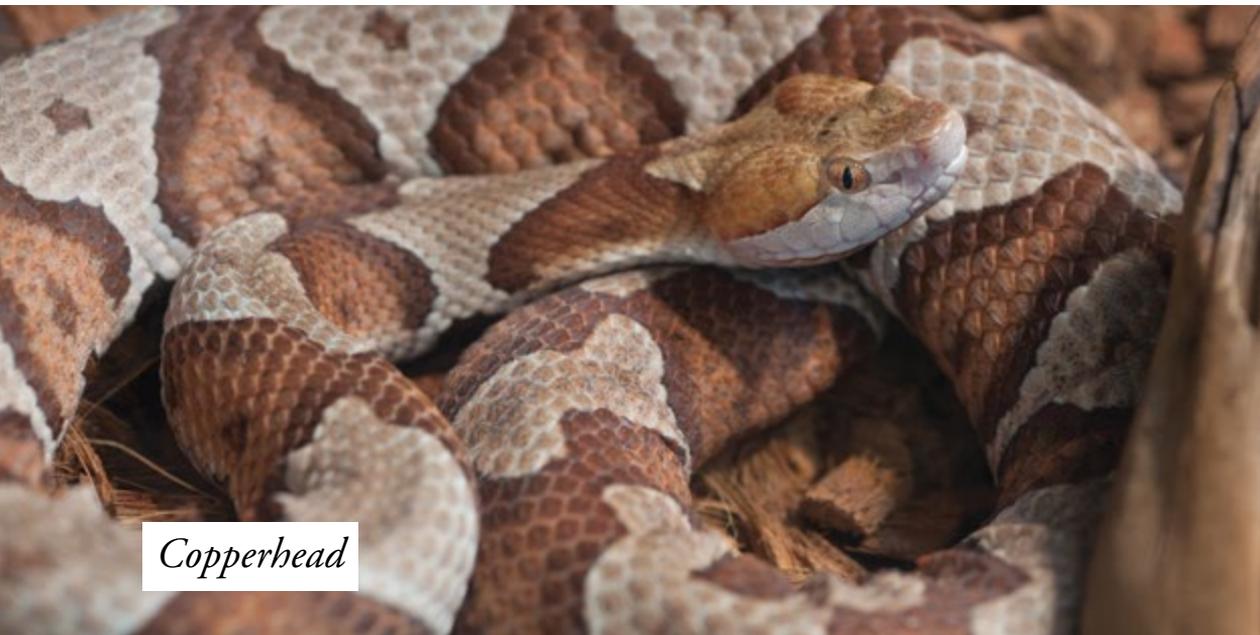
Rattlesnakes, copperheads, and water moccasins are types of **poisonous** snakes found in the United States. Rattlesnakes, or rattlers, are easy to spot because they have “rattles” that shake on their tails. You know when there is one nearby because you can hear the rattles shaking.

Copperheads have a triangle-shaped head and dark stripes. They are normally less than three feet long. They prefer to live in rocky, wooded areas. They only bite humans if they are attacked or startled.

Water moccasins live in the water so they are hard to spot. They have a dangerous bite, but rarely attack humans. If you live in a southern state like Florida, Alabama, Mississippi, or Louisiana, you are more likely



Rattlesnake



Copperhead



Water Moccasin

to see one. They live in swamps or shallow lakes. You might want to avoid swimming in shallow waters if you live in those states.

Some people think snakes are slimy because their skin looks shiny, but most **reptiles** have thick, dry, scaly skin. **Reptiles** are known for **molting**, or shedding their skin. **Reptiles** shed their skin several times during their lives. Snakes, for example, shed their skin in one big piece. They do this when they grow too big for their current skin.

The biggest **reptile** is the saltwater crocodile, which lives mainly in Australia and a few parts of India and Asia. Male saltwater crocodiles can grow to be 20 feet long or more! Attacks on humans are rare. If they do attack a human, it's usually not a happy ending.

Crocodiles have the most powerful bite in the entire animal **kingdom**. Their bites are ten times stronger than that of a great white shark. Despite their power when they bite and snap their jaws shut, it is fairly easy to hold a crocodile's mouth closed. They open their mouths using a weak set of muscles. In fact, a third grader may be able to hold a crocodile's jaw shut . . . would you like to try?



This snakeskin has been left behind by a large snake after it molted.

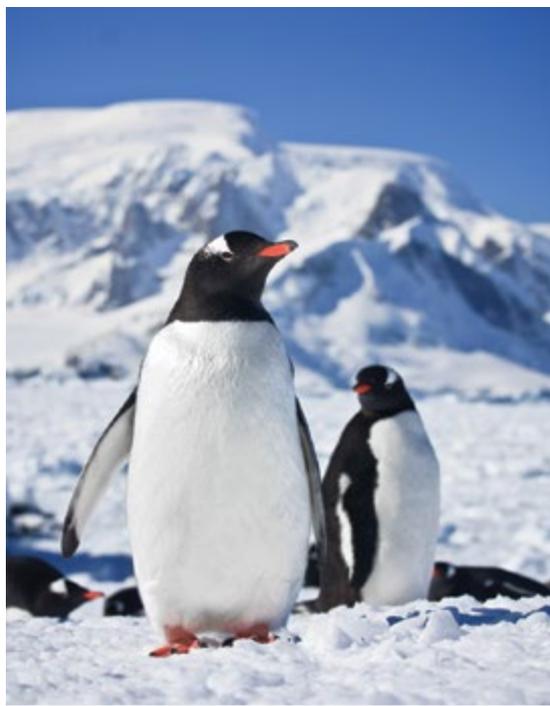
Chapter

12 Birds



Yoo hoo—over here! It’s Rattenborough! So far, you have learned about the following groups of animals within the animal **kingdom**: **mammals**, **reptiles**, fish, and **amphibians**. Do you remember all of their different **characteristics**? Do you remember that we said that fish were the largest group of **vertebrates** in the animal **kingdom**? Well, today we are going to talk about the second largest group of **vertebrates**—birds.

Birds belong to a group all their own. Birds, like all living things, are highly adaptive, meaning they can **survive** in many different **habitats**. You can find them in deserts and in the coldest places on Earth. Many love forests. There are only a few birds found way out to sea, many miles from land. But if you are out in a boat only a few miles from land, you may see many sea birds, such as seagulls.



*Different kinds of birds live in many different **habitats**.*

Like **mammals**, birds are **warm-blooded**. Many birds **migrate** when the seasons change. In late fall, they fly in groups called **flocks** from colder places to warmer places. Then, in the spring after winter is over, they **migrate** back to the place where they were in the fall. Birds are the only animal besides some insects and bats that are able to fly like an airplane.

All birds have wings, but not all birds are able to fly. Penguins are probably the best known birds that do not fly. Penguins make up for not flying by being great swimmers. Ostriches, the largest of all birds, can't fly either, but they sure can run very fast! They also lay the world's largest eggs.

Besides wings, all birds have two legs and a mouth without teeth, called a beak. A key **characteristic** of birds is that they all have **feathers**. **Feathers** help these **warm-blooded** animals fly and help them maintain a **constant** body **temperature**. Bird **feathers** come in all kinds of colors and sizes. A bird's **feathers** are also called **plumage**. Peacocks have the fanciest **plumage** of all. They like to show off by fanning their long, colorful **feathers**.



*All birds have wings and **feathers**, but not all birds can fly.*

Most birds are nesting animals. Many birds make their own nest, often high up in the trees or in thick bushes. They use bits and pieces of nature, such as twigs and parts of plants, to create their nest. Other birds build their nests in tree holes. Some bird nests are made of mud.

Most birds lay eggs in their nests. Some lay a bunch of eggs and some lay only one or two. The nest needs to be in a safe place to protect the little eggs from the weather and other animals that might eat the eggs. Birds sit on their eggs to keep them warm and safe until the eggs hatch. Once they hatch, the baby birds need to eat. Mother and father birds fly out from the nest and find food for their babies. They fly back to the nest and place the food in each baby's beak.

Many birds are **omnivores**. Some birds eat seeds and berries. Some eat insects. Some, like the great blue heron, eat fish. Hawks eat little **mammals**. Other birds, like tiny hummingbirds, eat **nectar** from flowers. All birds drink water.

Birds are also known for their songs. Their songs are used to **attract** mates and to claim a place as their own. Sometimes it seems as if they sing because they want to. Maybe they sing just to remind us how beautiful and interesting the animal **kingdom** is!



Different kinds of birds eat different types of food.

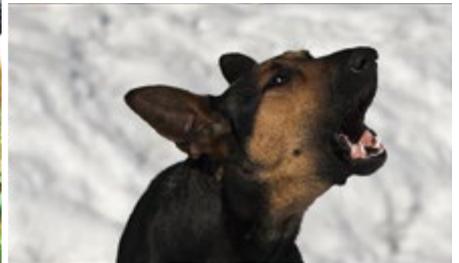
Chapter

13 Mammals



Aha! Now we get to an animal group that I really know a lot about! I, Rattenborough, am part of this group of animals myself! I'm talking about **mammals**. Do you remember the **characteristics** that scientists use to identify **mammals**? Hair is one major **characteristic**. Live birth and giving milk to their young are others. They breathe **oxygen** from the air using their lungs. **Mammals** are also **warm-blooded**, and they are **vertebrates**.

Most scientists agree that **mammals** are the smartest creatures in the animal **kingdom**. All animals **communicate** in some way. Dogs **communicate** by barking and wagging their tails. Cows moo. Some cats meow, others roar. But **mammals** seem to use the most complex forms of **communication**. Humans use **language** to talk. They also **communicate** with their faces and hands. Some apes and chimpanzees have even been taught to use sign **language** to **communicate**.



Mammals communicate in different ways.

There are two other **mammals** that also seem to use an advanced form of **communication**. In fact, you may not even realize that these animals are **mammals** because they live in the ocean. Dolphins and whales are classified as **aquatic mammals**. Dolphins and whales, like other **mammals**, do not have **gills** like fish, so they cannot breathe underwater. Instead, they use blowholes at the top of their heads to blow out water and suck in air. Dolphins and whales rise to the surface of the water and poke their heads into the air to breathe.

Whales and dolphins **communicate** by sending out sound waves through the water. These waves, called **sonar**, help them find their way through the ocean. The sound waves bounce off objects and echo back to the whale or dolphin. The whale or dolphin can tell the size, shape, and speed of objects, and the distance away from them based on the time it takes the echo sound to travel back to them. They also use their sounds to “talk” to each other!



*You might think dolphins would be classified as fish, but they are classified as **mammals**.*

Dolphins and whales also give birth to live young. No eggs needed! They even feed milk to their young. If you study them closely, you will learn that dolphins and whales have hair, not **scales**. They also have very thick skin. Their skin protects them from the cold and animals that are their **predators**.

You might also be surprised to learn that bats are also **mammals**. Bats fly like birds, but they do not have the other **characteristics** that birds have. Bats have fur, not **feathers**. Their arms have wing-like flaps of skin, but they are not like bird wings. Bats also give birth to live young and they produce milk. So, scientists **classify** bats as **mammals**.



Bats are also mammals.

Here's an interesting fact: not all **mammals** give birth to live young. The duck-billed platypus and spiny anteater both lay eggs like birds and some **reptiles**, but have all the other **characteristics** of **mammals**. Good luck finding one. They are very rare!

Mammals have their fair share of odd members, like the duck-billed platypus. But the basic **characteristics**—hair, backbone, milk, **warm-blooded**—are always present in **mammals** no matter what.



A duck-billed platypus

Chapter

14 Jane Goodall



Jane Goodall is a very famous **primatologist**. She is a scientist who studies a group of **mammals** called **primates**. **Primates** are a group of **mammals** that includes humans, monkeys, gorillas, and chimpanzees. Jane Goodall has spent her whole life studying chimpanzees. She has focused on studying animal **behavior** in chimpanzees. Her discoveries have made her one of the best known scientists in the world.

Goodall was born in 1934 in London, England. When she was a little girl, her father gave her a toy chimpanzee. It looked so real that people who visited her house were afraid of it, but she loved it!

When Goodall was 23, she went to Africa. She began studying chimpanzees with a well-known scientist named Louis Leakey. After a year of working in Africa, Goodall went back to England and studied at the University of Cambridge. Can you guess what her favorite subject was? Chimpanzees!

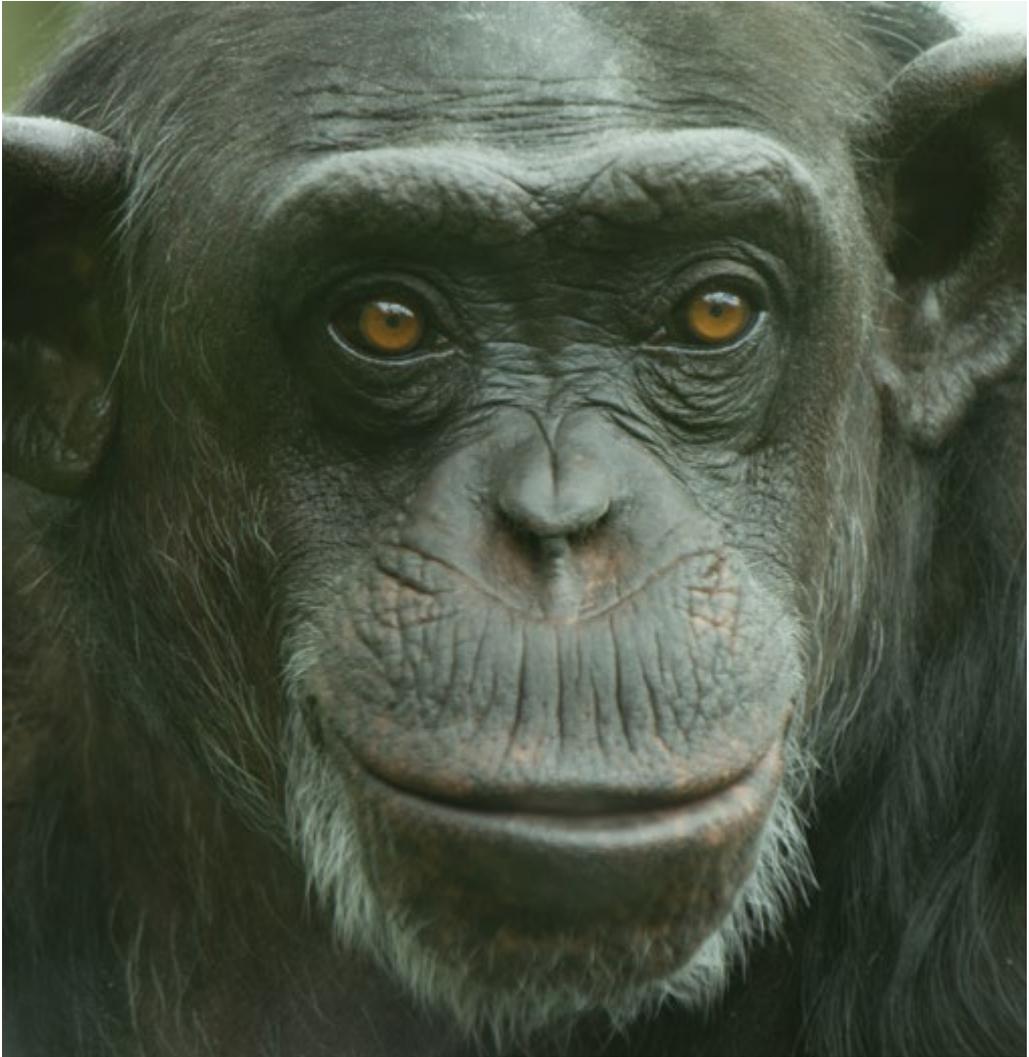


Jane Goodall

After finishing **school**, Goodall returned to Africa and spent the next 45 years studying chimpanzees in the wild. Her discoveries during those years completely changed the way people think about **primates**.

Before Goodall's work, people thought chimpanzees were **herbivores**. She discovered that they eat meat, too. More importantly, Goodall discovered that chimps were quite **intelligent**. She **observed** them making and using tools! Before that, people thought humans were the only animals that made and used tools.

When you hear the word *tool*, you may think of a hammer, saw, or shovel. Chimps don't use those kinds of tools. A tool is something used to help make a job easier. Tools can be very simple. A rock becomes a tool if you pick it up and use it to crack open a walnut.



*Goodall studies chimpanzees, a type of **mammal** belonging to the **primate** group.*

Goodall **observed** chimps using blades of grass and sticks as tools. Chimps like to eat termites, a type of insect that is like an ant. Termites live in holes underground. To catch these tasty insects, Goodall **observed** a chimp sticking a blade of grass into a termite hole. The termites crawled onto the grass. Then, the chimp took the grass out of the hole and ate all the termites. Before Goodall wrote about this **behavior**, people did not realize how clever chimps and other **primates** are.

Goodall gave names to all the chimps in the group she was studying. She got to know them pretty well. Over time, she learned that chimps were smart animals. She learned that chimps express many of the same feelings as people. They can feel happy, sad, and mad. Chimps can also be mean. Goodall saw them attack and eat small monkeys, not out of hunger, but because they didn't want them around.



A chimpanzee uses a plant stem as a tool.

Goodall is more than a scientist. She is also an **activist**. An **activist** is someone who works hard to solve a problem and change something in the world. Goodall works as an animal rights **activist** to protect chimpanzees and their **habitats**. She tells others about human damage to **habitats**, such as hunting and pollution, and works to stop these problems. She loves working with young people and teaching them how to protect animals. She has written many books and has been the subject of books and movies. She has won many awards for her work in protecting chimpanzees. As of 2015, she was 81 years old and still working to spread the message that animals need to be protected!



*Jane Goodall continues to work as an animal rights **activist**.*

Chapter 15 Scientists Who Classify Animals



Rattenborough, here once again! You have been learning about how scientists study the **characteristics** of living things. They **classify** all living things into one of five large groups called **kingdoms**. You have been learning a lot about how animals are sorted into more specific groups within the animal **kingdom**.

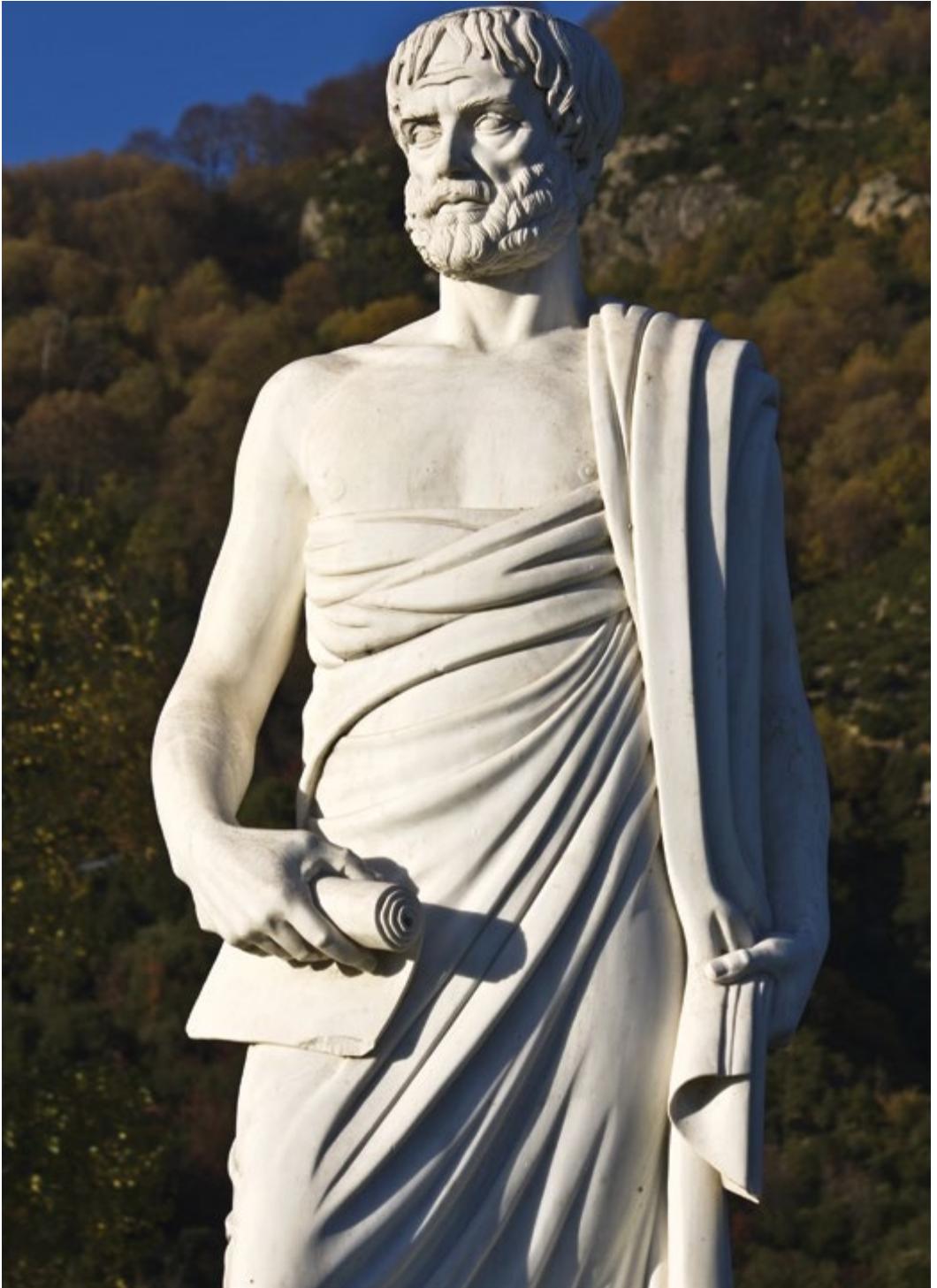
The scientists who study animals and their **characteristics** are called **zoologists**. **Zoologists observe** animals to see the ways they are the same and the ways they are different. For example, **zoologists** discovered that some animals are **warm-blooded** and some are **cold-blooded**.

Zoologists also **classify** animals by whether or not they have a backbone. Animals with a backbone and a spinal cord are called **vertebrates**. Animals that do not have a backbone are called **invertebrates**. We learned that there are five groups of **vertebrates**—fish, birds, **amphibians**, **reptiles**, and **mammals**. The largest group of **vertebrates** is fish.

Zoologists also study other **characteristics** of animals. They study animal body parts and how they are alike or different. All animals need to breathe **oxygen**. But they may have different organs that help them breathe. Fish and young **amphibians** have **gills** that help them get **oxygen** out of the water. **Mammals**, **reptiles**, and adult **amphibians** get **oxygen** from the air using lungs.

Zoologists also study how different animal babies are born and cared for. Do you remember which group of animal mothers feed their babies milk from their own bodies?

Everything we have learned about animals was discovered by scientists. There have been many scientists who have been interested in animals since long, long ago. A Greek man named Aristotle first **classified** animals over 2,000 years ago. He wrote a book called *A History of Animals*. As scientists have discovered and learned more about animals, the **classification** system has changed. There is still much to learn about animals. After all, there are thousands of new animals yet to be discovered and **classified!**



A statue of Aristotle

Every single day, scientists learn new facts about animals. Scientists even find new animals they didn't know existed. There is no end to new knowledge if you study living things!

Today, there are about one million scientists around the world who are studying and **classifying** animals, even as you read this. Every one of them spends the day **observing**, experimenting, and finding new information. This adds to our knowledge about the world we live in.



Do you remember which group of animals feed their babies milk from their own bodies?

If you want to be a **zoologist** when you grow up, there is plenty to study. You never know when someone is going to learn something that changes the way we think about the world. Who knows? Maybe you will be the first to find a **feathered** fish or a flying snail. It may sound silly now, but a hundred years ago, nobody knew that whales **communicated** with each other. What will you discover?



*What kind of animals would you like to **observe** if you were a **zoologist**?*

Chapter 16 Vertebrate Animals Around the World



Read-Aloud

All My Best Friends Represent **Vertebrates!** Now that you've learned about each **vertebrate** group, you know about many **characteristics** that taxonomists use to **classify** these animals. Who wants to try naming the five groups of animals that make up **vertebrates** in the animal **kingdom**?

Why do scientists **classify** organisms? Because there are so many living things on Earth, it gives scientists a way of studying them by showing their relationships. And how do they **classify** them? They look for common, or shared, **characteristics**. What are some of these common **characteristics**? You've learned that some animals are **warm-blooded** and others are **cold-blooded**. Some are **vertebrates** and others are **invertebrates**. You've also learned that there are many other ways to

classify animals into smaller and smaller groups. The scientific classification system, taxonomy, uses these names—**kingdom**, phylum, class, order, family, genus, and species—to describe the groups from largest to smallest.

When they **classify** animals, taxonomists compare and contrast animal **habitats**, physical **characteristics**, skin coverings, feeding habits, and **reproduction**. Today we're going to look at seven different locations on planet Earth, one on each of the continents of the world. We can use our new skills to practice **classifying** a few of the animals that live in each place.

First stop, the American desert! Here are some examples of animals you may find in this North American desert: the western diamondback rattlesnake, the Gila [hee-luh] woodpecker, the desert bighorn sheep in the background, the roadrunner, the banded Gila monster, the bobcat, and the turkey vulture. Just by looking at these animals, are you able to **classify** them? The bobcat and the sheep are both covered in fur, so we know they are **mammals**. What about the Gila monster? It's a **reptile**, one of only two **venomous** lizards in America. What kind of animal is this rattlesnake, which is also covered in **scales**? Yes, it is a **reptile**—it is



Sonoran Desert

venomous as well, and it is one of the few **reptiles** that gives birth to live young.

Great job! Let's move on to the Amazon Rainforest in South America. Native to the rainforest are the spotted jaguar, the green anaconda, the three-toed sloth, the red-bellied piranha, the blue-and-yellow macaw, the pink-toed tarantula, and the caiman, which looks like a small crocodile. The anaconda and the caiman are both covered in **scales**. The bird should be an easy one to spot—the only one with wings and **feathers** is the macaw. And the piranha should be familiar to all of you—these are Paolo's fish relatives. The jaguar and sloth

both belong to the same group. Who can name that group? Great—they're **mammals**; we can tell because they are covered in fur. As you have learned, **mammals** give birth to live babies. Does this dark, hairy spider belong to one of the **vertebrate** groups we've studied? No, the pink-toed tarantula is an **invertebrate**. It's **cold-blooded**, has an exoskeleton, and is a member of the arachnid group.

South American Rainforest





Alpine Mountains

Let's look at some of the animals that make their homes high in the Alpine mountains of Europe. What do you see in the background, there on the rocks? The rock ptarmigan [tahr-mi-guhn] lives in the Alps. So does the black Alpine salamander, the marmot, the golden eagle, the Apollo butterfly, and the pine marten. Which one do you think is not a member of any of the **vertebrate** groups we've studied? Yes, the butterfly is an **invertebrate**, and is classified in the largest group of animals on Earth: insects! The black Alpine salamander shares **characteristics** with both a lizard and a frog. Think about how you would **classify** it. It's a moist-skinned **amphibian**, but an unusual one that lives only

on land and gives birth to fully developed live young. What two-legged, **feathered** animals do you see? Yes, the birds pictured are the ptarmigan and the golden eagle. And **mammals**—are there any fur-covered creatures in the Alps? Yes, the marmot and the pine marten.

The Ganges [gan-jeez] **Delta** of India, on the continent of Asia, is home to swamps, forests, and creeks. The animals that live there include the black-crowned night heron, the wild boar, the Olive Ridley turtle, the Ganges River dolphin, the Indian python, the blue-eared kingfisher, the mugger crocodile, and the chital. Can you spot the **cold-blooded reptiles** here?

*The Ganges **Delta***



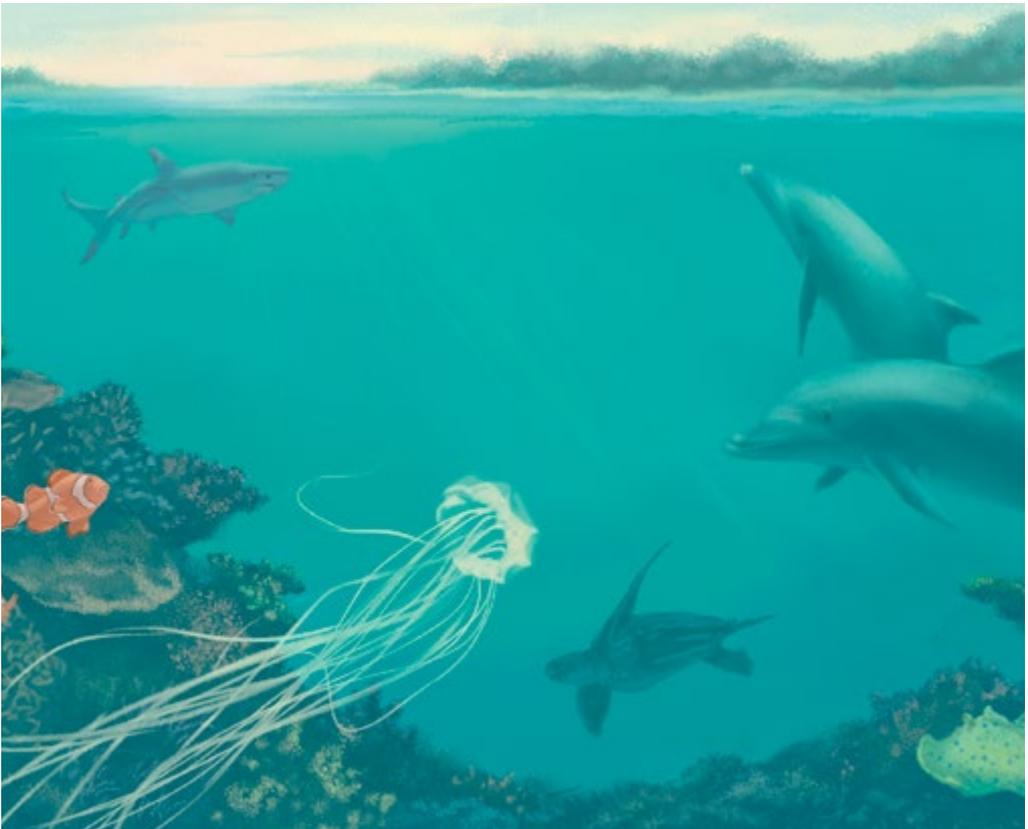
You bet—the crocodile, the turtle, and the python are all representatives of the **reptile** group. Which ones are **warm-blooded mammals**? Yes, the boar, or wild pig, and the chital, a common deer of the area. The polluted waters of the Ganges River have ruined the **habitat** for a number of animals, and this river dolphin is endangered because of the river's pollution. Only one of four river dolphin species in the world, it is a **mammal** just like its ocean-loving relatives. The Ganges river dolphin is sometimes called the blind dolphin; each of its eyes lacks a lens to give it clear vision, but it still uses its eyes to help it find direction. And, of course, our **feathered** friends of the sky—the kingfisher and the heron—are both birds.



African savanna

I bet you've seen pictures of the many large game animals that make their homes in the savannas of Africa. They include the giraffe, the elephant, the hyena, the wildebeest, the lion, the zebra, and the impala. All of these animals belong to the same group of **vertebrate** animals. What are they? Yes, **mammals**! Birds, like the hornbill and the quelea [kwee-lee-uh], live there as well. And **venomous reptiles**, snakes like the gaboon and the black mamba, are deadly to their prey in the savannas.

The Great Barrier Reef of Australia is home to many different sea animals. Animals here include the bottlenose dolphin, the anemonefish, the blue spotted stingray, the box jellyfish, the black-tipped reef shark, and the leatherback sea turtle. Is the jellyfish a fish? Who remembers? No, in spite of its name, the jellyfish is an **invertebrate** and has no **gills**. Be sure to notice the jellyfish's many long **tentacles**. So, do you think the anemonefish is a fish or not? Yes, it is indeed a fish, also called the clown fish because of its colorful markings,



Coral reef

and it lives among the tentacles of another **invertebrate**, the sea anemone. The sea turtle belongs to the **reptile** group, and you probably remember that the dolphin is a milk-producing **mammal** that breathes with its lungs. How about the shark? Yes, it is a fish too. It breathes through **gills**, and unlike the dolphin, does not provide milk for its young. And the stingray? A fish, too—a relative of the shark.

Finally, let's look at Antarctica, the southernmost continent and one of the coldest places on Earth. Emperor penguins live in its icy waters, along with blue whales and humpback whales. Leopard seals, skua, and snow petrels spend half the year in darkness in this frozen coastal region. Only two **vertebrate** animal groups are found on the land in Antarctica. What are they? That's right, **mammals** and birds. You learned that these two groups also share another common **characteristic** as well. **Mammals** and birds are both **warm-blooded**. The energy in the food they eat is used to warm their bodies and keep them from freezing.

These Antarctic animals **survive** in harsh frozen conditions, and they are largely dependent on krill, tiny shrimp-like crustaceans with exoskeletons that live in the waters beneath the ice packs. They are the primary, or main, source of food for the **predators** of Antarctica.



Antarctic ice shelf

As you can imagine, living in the extreme cold of Antarctica presents a major challenge to **cold-blooded** animals. A few fish have **adapted** in an interesting way to **survive** in the cold waters surrounding Antarctica. The icefish has a special chemical in its body that acts like an **antifreeze** and keeps it from freezing!

A few **invertebrates** have found other interesting ways to **survive** the cold **temperatures** of Antarctica. Some mites **survive** by living in the fur of **mammals** or in the **feathers** of birds, close to the warmth of their **warm-blooded hosts**. Now you've seen a sample of the animals that live on each of the seven continents.

There are so many interesting facts about Earth's animals! Before I go, let's each share one interesting fact that you have learned about **vertebrate** animals. Think for a moment about the interesting fact that you wish to share. Turn to your neighbor and share your **vertebrate** fact.

It's been so much fun for me to be with you again. I'm so proud of all that you've learned about the animal **kingdom** over the past few days. I'll look forward to seeing you again soon. In the meantime, I encourage you to keep your eyes open. As you see an animal or read about an animal, think about how you would **classify** it. Next time we're together, perhaps you can tell me about your discoveries. Until then, goodbye!

Chapter

17

Deep-Sea Fish



Oceans are very, very deep bodies of water. However, people cannot go very deep into the ocean. Even with all the right **scuba gear**, including a tank of **oxygen**, there is a limit to how deep you can go underwater. The deeper you go, the higher the **water pressure** gets because of the **weight** of all the water around you.

You can notice **water pressure** if you swim to the bottom of a pool. If you rest on the floor of the pool for a few seconds, you will start to feel the pressure in your eardrums.

The deeper you go in the ocean, the higher the **water pressure** gets. If you dive a few hundred feet down, you will start to feel like someone is squeezing your head and chest. At 1,000 feet, you might pass out. Go deeper than that and you might be crushed by all the **water pressure!**



*Scuba divers feel more **water pressure** the deeper they dive in the ocean.*

How deep are oceans? That depends on where you are in the world. Some parts are a few yards deep, while others are around 10,000 feet. The deepest part of the ocean is more than six miles deep! Down there, the **water pressure** is very strong. It is so strong, it would feel as if someone dropped 3,300 elephants on you at the same time. In other words, you would be crushed to the size of an ant, maybe smaller.

No creature that lives on land can **survive** the **water pressure** of the deep ocean. Most fish can't either. However, there is life down there—lots of it! How do we know? Scientists have created special **submarines** called **submersibles** that can go deep in the ocean.

Some **submersibles** can carry a person or two. Others are controlled remotely from the surface. With a light and a camera, a **submersible** can be used to explore the deepest parts of an ocean. Scientists developed the first **submersible** about 50 years ago and have been discovering some pretty crazy-looking fish ever since!



A submersible exploring deep underwater

Fish that live deep down in the ocean are unlike any other living things. They have incredibly thick bodies because they need to withstand all that **water pressure**.

No sunlight reaches the bottom of the ocean, so it's completely dark down there. Many deep-sea fish glow! Lantern fish are the most common deep-sea fish. In fact, they are among the most common of all **vertebrates**. There are billions of them down there!



Lantern fish

The anglerfish is easily one of the strangest creatures on Earth. Have you ever seen anything so ugly? Anglerfish are known for their huge mouths and scary teeth. What is more amazing is that they have a built-in flashlight on their head used to **communicate** with other fish.

Humans have only managed to explore a tiny part of the deep seas. If you are interested in discovering new creatures, then you might want to think about becoming a deep-sea **marine biologist**, which is a scientist who explores ocean life.



An anglerfish

Chapter

18 The Komodo Dragon



You have probably heard or read at least one fairy tale with a dragon as a character. In these stories, dragons fly around breathing fire and frightening innocent people, until a brave knight comes along and kills the dragon. Well, you won't find fire-breathing dragons in a book about animal classification. There is no proof that these fairy tale dragons ever **existed**.

There is, however, one real dragon that does **exist**: the **Komodo dragon**. No, it does not breathe fire and it does not fly. It's just a big **reptile**. They can be pretty mean. It's rare, but they have attacked and even killed humans. So, be careful if you are ever traveling through Indonesia.



*Fire-breathing dragons are found only in fairy tales and movies.
The **Komodo dragon** is a large **reptile** found in Indonesia.*

These dragons are named after the **island** of Komodo, which is part of Indonesia. They can be found on four or five other Indonesian **islands**, as well, but overall they are pretty rare.

They prefer hot, dry places. They dig **burrows** two to three feet deep in the ground. Like most **reptiles**, they spend most of their time sleeping or simply relaxing.

A **Komodo dragon** can be as big, or bigger, than a crocodile. They weigh up to 150 pounds and can be over ten feet long from tail to head. The largest one on record weighed 370 pounds, or as much as about six third graders.



A Komodo dragon can be as large, or larger, than a crocodile.

Like many **reptiles**, they can't hear or see very well. Instead, they have a strong sense of smell. They do not use their **nostrils** to smell—they use their **tongue**! They can smell food several miles away if the wind is blowing in the right direction!

Speaking of food, Komodo dragons are **carnivores**, so they eat mainly meat. For the most part, they eat dead animals. But if there are no dead animals around, they hunt for food.



Komodo dragons use their tongues to smell!

They have sharp claws and teeth and, when needed, can move pretty fast. They are the only lizards known to attack, kill, and eat animals that are bigger than they are. They might hunt a goat, deer, and even water buffalo!

Young **Komodo dragons** eat insects, smaller **mammals**, and birds. How? They climb trees and catch them. They will eat anything they can get their claws on, as long as it's meaty.

You definitely don't want a **Komodo dragon** to bite you or even lick you! Its **saliva** is loaded with dangerous germs that can make people very sick. The best way to **observe** a **Komodo dragon** is at a zoo, unless you are very brave or very foolish!



*The safest way to **observe** a **Komodo dragon** is at a zoo.*

Glossary for *Rattenborough's Guide to Animals*



A

absorb—to take in or soak up (**absorbs**)

activist—a person who strongly believes in changing something and works hard to try to make change happen

adapt—to change

adaptive—easily changes to live in different environments

adult—grown-up

amphibian—an animal that can live on land and in water (**amphibians**)

animal—a living thing that is not a plant (**animals**)

aquatic—living, growing, or found in water

Aristotle—a Greek man who lived long ago and was one of the first people to write about classifying animals

attract—to draw or pull toward a person, place, or thing

B

behavior—how a person or animal acts

burrow—a hole in the ground dug by an animal for safety or for living (**burrows**)

C

calcified—hardened, especially by deposits of the mineral known as calcium salts

carnivore—an animal that mainly eats meat (**carnivores**)

characteristic—something that makes a person, thing, or group different (**characteristics**)

classify—to put things into groups based on similarities or type classification to (**classification, classifying, classified**)

climate—the usual weather patterns in a particular area

cold-blooded—only able to control body temperature by using surroundings; Reptiles are cold-blooded

communicate—to share information with others through language, writing, or gestures (**communication**)

constant—unchanging

creature—an animal (**creatures**)

crocodile—a large reptile that lives near water and has thick, scaly skin and very strong jaws (**crocodiles**)

D

damage—harm

deadliest—most likely to cause death

delta—a triangular area found where a stream or river flows into a bigger body of water and deposits mud and sand in a fan-shaped area (**deltas**)

duck-billed platypus—a mammal that has a bill like a duck and lays eggs

E

echo—a sound that is repeated when sound waves bounce off the surface of an object

exist—to be alive (**existed**)

extinction—the state of no longer existing, usually referring to plants or animals that have died out completely

F

feather—one of many light, soft parts that covers a bird's skin (**feathers**)

fin—a bony **spine** covered with skin that sticks out from a fish's body and helps it swim (**fins**)

flexible—bendable

flock—a group of birds (**flocks**)

fragile—easily harmed

G

gill—one of a pair of organs fish use to breathe underwater (**gills**)

gnaw—to bite or chew something over and over

H

habitat—a place where plants and/or animals live and grow (**habitats**)

herbivore—an animal that only eats plants (**herbivores**)

hibernate—to spend a season resting or sleeping (**hibernating**)

hover—to float in the air close to something

I

inject—to force in fluid, like poison, usually by piercing the skin (**injects**)

intelligent—smart

invertebrate—an animal without a backbone (**invertebrates**)

island—an area of land completely surrounded by water (**islands**)

K

kingdom—a major group into which all living things are classified (**kingdoms**)

knowledge—information

Komodo dragon—the largest, living lizard (**Komodo dragons**)

L

language—words used to communicate

life cycle—the stages through which a living thing goes from birth until death

M

mammal—an animal that gives birth, has hair, feeds milk from its own body to its young, and is warm-blooded (**mammals**)

marine biologist—a scientist who studies underwater sea life

migrate—to travel back and forth from one place to another

molt—to shed skin (**molting, molted**)

moss—a very small green or yellow plant that grows on moist rocks, tree bark, or wet ground

N

nature—everything in the outside world that is not made by people

nectar—sweet liquid that comes from flowers

nocturnal—active during the night

nostril—one of the openings of the nose (**nostrils**)

O

observe—to watch closely and carefully (**observing**)

ocean—an enormous body of saltwater

omnivore—an animal that eats both plants and meat (**omnivores**)

orchestra—a group of musicians who play instruments together

organ—an important body part that performs a specific function (**organs**)

oxygen—a colorless gas that animals must breathe to stay alive

P

pelt—the skin of a dead animal with hair or fur on it (**pelts**)

penguin—a bird that cannot fly, has black and white feathers, and uses its wings for swimming (**penguins**)

plumage—birds' feathers

poisonous—full of poison or venom

pollution—making land, water, or air dirty, thus causing damage

predator—an animal that hunts other animals for food
(**predators**)

primate—a mammal such as a monkey, ape, or human
(**primates**)

primatologist—a scientist who studies primates

R

reproduction—the process that lets a plant or animal produce offspring, or young, of their own kind

reptile—a cold-blooded animal with tough, scaly skin that uses its surroundings to control its body temperature (**reptiles**)

rodent—a small mammal with large, sharp front teeth, such as a squirrel, rat, or mouse (**rodents**)

S

saliva—spit

savanna—a large flat area of land with a lot of grass and few trees commonly found in Africa and South America

scale—a thin, small disc on the outside of the bodies of some animals, such as fish and reptiles (**scales**)

school—a large group of fish or other aquatic animals that swim together (**schools**)

scientist—an expert in science who has knowledge of the natural world based on facts learned through observation and experiments (**scientists**)

scuba gear—clothes and equipment used for diving and breathing underwater

secrete—to seep out from the skin (**secretes**)

sensitive—able to feel something very quickly or intensely

sign language—a way to communicate using hands to make signs that stand for letters and words

sonar—a way to find things underwater using sound waves

spinal cord—a large group of nerves that connects to the brain and sends messages to other nerves in the body

spine—backbone

startle—to surprise (**startled**)

submarine—a type of ship that carries people deep underwater for a long time (**submarines**)

submersible—a type of ship used to travel deep underwater for research that usually operates without people inside of it (**submersibles**)

suction cup—a round, shallow cup that can stick to a surface (**suction cups**)

survive—to continue to live (**survives**)

T

tadpole—the early form of frogs and toads that has gills and a tail, but no legs (**tadpoles**)

temperature—the measurement of how hot or cold something is (**temperatures**)

territorial—keeping animals or people from coming into an area already claimed

tongue—the part of the mouth used for tasting, licking, and swallowing

V

venom—poison produced by an animal used to harm or kill another animal

venomous—having or producing poisonous fluid

vertebrate—an animal with a backbone (**vertebrates**)

W

warm-blooded—having a constant body temperature; Mammals are warm-blooded.

water moccasin—a type of poisonous snake found in the southern United States (**water moccasins**)

water pressure—the weight or force of water as it presses against something or someone

weather—what it is like outside

weight—how heavy something is

wetland—an area of land covered with shallow water, such as a swamp (**wetlands**)

Z

zoologist—a scientist who studies animals and their characteristics (**zoologists**)

General Manager K-8 Humanities and SVP, Product

Alexandra Clarke

Chief Academic Officer, Elementary Humanities

Susan Lambert

Content and Editorial

Elizabeth Wade, PhD, Director,
Elementary Language Arts Content

Patricia Erno, Associate Director,
Elementary ELA Instruction

Baria Jennings, EdD, Senior Content Developer

Maria Martinez, Associate Director, Spanish
Language Arts

Christina Cox, Managing Editor

Product and Project Management

Ayala Falk, Director, Business and Product Strategy,
K-8 Language Arts

Amber McWilliams, Senior Product Manager

Elisabeth Hartman, Associate Product Manager

Catherine Alexander, Senior Project Manager,
Spanish Language Arts

LaShon Ormond, SVP, Strategic Initiatives

Leslie Johnson, Associate Director, K-8 Language Arts

Thea Aguiar, Director of Strategic Projects,
K-5 Language Arts

Zara Chaudhury, Project Manager, K-8 Language Arts

Design and Production

Tory Novikova, Product Design Director

Erin O'Donnell, Product Design Manager

Other Contributors

Bill Cheng, Ken Harney, Molly Hensley, David Herubin, Sara Hunt, Kristen Kirchner, James Mendez-Hodes, Christopher Miller, Diana Projansky, Todd Rawson, Jennifer Skelley, Julia Sverchuk, Elizabeth Thiers, Amanda Tolentino, Paige Womack

Texas Contributors

Content and Editorial

Sarah Cloos

Laia Cortes

Jayana Desai

Angela Donnelly

Claire Dorfman

Ana Mercedes Falcón

Rebecca Figueroa

Nick García

Sandra de Gennaro

Patricia Infanzón-
Rodríguez

Seamus Kirst

Michelle Koral

Sean McBride

Jacqueline Ovalle

Sofia Pereson

Lilia Perez

Sheri Pineault

Megan Reasor

Marisol Rodriguez

Jessica Roodvoets

Lyna Ward

Product and Project Management

Stephanie Koleda

Tamara Morris

Art, Design, and Production

Nanyamka Anderson

Raghav Arumugan

Dani Aviles

Olioli Buika

Sherry Choi

Stuart Dalgo

Edel Ferri

Pedro Ferreira

Nicole Galuszka

Parker-Nia Gordon

Isabel Hetrick

Ian Horst

Ashna Kapadia

Jagriti Khirwar

Julie Kim

Lisa McGarry

Emily Mendoza

Marguerite Oerlemans

Lucas De Oliveira

Tara Pajouhesh

Jackie Pierson

Dominique Ramsey

Darby Raymond-
Overstreet

Max Reinhardsen

Mia Saine

Nicole Stahl

Flore Thevoux

Jeanne Thornton

Amy Xu

Jules Zuckerberg



Amplify.
TEXAS

ELEMENTARY LITERACY PROGRAM
LECTOESCRITURA EN ESPAÑOL

Series Editor-in-Chief

E. D. Hirsch Jr.

President

Linda Bevilacqua

Editorial Staff

Mick Anderson
Robin Blackshire
Laura Drummond
Emma Earnst
Lucinda Ewing
Sara Hunt
Rosie McCormick
Cynthia Peng
Liz Pettit
Tonya Ronayne
Deborah Samley
Kate Stephenson
Elizabeth Wafler
James Walsh
Sarah Zelinke

Design and Graphics Staff

Kelsie Harman
Liz Loewenstein
Bridget Moriarty
Lauren Pack

Consulting Project Management Services

ScribeConcepts.com

Additional Consulting Services

Erin Kist
Carolyn Pinkerton
Scott Ritchie
Kelina Summers

Acknowledgments

These materials are the result of the work, advice, and encouragement of numerous individuals over many years. Some of those singled out here already know the depth of our gratitude; others may be surprised to find themselves thanked publicly for help they gave quietly and generously for the sake of the enterprise alone. To helpers named and unnamed we are deeply grateful.

Contributors to Earlier Versions of These Materials

Susan B. Albaugh, Kazuko Ashizawa, Kim Berrall, Ang Blanchette, Nancy Braier, Maggie Buchanan, Paula Coyner, Kathryn M. Cummings, Michelle De Groot, Michael Donegan, Diana Espinal, Mary E. Forbes, Michael L. Ford, Sue Fulton, Carolyn Gosse, Dorrit Green, Liza Greene, Ted Hirsch, Danielle Knecht, James K. Lee, Matt Leech, Diane Henry Leipzig, Robin Luecke, Martha G. Mack, Liana Mahoney, Isabel McLean, Steve Morrison, Juliane K. Munson, Elizabeth B. Rasmussen, Ellen Sadler, Rachael L. Shaw, Sivan B. Sherman, Diane Auger Smith, Laura Tortorelli, Khara Turnbull, Miriam E. Vidaver, Michelle L. Warner, Catherine S. Whittington, Jeannette A. Williams.

We would like to extend special recognition to Program Directors Matthew Davis and Souzanne Wright, who were instrumental in the early development of this program.

Schools

We are truly grateful to the teachers, students, and administrators of the following schools for their willingness to field-test these materials and for their invaluable advice: Capitol View Elementary, Challenge Foundation Academy (IN), Community Academy Public Charter School, Lake Lure Classical Academy, Lepanto Elementary School, New Holland Core Knowledge Academy, Paramount School of Excellence, Pioneer Challenge Foundation Academy, PS 26R (the Carteret School), PS 30X (Wilton School), PS 50X (Clara Barton School), PS 96Q, PS 102X (Joseph O. Loretan), PS 104Q (the Bays Water), PS 214K (Michael Friedsam), PS 223Q (Lyndon B. Johnson School), PS 308K (Clara Cardwell), PS 333Q (Goldie Maple Academy), Sequoyah Elementary School, South Shore Charter Public School, Spartanburg Charter School, Steed Elementary School, Thomas Jefferson Classical Academy, Three Oaks Elementary, West Manor Elementary.

And a special thanks to the Pilot Coordinators, Anita Henderson, Yasmin Lugo-Hernandez, and Susan Smith, whose suggestions and day-to-day support to teachers using these materials in their classrooms were critical.

CREDITS

Every effort has been taken to trace and acknowledge copyrights. The editors tender their apologies for any accidental infringement where copyright has proved untraceable. They would be pleased to insert the appropriate acknowledgment in any subsequent edition of this publication. Trademarks and trade names are shown in this publication for illustrative purposes only and are the property of their respective owners. The references to trademarks and trade names given herein do not affect their validity.

All photographs are used under license from Shutterstock, Inc. unless otherwise noted.

EXPERT REVIEWER

Christine L. May

WRITERS

Mike Ford, Core Knowledge Staff

ILLUSTRATORS AND IMAGE SOURCES

1 (Rattenborough): Alisa Haggard; 2 (Illustration): Alisa Haggard; 3 (Illustration): Alisa Haggard; 3 (Photo): Shutterstock; 5 (Illustrations): Alisa Haggard; 5 (Photos): Shutterstock; 7 (Illustrations): Alisa Haggard; 7 (Photos): Shutterstock; 9 (Different animals): Shutterstock; 11 (All living things): Shutterstock; 13 (Plants): Shutterstock; 15 (Animals): Shutterstock; 17 (Five kingdoms): Shutterstock; 19 (Insects): Shutterstock; 21 (Classify): Shutterstock; 23 (Vertebrates): Shutterstock; 27 (Living things): Shutterstock; 29 (Crocodile): Shutterstock; 33 (Crocodiles): Shutterstock; 35 (Fish): Shutterstock; 37 (Photo): Shutterstock; 37 (Illustration): Alisa Haggard; 39 (Photo): Shutterstock; 39 (Illustration): Alisa Haggard; 43 (Rainforest): Erika Baird; 43 (Blue fish): Alisa Haggard; 45 (Oceans and fish): Shutterstock; 47 (Piranha): Shutterstock; 49 (Fish diagram): Shutterstock; 51 (Fish scales): Shutterstock; 51 (Illustration): Alisa Haggard; 53 (Fish eggs, shark mother): Shutterstock; 54 (Three fish): Shutterstock; 61 (Life cycle): Barbara Gibson; 63 (Amphibian): Shutterstock; 63 (Life cycle): Barbara Gibson; 65 (Toad): Shutterstock; 67 (Green tree frog): Shutterstock; 69 (Suction cups): Shutterstock; 71 (Nocturnal): Shutterstock; 73 (Tree frog): Shutterstock; 75 (Sapphire blue frog): public domain; 76 (Poison dart frog): Cliff/Flickr via CC BY 2.0; 77 (Toxicity): public domain; 79 (Strawberry frog): public domain; 81 (Rainforest): Erika Baird; 81 (Snake): Alisa Haggard; 84 (Geckos, chameleon, iguana, Komodo dragon): Shutterstock; 86 (Alligator and crocodile): Shutterstock; 88 (Reptile scales): Shutterstock; 90 (Frog, snake eggs): Shutterstock; 93 (Reptiles): Shutterstock; 95 (Rattlesnake, Copperhead, Water Moccasin): Shutterstock; 97 (Snakeskin): Shutterstock; 99 (Different birds): Shutterstock; 101 (Wings and feathers): Shutterstock; 103 (Different food): Shutterstock; 105 (Mammals): Shutterstock; 107 (Dolphins): Shutterstock; 109 (Bats): Shutterstock; 111 (Duck-billed platypus): Shutterstock; 113 (Jane Goodall): Shutterstock; 115 (Chimpanzees): Shutterstock; 117 (Plant stem): Shutterstock; 119 (Activist): Shutterstock; 123 (Aristotle): Shutterstock; 125 (Milk) Shutterstock; 127 (Zoologist): Shutterstock; 130 (Sonoran Desert): Ashley Glover; 131 (South American Rainforest): Ashley Glover; 132 (Alpine Mountains): Ashley Glover; 134 (Ganges Delta): Ashley Glover; 135 (Savanna): Ashley Glover; 136 (Coral reef): Ashley Glover; 138 (Antarctic ice shelf): Ashley Glover; 141 (Scuba divers): Shutterstock; 143 (Submersible): Shutterstock; 145 (Lantern fish): public domain; 147 (Anglerfish): public domain; 149 (Dragons): Shutterstock; 151 (Komodo dragon): Shutterstock; 153 (Dragon tongue): Shutterstock; 155 (Zoo): Shutterstock

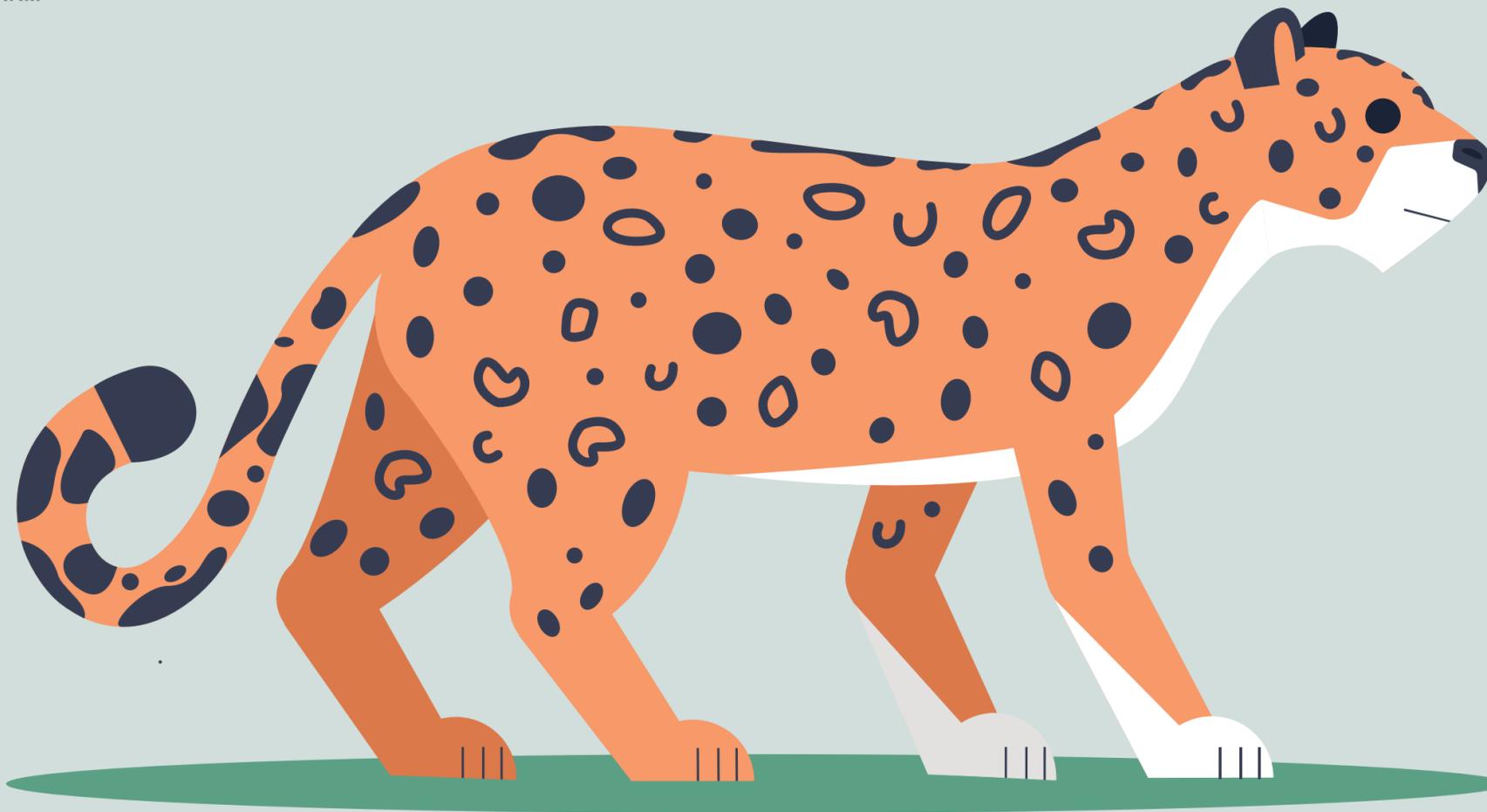


Grade 3 | Unit 2 | Reader
Rattenborough's Guide to Animals
770L

ISBN 9781643838533



9 781643 838533



Grade 3

Unit 2 | Digital Flip Book

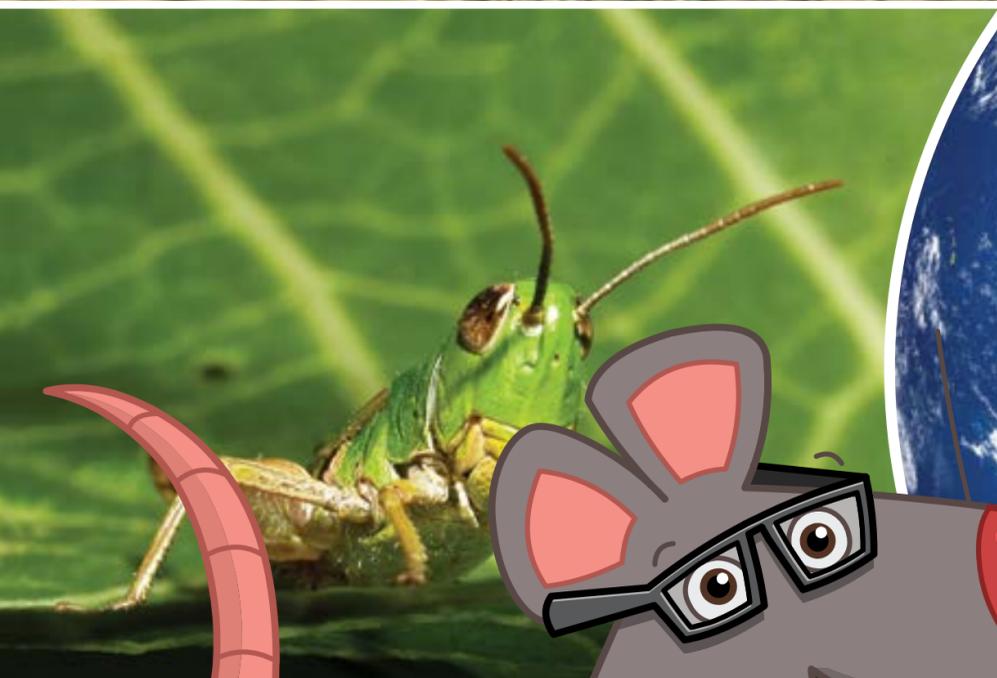
Scales, Feathers, and Fur: Animal Classification

Grade 3

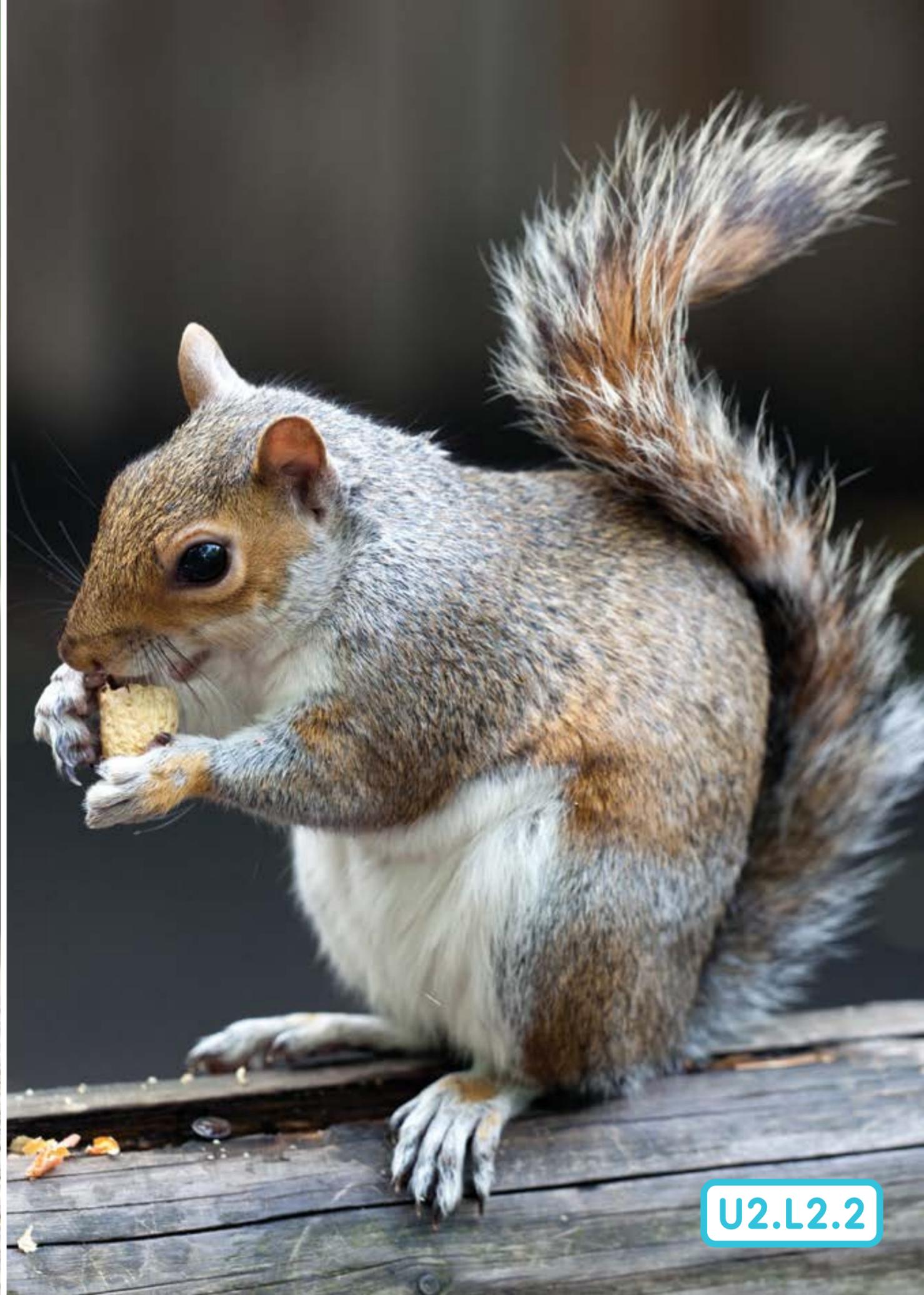
Unit 2

Scales, Feathers, and Fur: Animal Classification

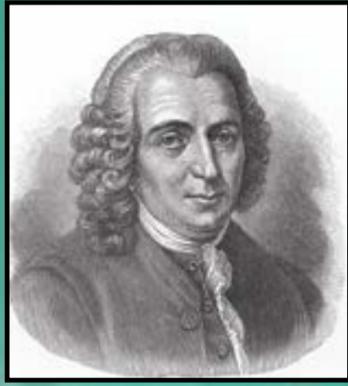
Digital Flip Book



U2.L2.1



U2.L2.2



U2.L2.3

LIVING THINGS

KINGDOM

KINGDOM

KINGDOM

ANIMAL KINGDOM

PLANT KINGDOM



INVERTEBRATES

VERTEBRATES





KINGDOM

Phylum

Class

Class

Order

Order

Order

Order

Family

Family

Family

Family

Family

Family

Family

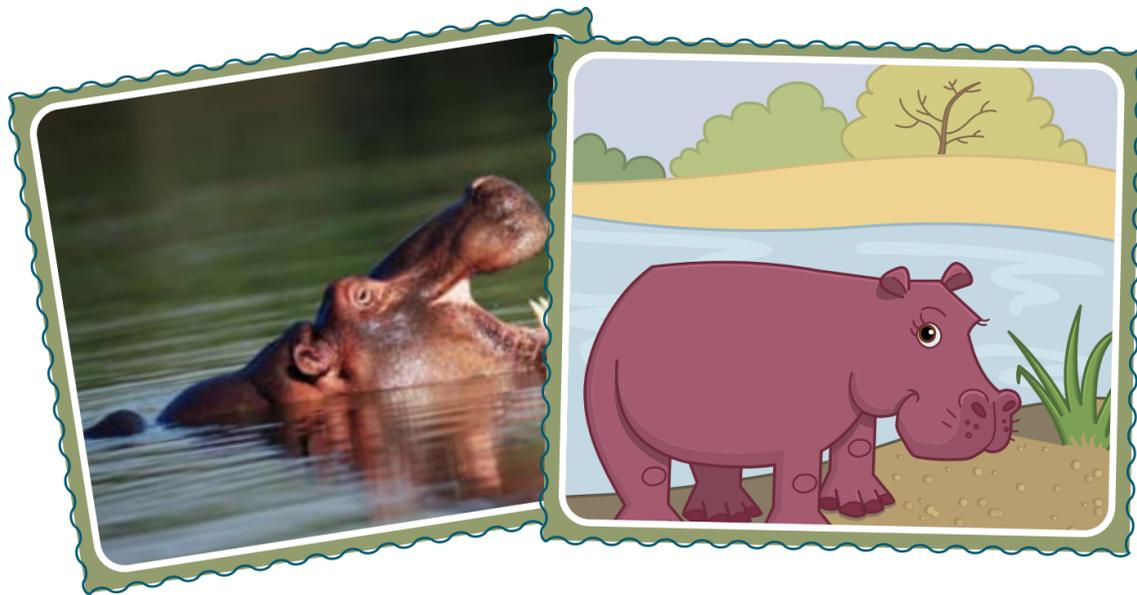
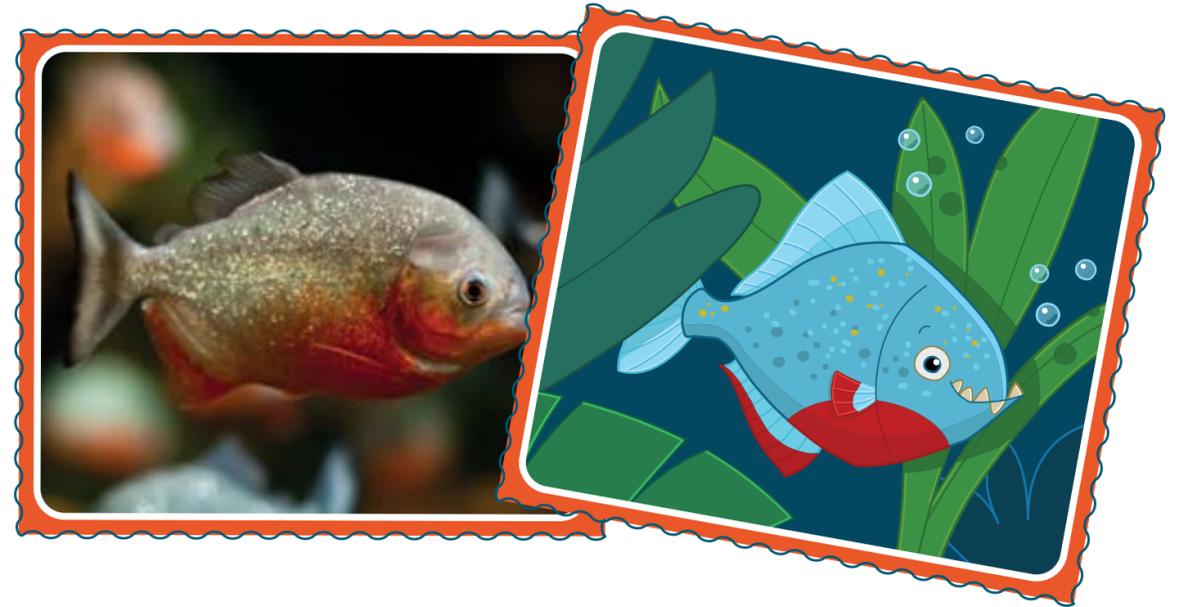
Family

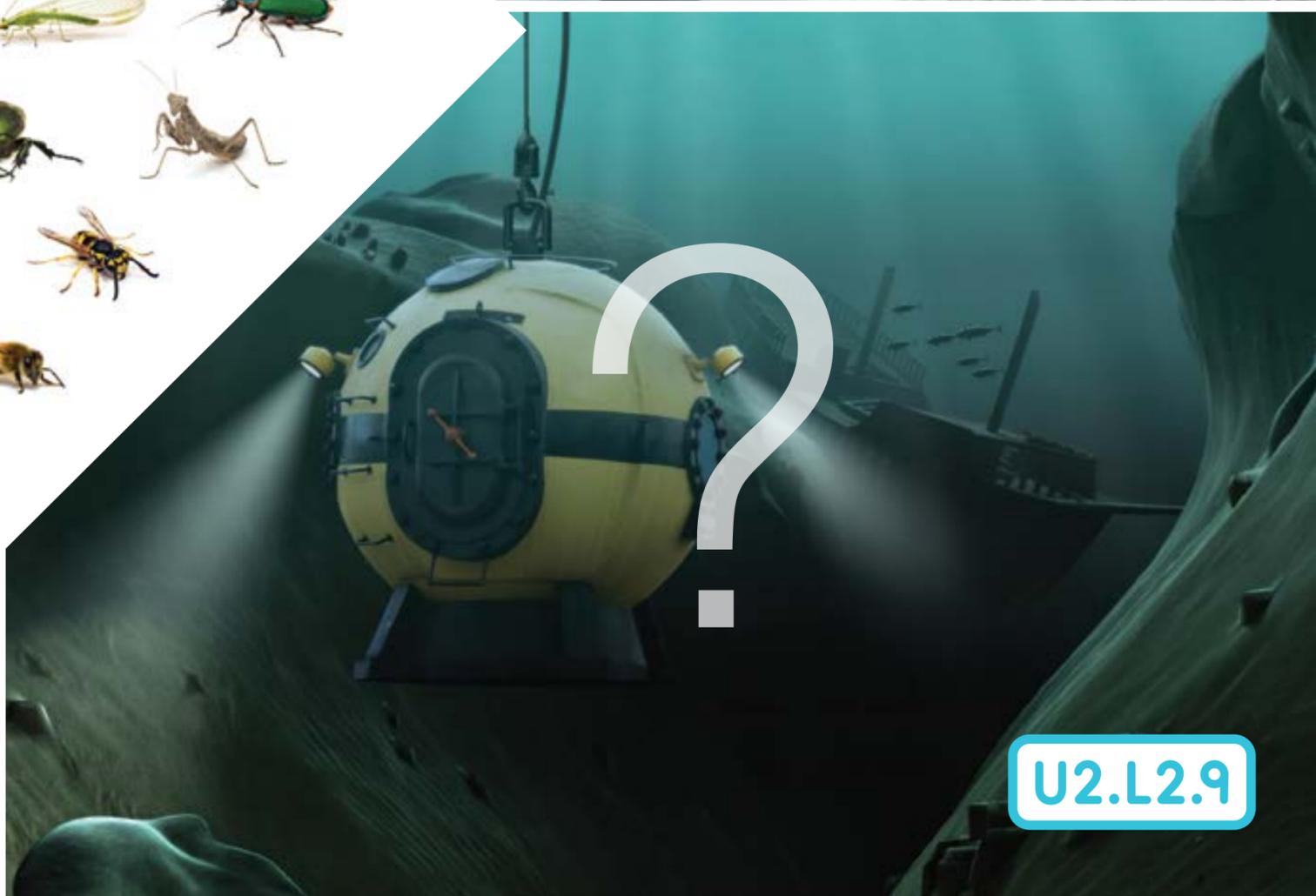
Genus

Species

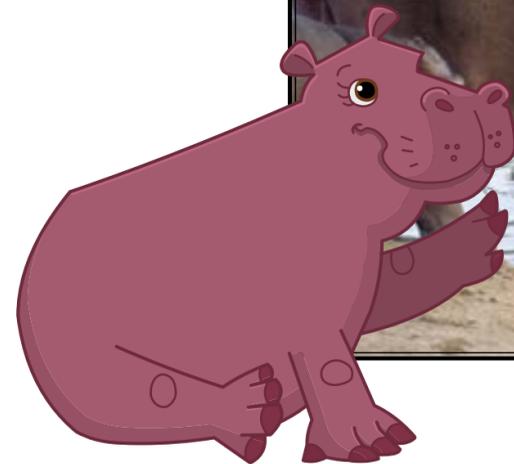
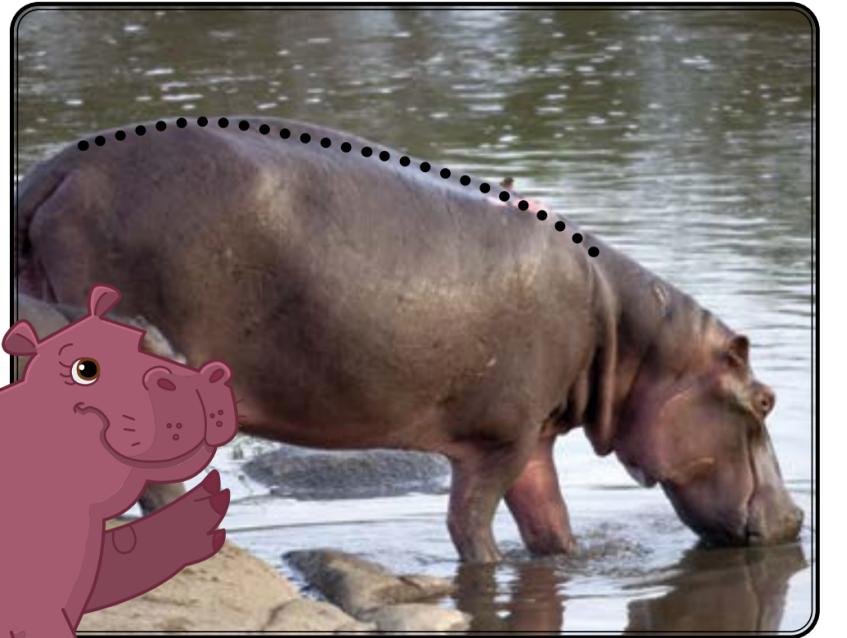
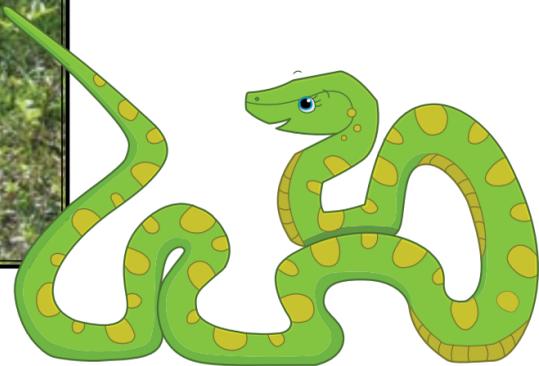
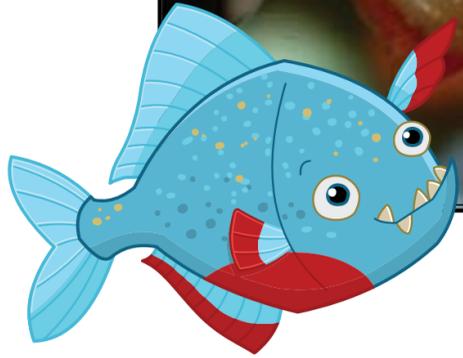
95.4%
INVERTEBRATES

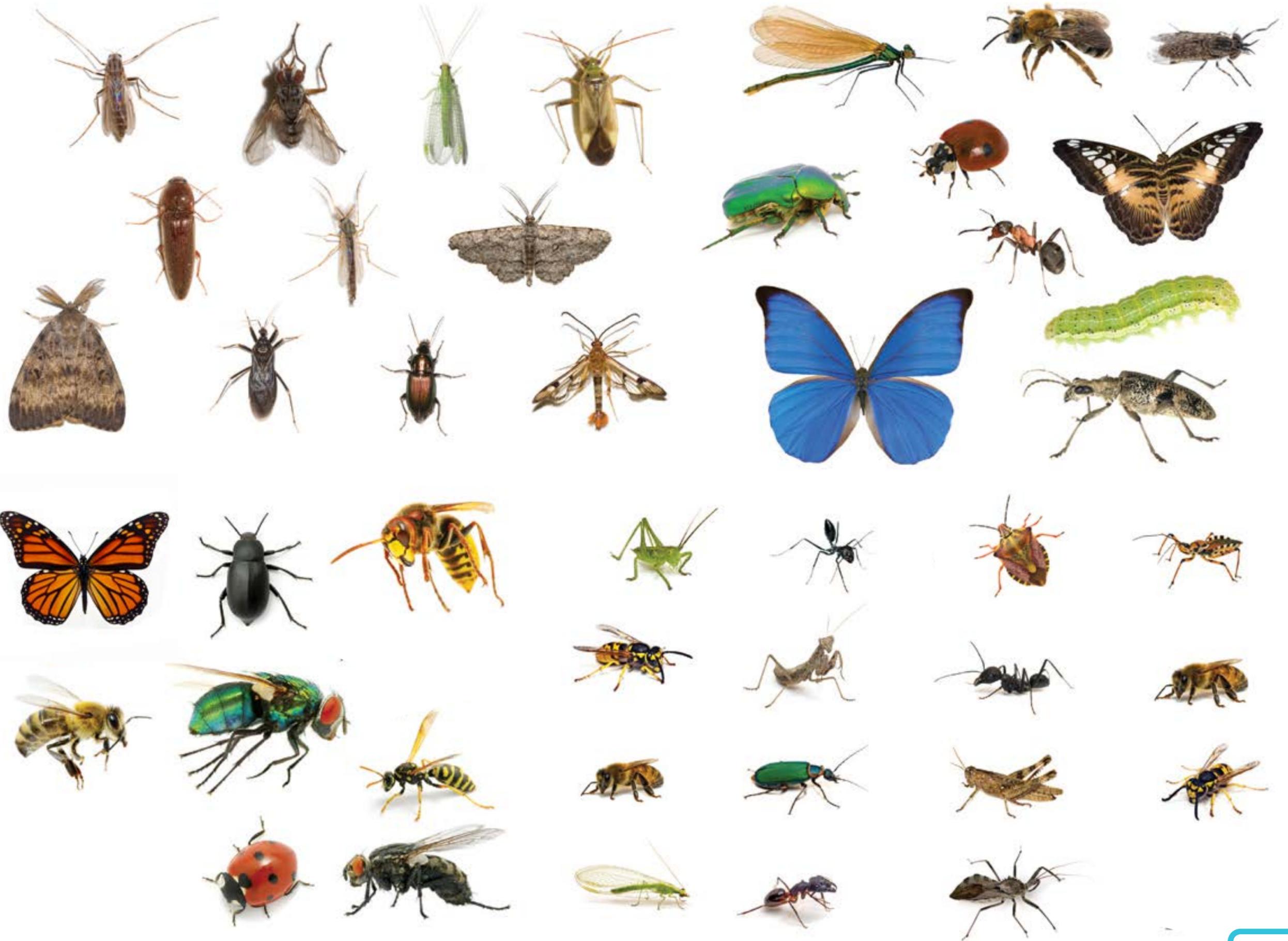
- **2.3% FISH**
- **0.7% REPTILES**
- **0.7% BIRDS**
- **0.5% AMPHIBIANS**
- **0.4% MAMMALS**

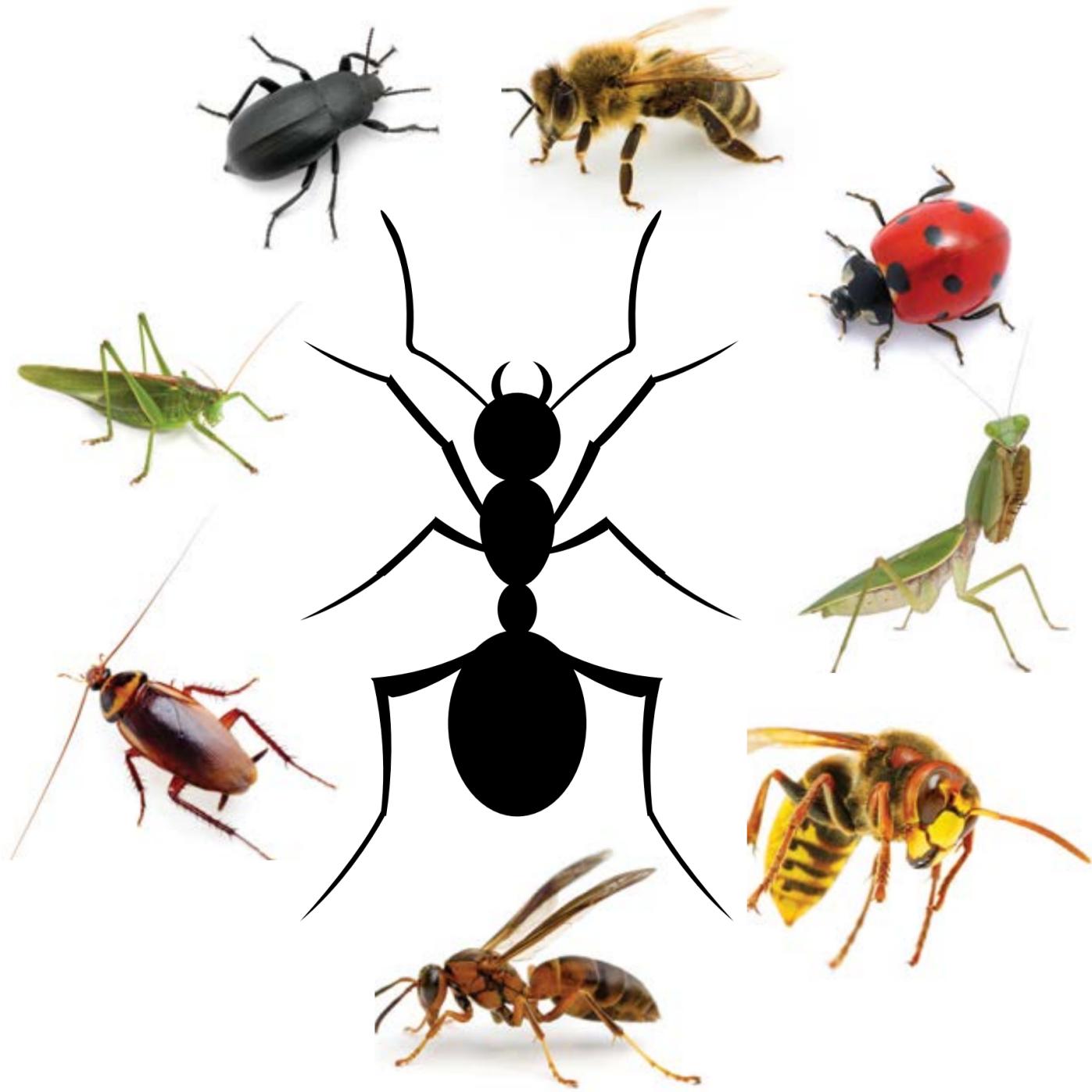






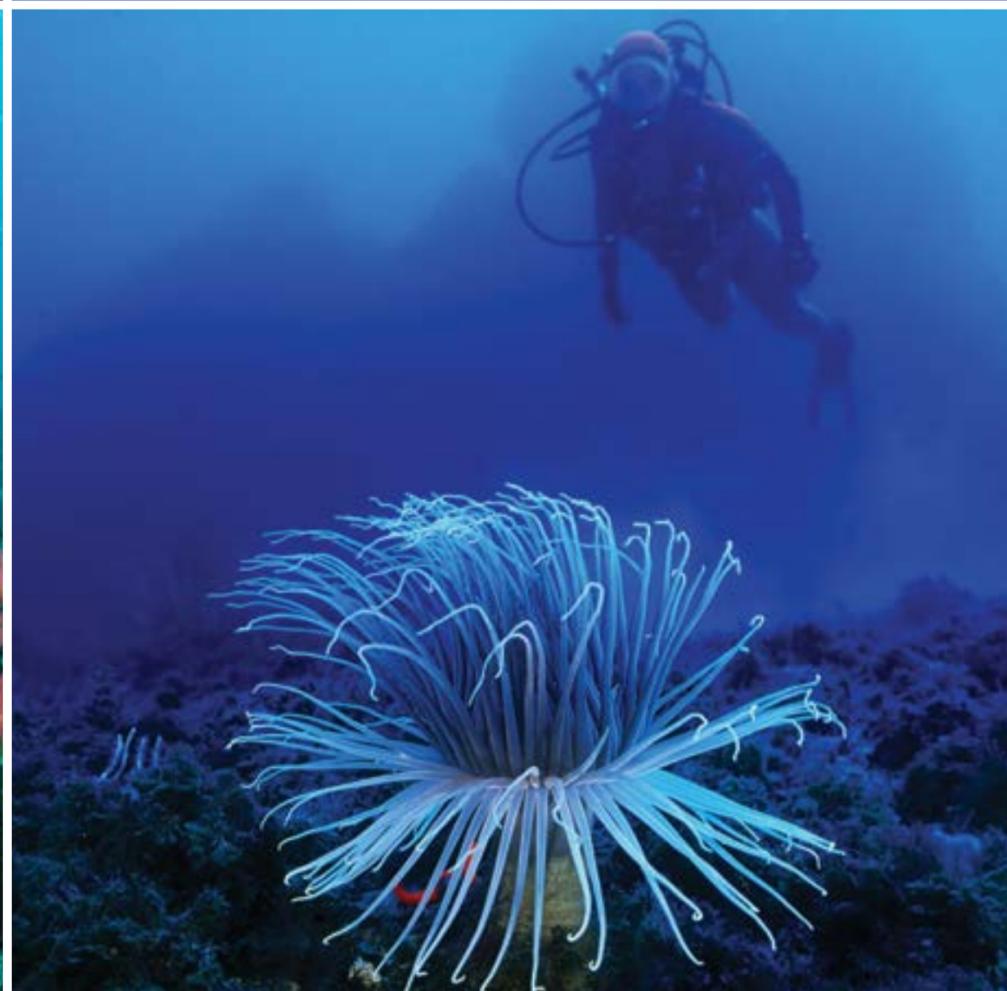
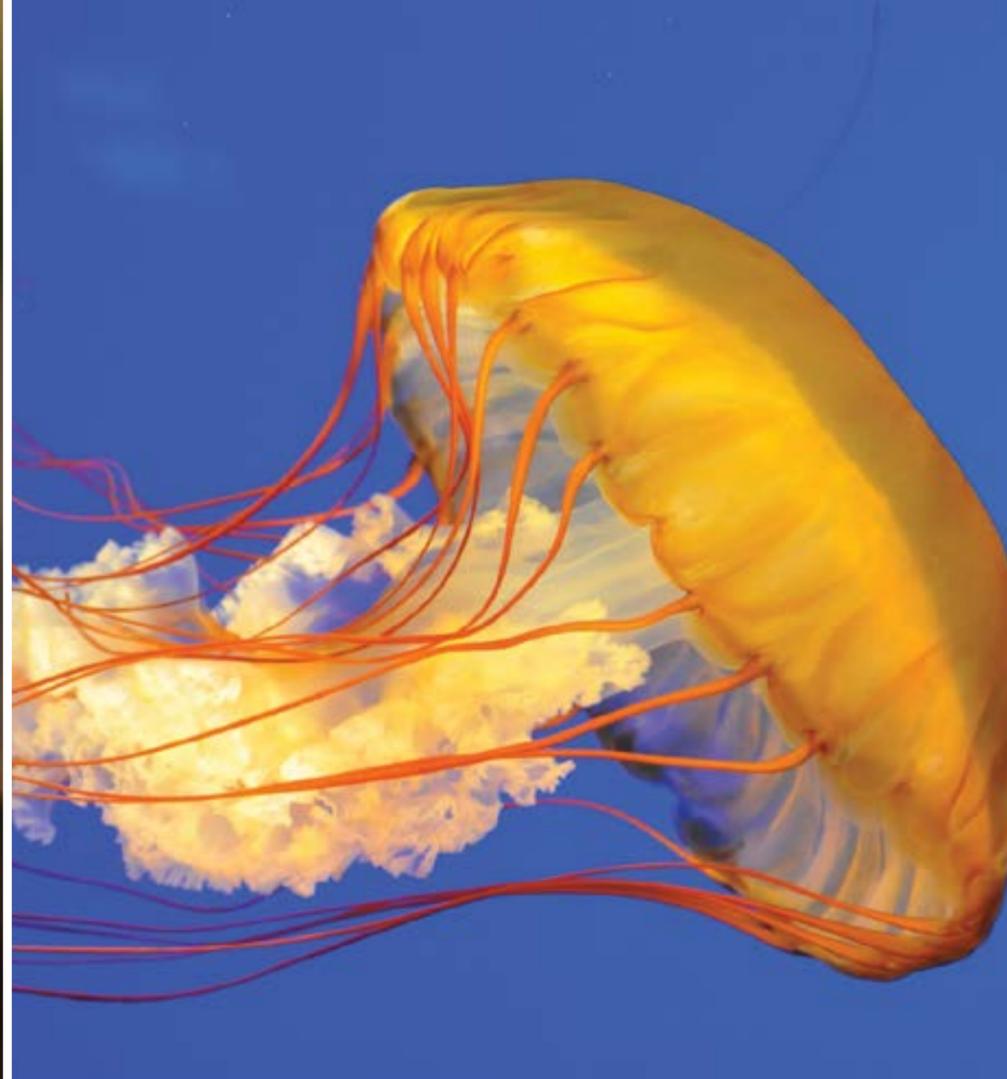








U2.L3.4



U2.L3.5

Living Things



Kingdom



Phylum



Class



Order



Family

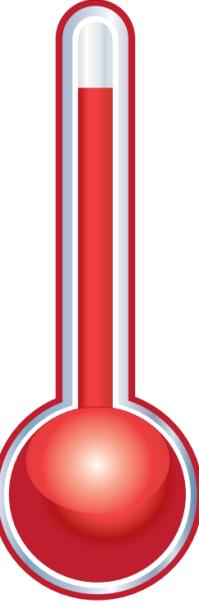
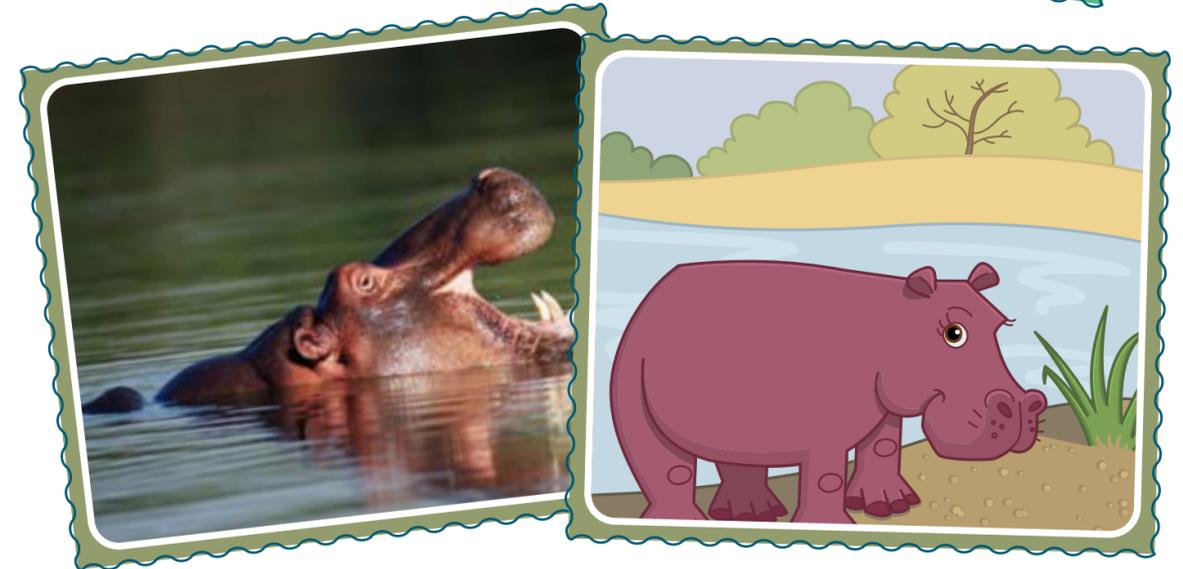
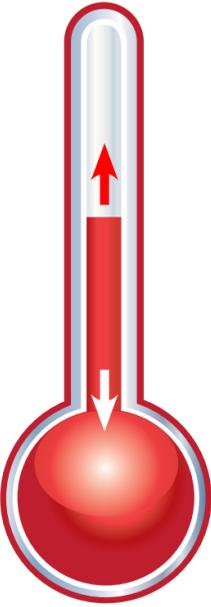


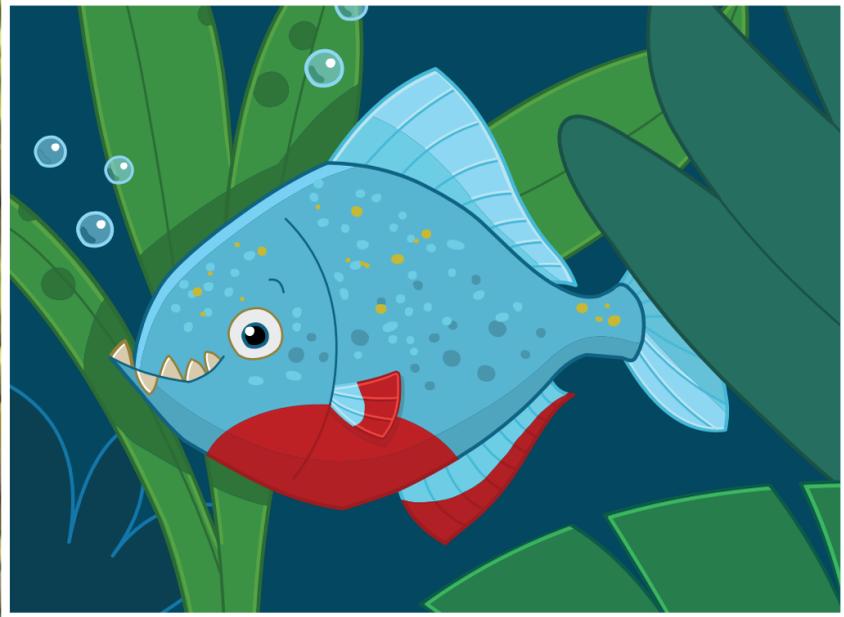
Genus

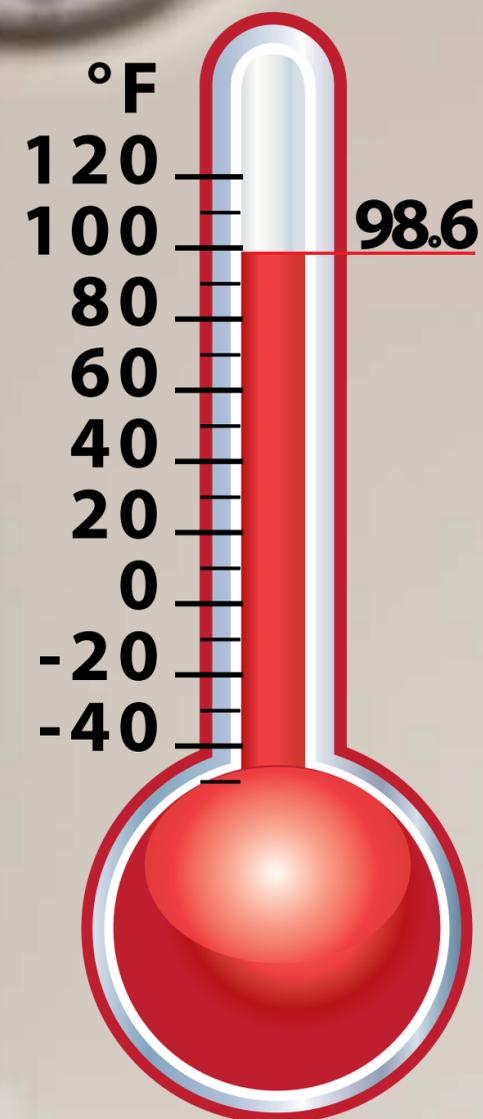


Species









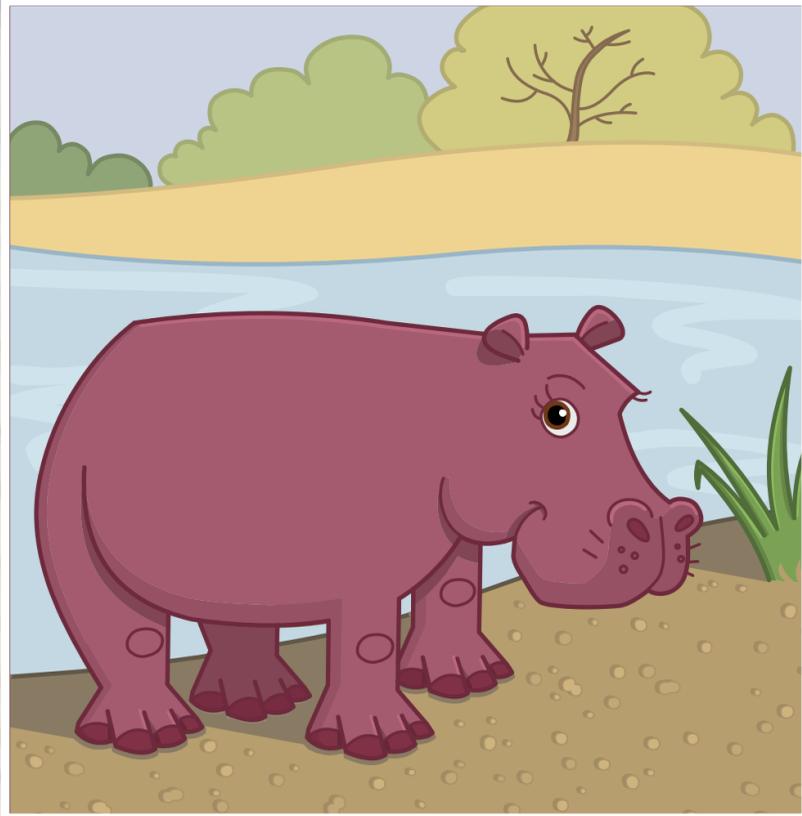
U2.L4.3





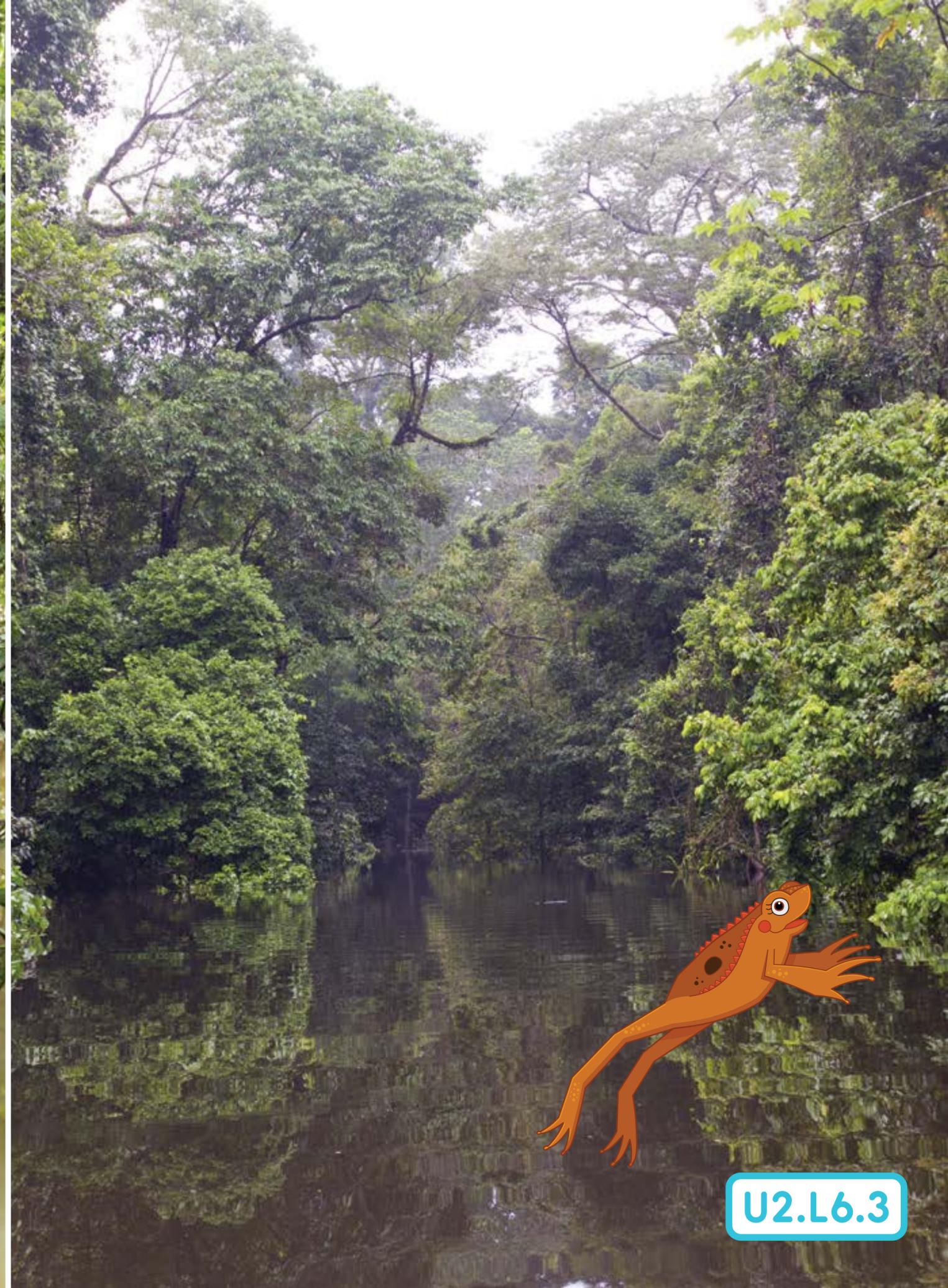


U2.L4.6





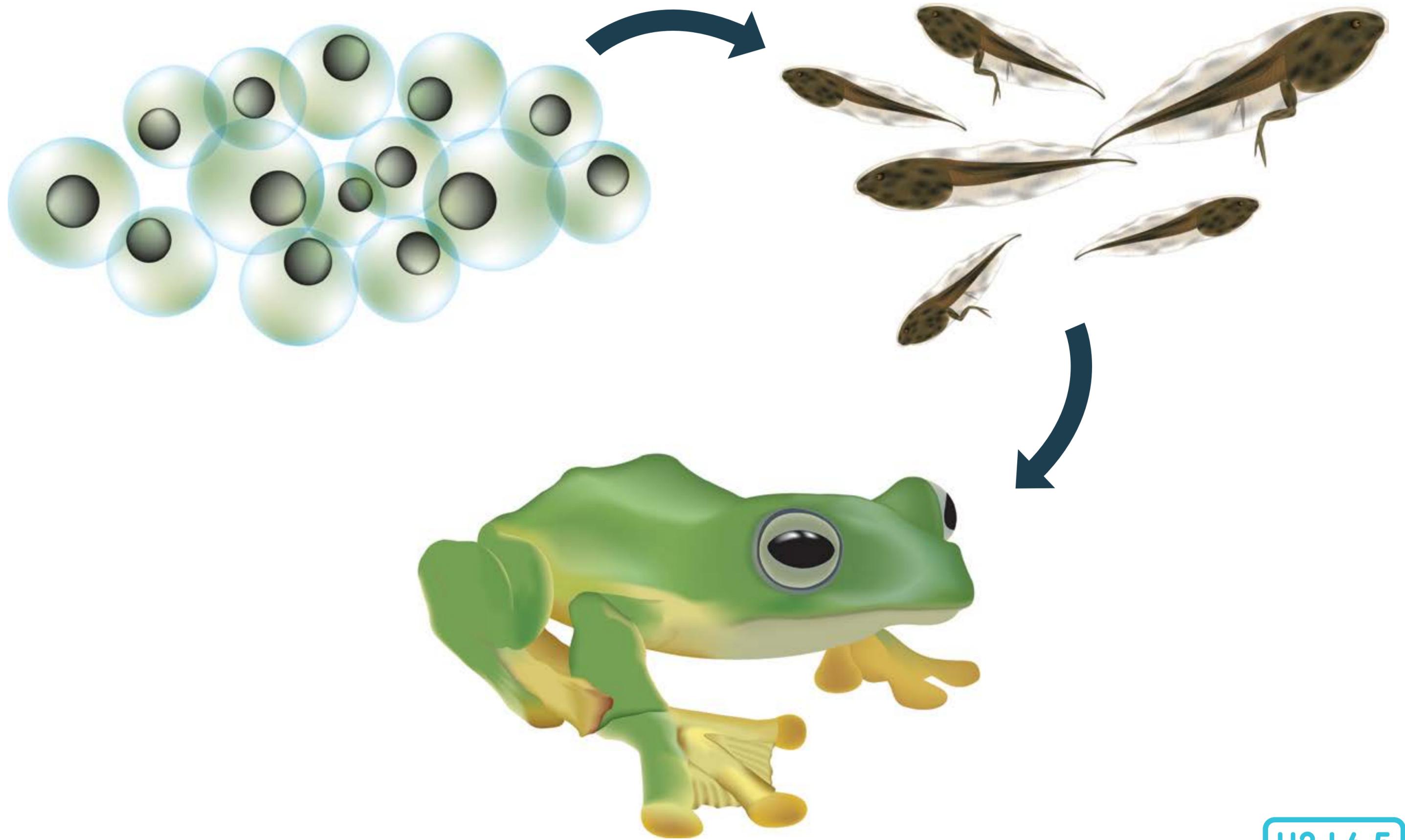


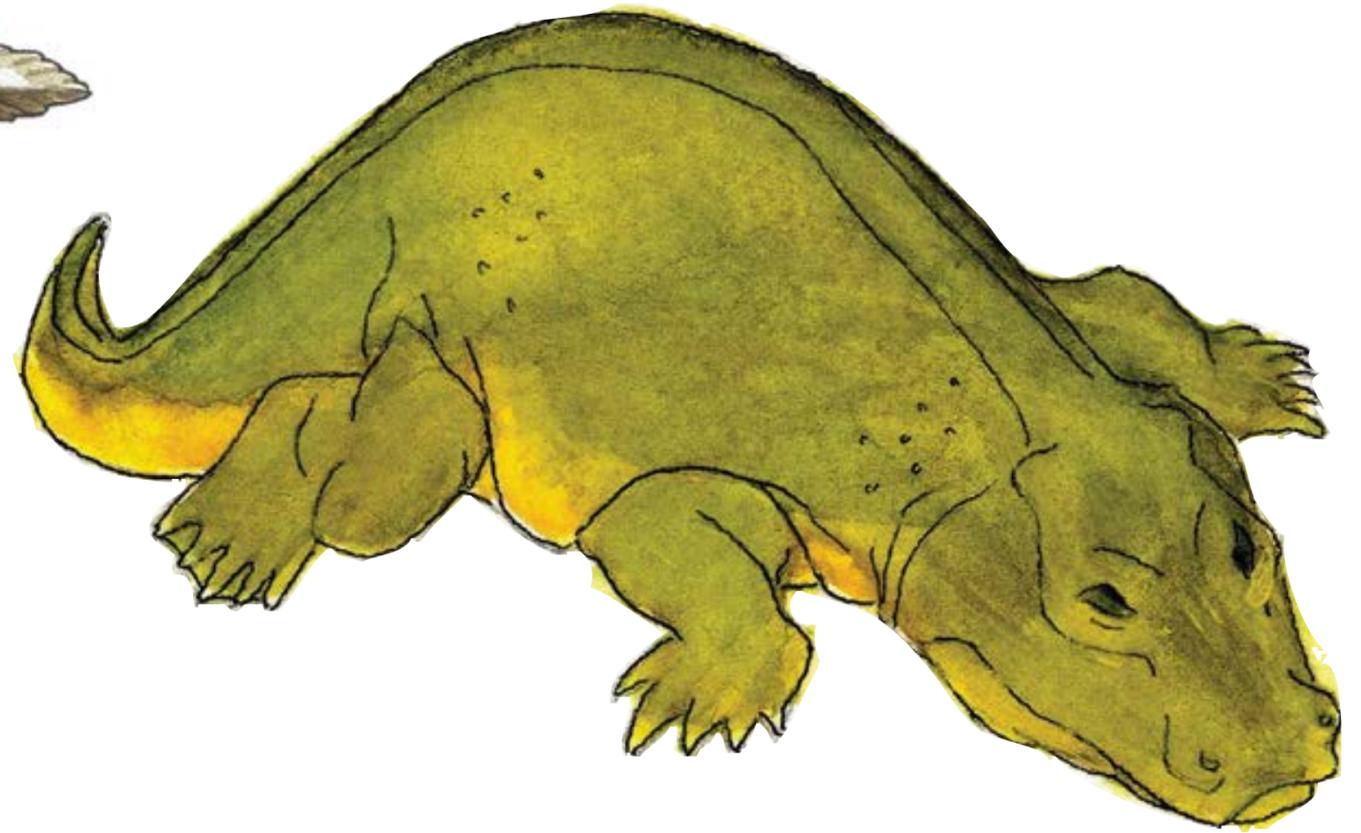
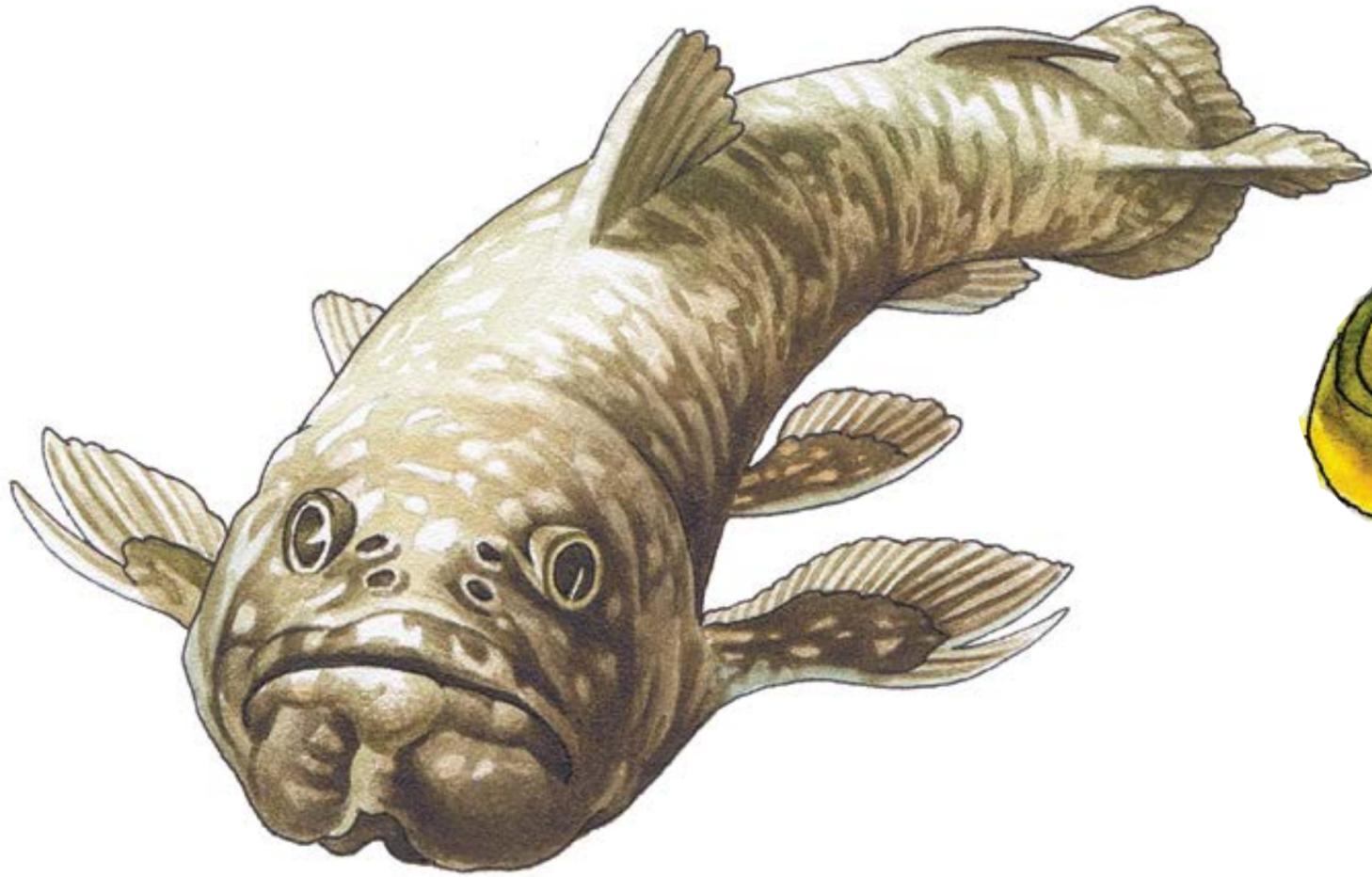


U2.L6.3

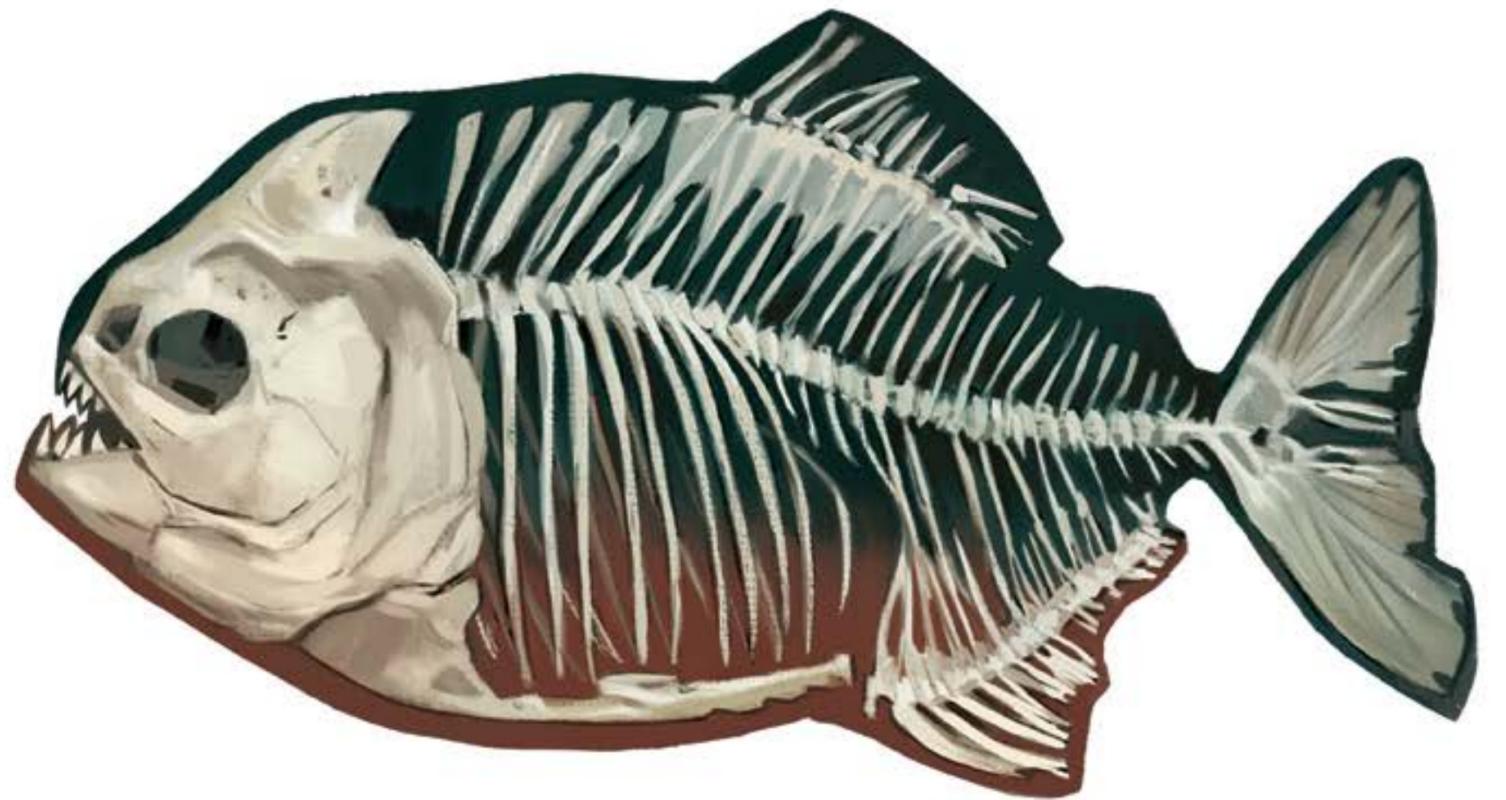
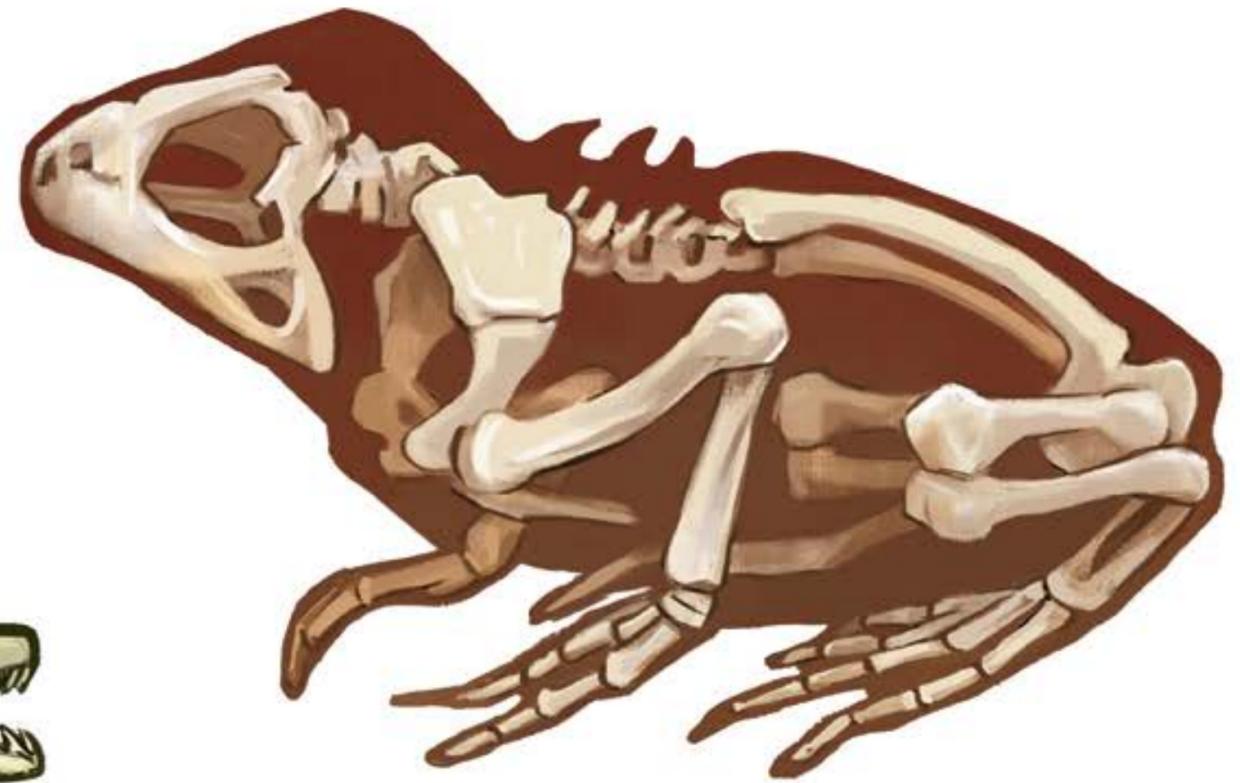
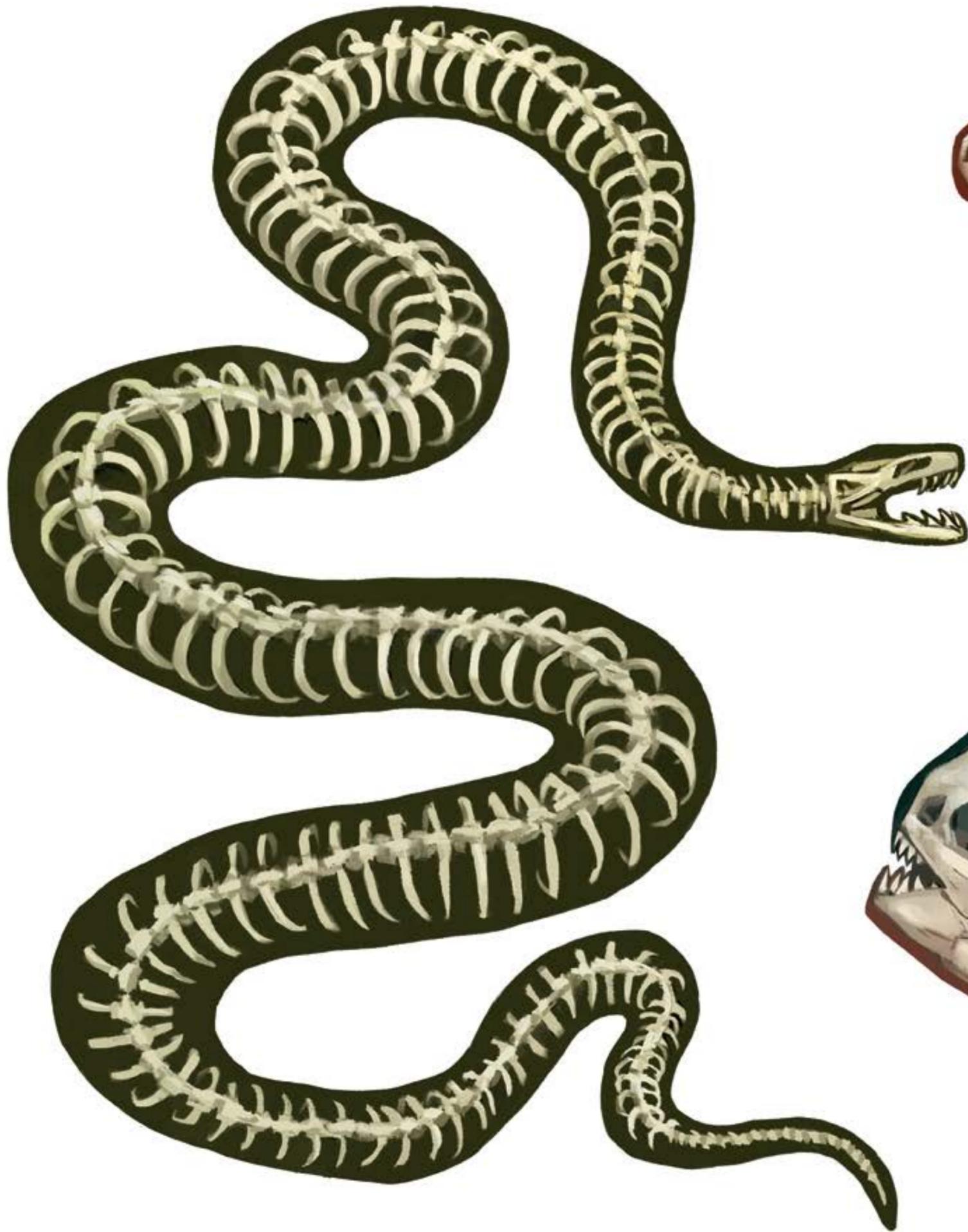


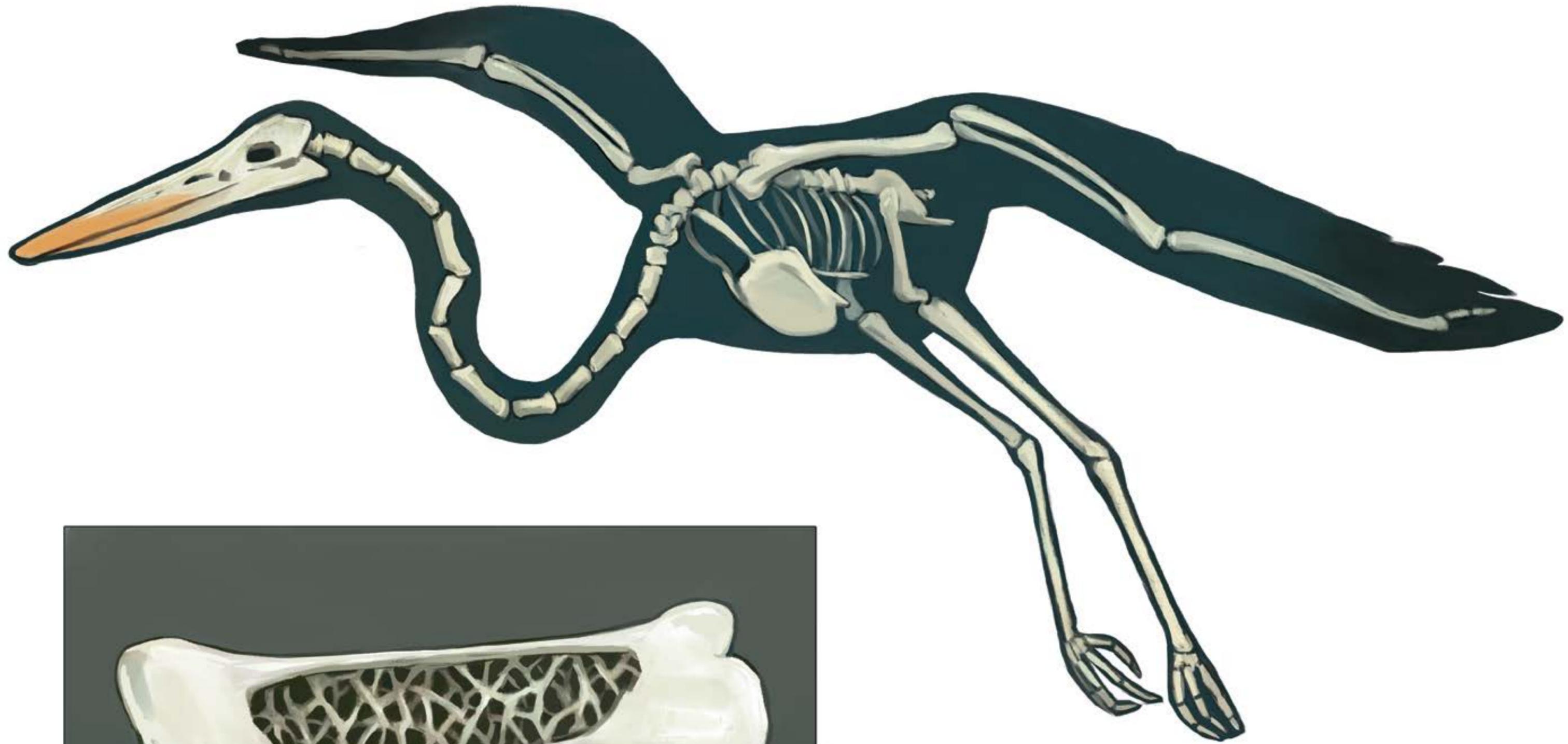
U2.L6.4













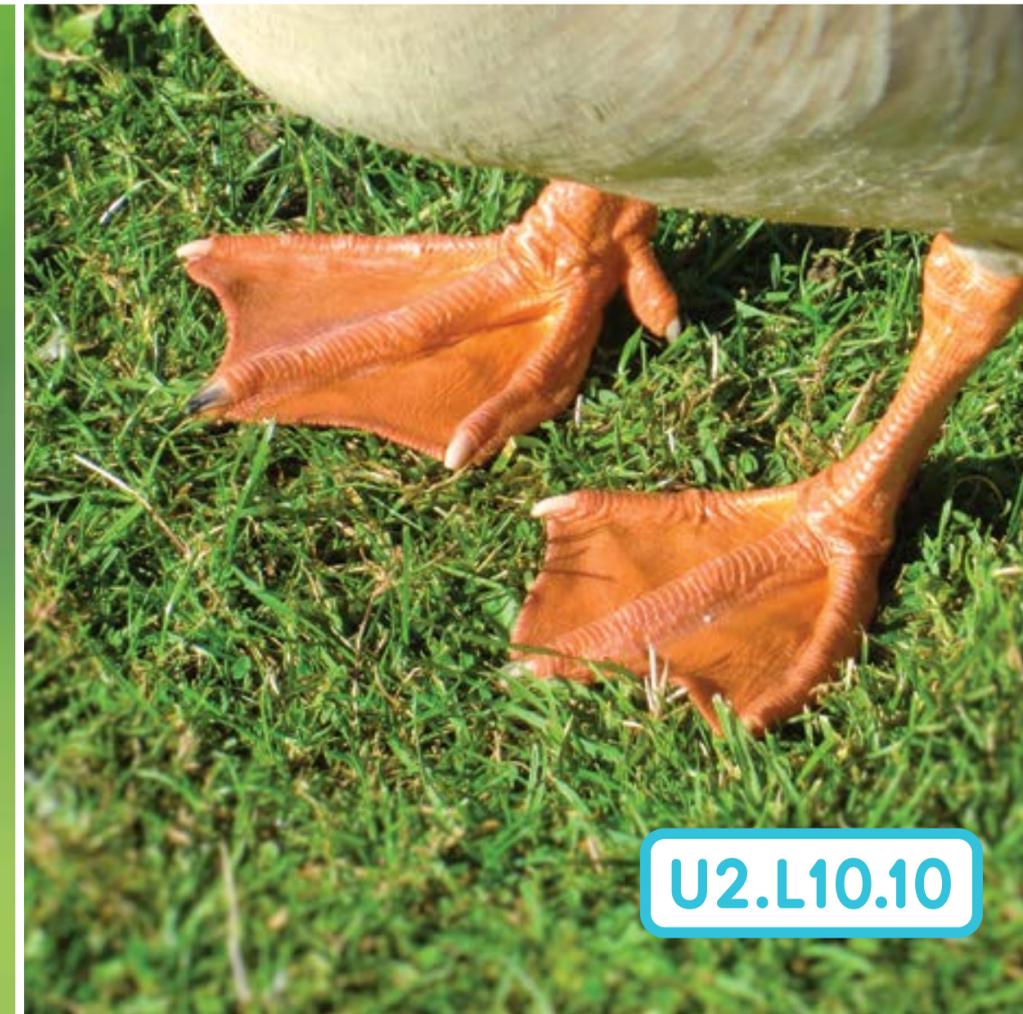
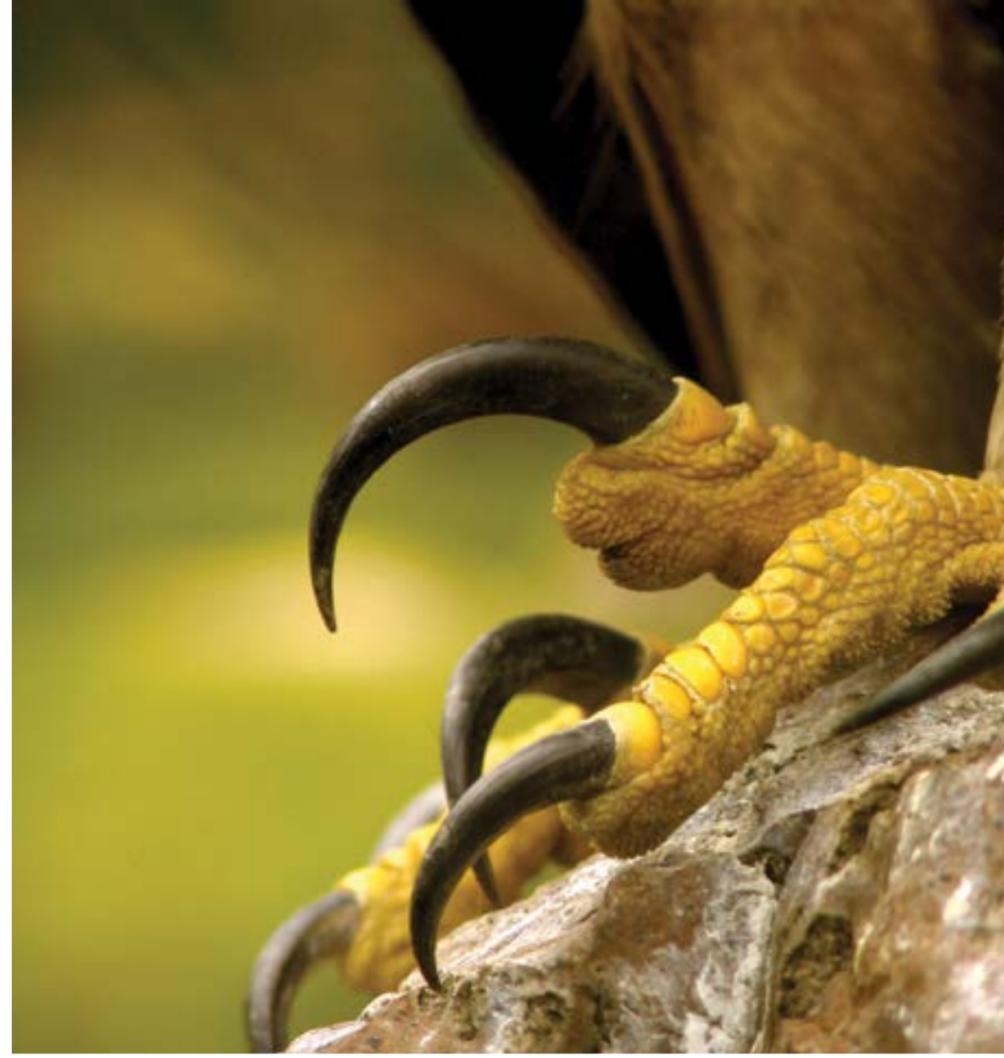
















U2.L10.12



U2.L10.13





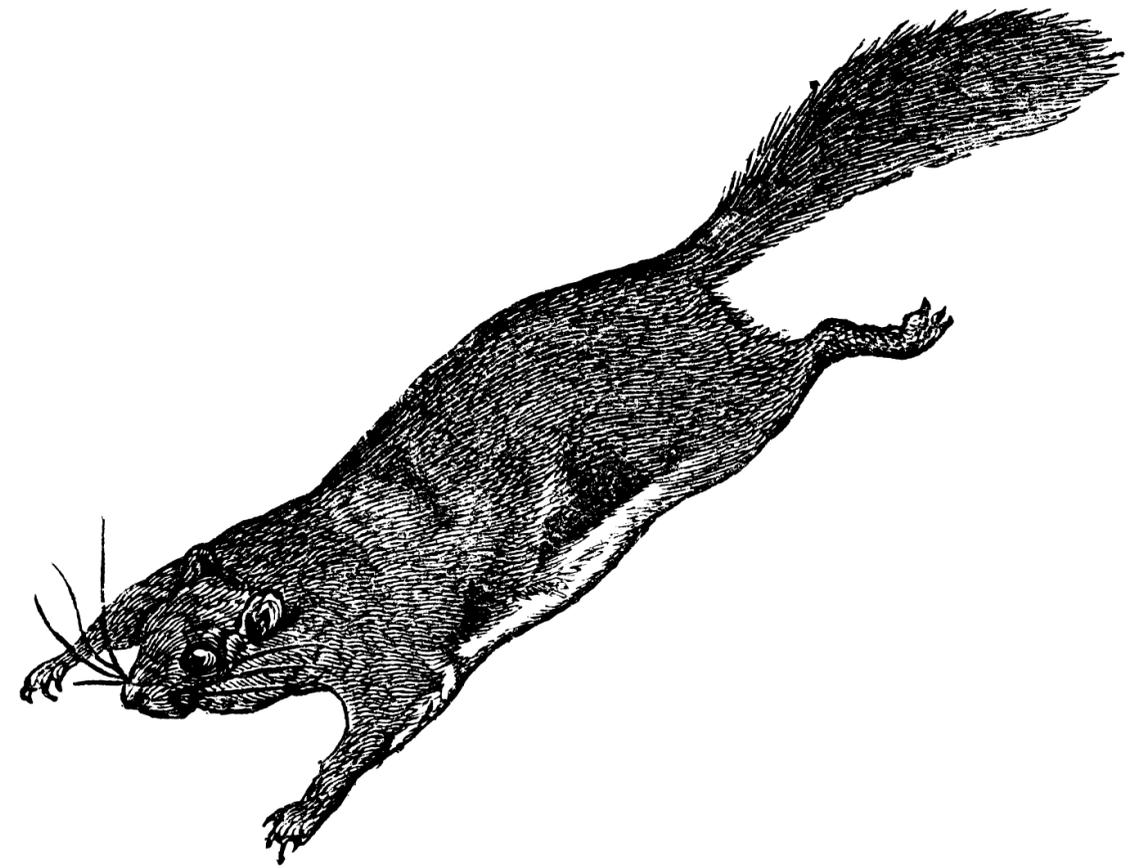
U2.L12.2





U2.L12.4

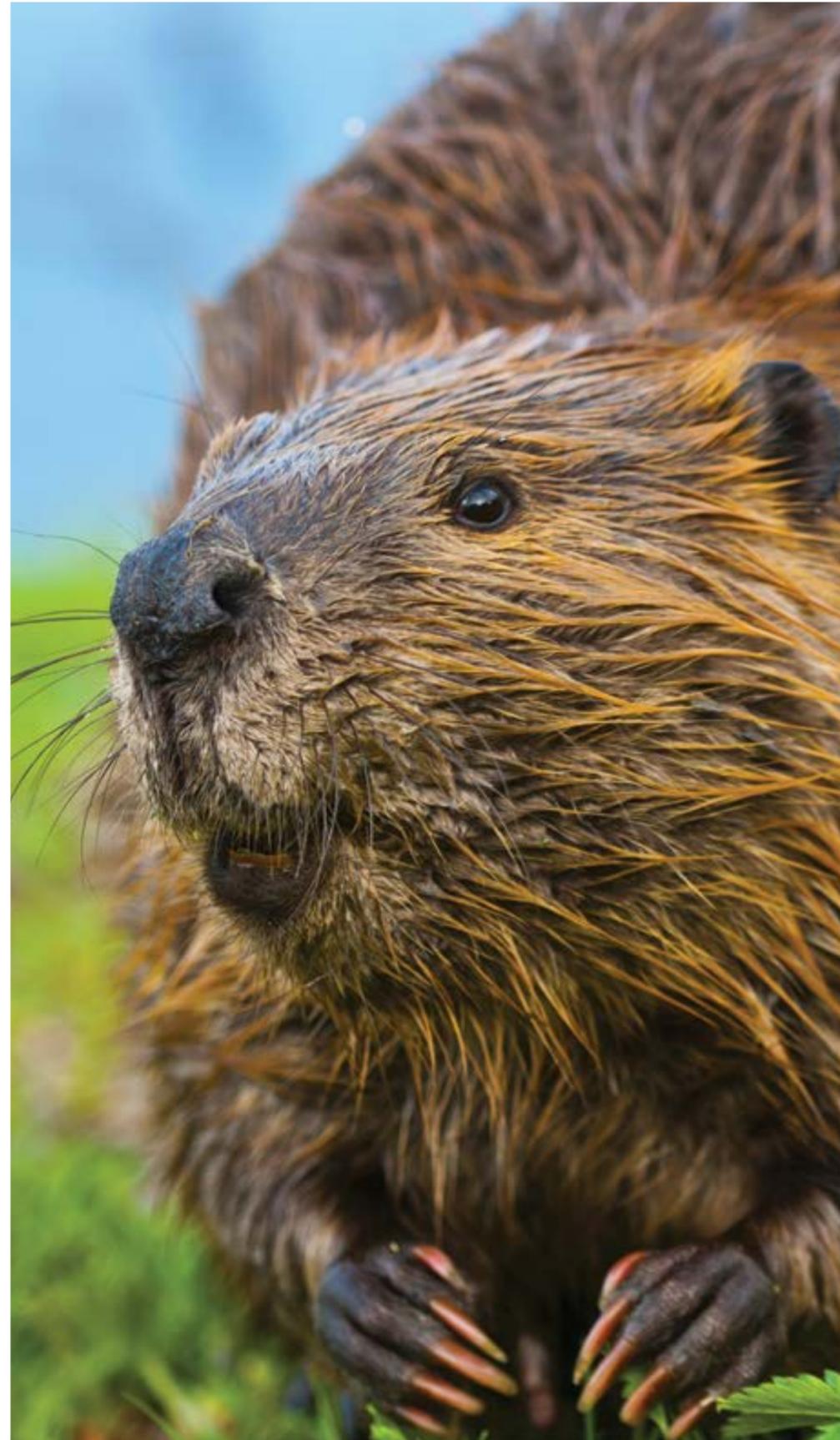














General Manager K-8 Humanities and SVP, Product

Alexandra Clarke

Chief Academic Officer, Elementary Humanities

Susan Lambert

Content and Editorial

Elizabeth Wade, PhD, Director, Elementary Language Arts Content

Patricia Erno, Associate Director, Elementary ELA Instruction

Baria Jennings, EdD, Senior Content Developer

Maria Martinez, Associate Director, Spanish Language Arts

Christina Cox, Managing Editor

Product and Project Management

Ayala Falk, Director, Business and Product Strategy, K-8 Language Arts

Amber McWilliams, Senior Product Manager

Elisabeth Hartman, Associate Product Manager

Catherine Alexander, Senior Project Manager, Spanish Language Arts

LaShon Ormond, SVP, Strategic Initiatives

Leslie Johnson, Associate Director, K-8 Language Arts

Thea Aguiar, Director of Strategic Projects, K-5 Language Arts

Zara Chaudhury, Project Manager, K-8 Language Arts

Design and Production

Tory Novikova, Product Design Director

Erin O'Donnell, Product Design Manager

Other Contributors

Patricia Beam, Bill Cheng, Ken Harney, Molly Hensley, David Herubin, Sara Hunt, Kristen Kirchner, James Mendez-Hodes, Christopher Miller, Diana Projansky, Todd Rawson, Jennifer Skelley, Julia Sverchuk, Elizabeth Thiers, Amanda Tolentino, Paige Womack

Texas Contributors

Content and Editorial

Sarah Cloos

Laia Cortes

Jayana Desai

Angela Donnelly

Claire Dorfman

Ana Mercedes Falcón

Rebecca Figueroa

Nick García

Sandra de Gennaro

Patricia Infanzón-Rodríguez

Seamus Kirst

Michelle Korál

Sean McBride

Jacqueline Ovalle

Sofía Pereson

Lilia Perez

Sheri Pineault

Megan Reasor

Marisol Rodriguez

Jessica Roodvoets

Lyna Ward

Product and Project Management

Stephanie Koleda

Tamara Morris

Art, Design, and Production

Nanyamka Anderson

Raghav Arumugan

Dani Aviles

Olioli Buika

Sherry Choi

Stuart Dalgo

Edel Ferri

Pedro Ferreira

Nicole Galuszka

Parker-Nia Gordon

Isabel Hetrick

Ian Horst

Ashna Kapadia

Jagriti Khirwar

Julie Kim

Lisa McGarry

Emily Mendoza

Marguerite Oerlemans

Lucas De Oliveira

Tara Pajouhesh

Jackie Pierson

Dominique Ramsey

Darby Raymond-Overstreet

Max Reinhardsen

Mia Saine

Nicole Stahl

Flore Thevoux

Jeanne Thornton

Amy Xu

Jules Zuckerberg

Series Editor-in-Chief

E. D. Hirsch Jr.

President

Linda Bevilacqua

Editorial Staff

Mick Anderson

Robin Blackshire

Laura Drummond

Emma Earnst

Lucinda Ewing

Sara Hunt

Rosie McCormick

Cynthia Peng

Liz Pettit

Tonya Ronayne

Deborah Samley

Kate Stephenson

Elizabeth Wafler

James Walsh

Sarah Zelinke

Acknowledgments

These materials are the result of the work, advice, and encouragement of numerous individuals over many years. Some of those singled out here already know the depth of our gratitude; others may be surprised to find themselves thanked publicly for help they gave quietly and generously for the sake of the enterprise alone. To helpers named and unnamed we are deeply grateful.

Contributors to Earlier Versions of These Materials

Susan B. Albaugh, Kazuko Ashizawa, Kim Berrall, Ang Blanchette, Nancy Braier, Maggie Buchanan, Paula Coyner, Kathryn M. Cummings, Michelle De Groot, Michael Donegan, Diana Espinal, Mary E. Forbes, Michael L. Ford, Sue Fulton, Carolyn Gosse, Dorrit Green, Liza Greene, Ted Hirsch, Danielle Knecht, James K. Lee, Matt Leech, Diane Henry Leipzig, Robin Luecke, Martha G. Mack, Liana Mahoney, Isabel McLean, Steve Morrison, Juliane K. Munson, Elizabeth B. Rasmussen, Ellen Sadler, Rachael L. Shaw, Sivan B. Sherman, Diane Auger Smith, Laura Tortorelli, Khara Turnbull, Miriam E. Vidaver, Michelle L. Warner, Catherine S. Whittington, Jeannette A. Williams.

We would like to extend special recognition to Program Directors Matthew Davis and Souzanne Wright, who were instrumental in the early development of this program.

Schools

We are truly grateful to the teachers, students, and administrators of the following schools for their willingness to field-test these materials and for their invaluable advice: Capitol View Elementary, Challenge Foundation Academy (IN), Community Academy Public Charter School, Lake Lure Classical Academy, Lepanto Elementary School, New Holland Core Knowledge Academy, Paramount School of Excellence, Pioneer Challenge Foundation Academy, PS 26R (the Carteret School), PS 30X (Wilton School), PS 50X (Clara Barton School), PS 96Q, PS 102X (Joseph O. Loretan), PS 104Q (the Bays Water), PS 214K (Michael Friedsam), PS 223Q (Lyndon B. Johnson School), PS 308K (Clara Cardwell), PS 333Q (Goldie Maple Academy), Sequoyah Elementary School, South Shore Charter Public School, Spartanburg Charter School, Steed Elementary School, Thomas Jefferson Classical Academy, Three Oaks Elementary, West Manor Elementary.

And a special thanks to the Pilot Coordinators, Anita Henderson, Yasmin Lugo-Hernandez, and Susan Smith, whose suggestions and day-to-day support to teachers using these materials in their classrooms were critical.

Notice and Disclaimer: The agency has developed these learning resources as a contingency option for school districts. These are optional resources intended to assist in the delivery of instructional materials in this time of public health crisis. Feedback will be gathered from educators and organizations across the state and will inform the continuous improvement of subsequent units and editions. School districts and charter schools retain the responsibility to educate their students and should consult with their legal counsel regarding compliance with applicable legal and constitutional requirements and prohibitions.

Given the timeline for development, errors are to be expected. If you find an error, please email us at texashomelearning@tea.texas.gov.

This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

You are free:

to Share—to copy, distribute, and transmit the work

to Remix—to adapt the work

Under the following conditions:

Attribution—You must attribute any adaptations of the work in the following manner:

This work is based on original works of Amplify Education, Inc. (amplify.com) and the Core Knowledge Foundation (coreknowledge.org) made available under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License. This does not in any way imply endorsement by those authors of this work.

Noncommercial—You may not use this work for commercial purposes.

Share Alike—If you alter, transform, or build upon this work, you may distribute the resulting work only under the same or similar license to this one.

With the understanding that:

For any reuse or distribution, you must make clear to others the license terms of this work. The best way to do this is with a link to this web page:

<https://creativecommons.org/licenses/by-nc-sa/4.0/>

© 2020 Amplify Education, Inc.
amplify.com

Trademarks and trade names are shown in this book strictly for illustrative and educational purposes and are the property of their respective owners. References herein should not be regarded as affecting the validity of said trademarks and trade names.

Credits

Every effort has been taken to trace and acknowledge copyrights. The editors tender their apologies for any accidental infringement where copyright has proved untraceable. They would be pleased to insert the appropriate acknowledgment in any subsequent edition of this publication. Trademarks and trade names are shown in this publication for illustrative purposes only and are the property of their respective owners. The references to trademarks and trade names given herein do not affect their validity.

All photographs are used under license from Shutterstock, Inc. unless otherwise noted.

Expert Reviewer

Christine L. May

Writers

Catherine S. Whittington

Illustrators and Image Sources

Cover: Amplify; U2.L2.1: Shutterstock; U2.L2.1 (Rattenborough): Alisa Haggard; U2.L2.2: Shutterstock; U2.L2.3: Simini Blocker; U2.L2.3 (inset): Shutterstock; U2.L2.4: Shutterstock; U2.L2.5: Shutterstock; U2.L2.6: Core Knowledge Staff; U2.L2.7: Core Knowledge Staff; U2.L2.8 (illustrations): Alisa Haggard; U2.L2.8 (frog): Shutterstock; U2.L2.8 (fish): Shutterstock; U2.L2.8 (hippo): Shutterstock; U2.L2.8 (crane): Shutterstock; U2.L2.8 (snake): JanRehschuh / Wikimedia Commons / Creative Commons Attribution-Share Alike 3.0 Unported, <http://creativecommons.org/licenses/by-sa/3.0/deed.en> / modified from original; U2.L2.9: Shutterstock; U2.L2.10: Shutterstock; U2.L3.1 (illustrations): Alisa Haggard; U2.L3.1 (frog): Alisa Haggard; U2.L3.1 (fish): Alisa Haggard; U2.L3.1 (hippo): Alisa Haggard; U2.L3.1 (crane): Alisa Haggard; U2.L3.1 (snake): Alisa Haggard; U2.L3.2: Shutterstock; U2.L3.3: Shutterstock; U2.L3.4: Shutterstock; U2.L3.5: Shutterstock; U2.L3.6: Shutterstock; U2.L4.1 (illustrations): Alisa Haggard; U2.L4.1 (frog): Shutterstock; U2.L4.1 (fish): Shutterstock; U2.L4.1 (hippo): Shutterstock; U2.L4.1 (crane): Shutterstock; U2.L4.1 (snake): JanRehschuh / Wikimedia Commons / Creative Commons Attribution-Share Alike 3.0 Unported, <http://creativecommons.org/licenses/by-sa/3.0/deed.en> / modified from original; U2.L4.2: Shutterstock; U2.L4.2 (inset): Alisa Haggard; U2.L4.3: Shutterstock; U2.L4.4: Shutterstock; U2.L4.4 (inset illustration): Alisa Haggard; U2.L4.5: Shutterstock; U2.L4.5 (inset illustration): Alisa Haggard; U2.L4.6: Shutterstock; U2.L4.6 (inset): Alisa Haggard; U2.L4.7: Shutterstock; U2.L4.7 (inset): Alisa Haggard; U2.L6.1 (background): Erika Baird; U2.L6.1 (smiling frog): Alisa Haggard; U2.L6.2 (left): Shutterstock; U2.L6.2 (right): Simini Blocker; U2.L6.3 (backgrounds): Shutterstock; U2.L6.3 (illustrations): Alisa Haggard; U2.L6.4: Shutterstock; U2.L6.5: Shutterstock; U2.L6.6: Shutterstock; U2.L10.1 (background): Erika Baird; U2.L10.1 (front left crane): Alisa Haggard; U2.L10.2: Simini Blocker; U2.L10.3: Simini Blocker; U2.L10.4 (background): Shutterstock; U2.L10.4 (Rattenborough): Alisa Haggard; U2.L10.5: Shutterstock; U2.L10.6 (background): Shutterstock; U2.L10.6 (top left crane): Alisa Haggard; U2.L10.7: Shutterstock; U2.L10.8: Shutterstock; U2.L10.9 (illustration): Alisa Haggard; U2.L10.9 (photographs): Shutterstock; U2.L10.10 (illustration): Alisa Haggard; U2.L10.10 (photographs): Shutterstock; U2.L10.11: Simini Blocker; U2.L10.12: Shutterstock; U2.L10.13: Shutterstock; U2.L12.1 (background): Erika Baird; U2.L12.1 (front-facing hippo): Alisa Haggard; U2.L12.2: Shutterstock; U2.L12.3 (background): Shutterstock; U2.L12.3 (Rattenborough): Alisa Haggard; U2.L12.4: Shutterstock; U2.L12.5: Shutterstock; U2.L12.6: Shutterstock; U2.L12.7: Shutterstock; U2.L12.8: Shutterstock; U2.L12.9: Shutterstock; U2.L12.10: Shutterstock; U2.L12.11: Shutterstock

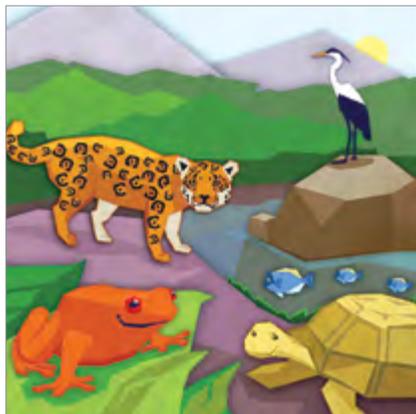
Regarding the Shutterstock items listed above, please note: "No person or entity shall falsely represent, expressly or by way of reasonable implication, that the content herein was created by that person or entity, or any person other than the copyright holder(s) of that content."



Grade 3 | Unit 2 | Digital Flip Book
Scales, Feathers, and Fur: Animal Classification

Grade 3

Unit 2: *Scales, Feathers, and Fur:* *Animal Classification*



Unit-level Essential Question

Why is it important to classify animals?

Lessons 1–5

Guiding Question: Which groups of animals can be classified by their backbones?

Writing Prompt: How are the ideas in “Vertebrates and Invertebrates” similar to or different from the ideas in “Vertebrate Animals”?

Lessons 6–10

Guiding Question: How do animals change as they grow?

Writing Prompt: Think of the transition words you heard when you learned about amphibian metamorphosis. Write a short paragraph using those words to describe the metamorphosis of a butterfly.

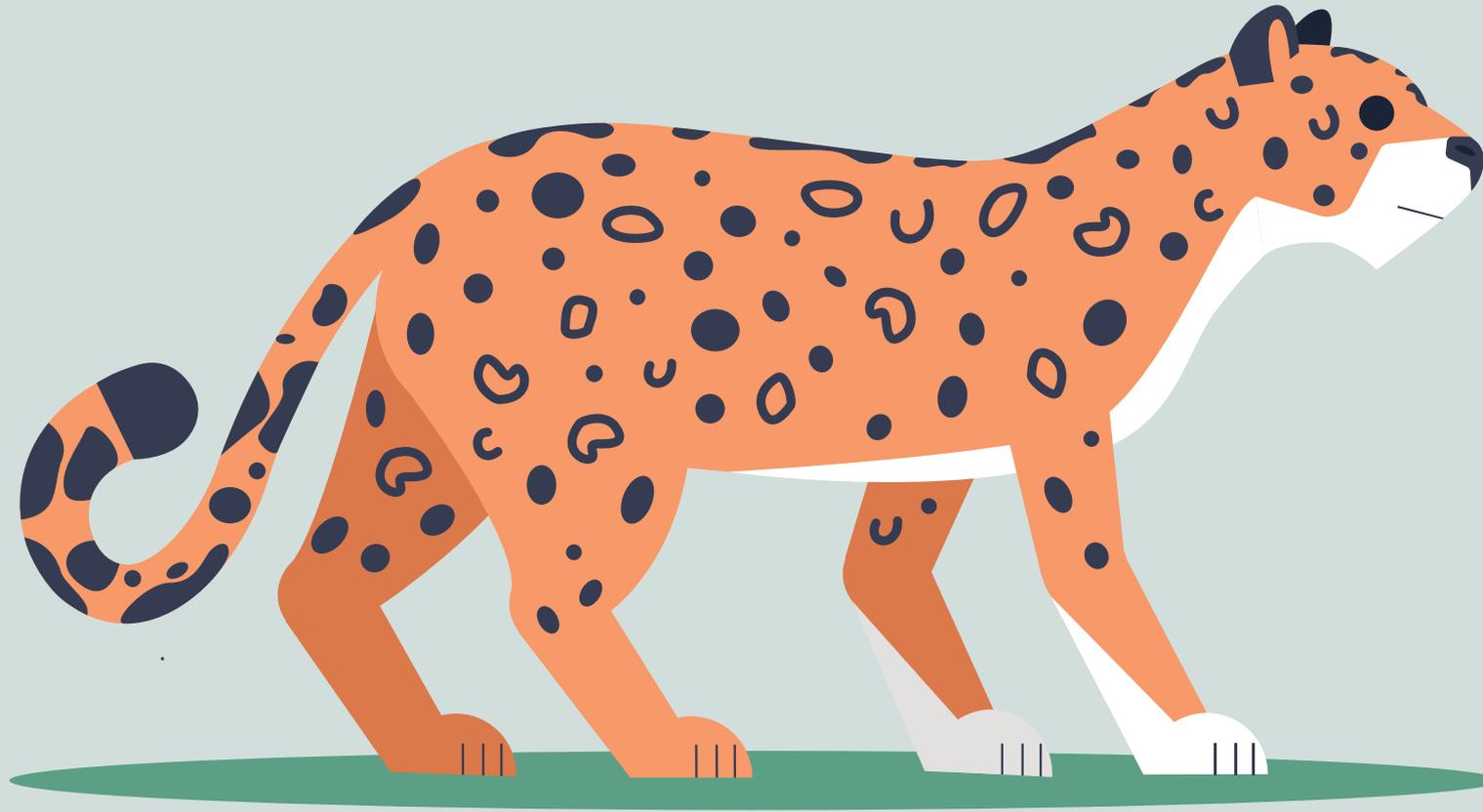
Lessons 11–15

Guiding Question: What can we learn from observing animals?

Writing Prompt: How were the chimps that Jane Goodall studied similar to human beings? Why was this discovery important?

Unit 2 Culminating Activity

Consider a type of animal you see every day. For one week, you will be just like Jane Goodall studying primates! You will observe the animal you selected and make notes, preparing a presentation you will give to your class about your chosen animal. Remember to record facts like habitat, diet, characteristics, and classification.



Grade 3

Unit 2 | Digital Projections

Scales, Feathers, and Fur: Animal Classification

Grade 3

Unit 2

Scales, Feathers, and Fur: Animal Classification

Digital Projections

Contents
Scales, Feathers, and Fur:
Animal Classification
Digital Projections

Lesson 1	DP.U2.L1.1	Root Words.....	1
Lesson 2	DP.U2.L2.1	Parts of Speech.....	2
Lesson 3	DP.U2.L3.1	Vertebrates or Invertebrates?.....	3
Lesson 4	DP.U2.L4.1	Central Idea and Supporting Details.....	4
Lesson 4	DP.U2.L4.2	Prefix.....	5
Lesson 6	DP.U2.L6.1	Text Structures.....	6
Lesson 6	DP.U2.L6.2	Root Words.....	7
Lesson 8	DP.U2.L8.1	Context Clues.....	8
Lesson 8	DP.U2.L8.2	Context Clues.....	9
Lesson 9	DP.U2.L9.1	Close Reading.....	10
Lesson 11	DP.U2.L11.1	Root Words.....	11
Lesson 11	DP.U2.L11.2	Parts of Speech.....	12
Lesson 13	DP.U2.L13.1	Jane Goodall Quote.....	13

Root Words

Root Word	<i>-ed</i>	<i>-ing</i>

Parts of Speech

Nouns are words that name people, places, or things.

Common nouns are general and are not capitalized.

Proper nouns are specific and are capitalized.

Verbs are words that show action.

Adjectives are words that describe nouns.

Vertebrates or Invertebrates?

Before Reading	After Reading
<p>Humans Vertebrate: Invertebrate:</p>	<p>Humans Vertebrate: Invertebrate:</p>
<p>Horse Vertebrate: Invertebrate:</p>	<p>Horse Vertebrate: Invertebrate:</p>
<p>Butterfly Vertebrate: Invertebrate:</p>	<p>Butterfly Vertebrate: Invertebrate:</p>
<p>Snake Vertebrate: Invertebrate:</p>	<p>Snake Vertebrate: Invertebrate:</p>
<p>Lobsters Vertebrate: Invertebrate:</p>	<p>Lobsters Vertebrate: Invertebrate:</p>
<p>Goldfish Vertebrate: Invertebrate:</p>	<p>Goldfish Vertebrate: Invertebrate:</p>
<p>Earthworm Vertebrate: Invertebrate:</p>	<p>Earthworm Vertebrate: Invertebrate:</p>

Central Idea and Supporting Details

Central Idea

The central idea is what the text is mostly about.

Clues to Finding the Central Idea:

- “What is the text mostly about?”
- Look at the title.
- Look at the pictures and captions.
- Check the first and last sentence.
- Notice words that are repeatedly used.

Supporting Details

These support the central idea.

Clues to Finding Supporting Details:

- facts that tell you more about the central idea
- details that tell you more about the central idea

Prefix

A **prefix** is a syllable placed in front of a root word. Prefixes change the meaning of the root word.

Text Structures

How does the author organize information in a text?

Different Types of Text Structures	Defined	Clue Words
Time	Explains when an event took place	Before Now Later
Sequence	Explains the order in which events happened	First Next Then After Last Finally
Cause and Effect	Explains why things happen	Because Then If So As a result When
Comparison	Shows difference and similarities between two or more things	However On the other hand Like Unlike Same

Root Words

Root Word	<i>-ed</i>	<i>-ing</i>

Context Clues

Glossary	<ul style="list-style-type: none">• Look in the back of the book.
Sentences before or after	<ul style="list-style-type: none">• Look at the sentences before or after for clues.
Signal words and punctuation	<ul style="list-style-type: none">• called• _____ is/are• commas
Prefixes and suffixes	<ul style="list-style-type: none">• prefixes<ul style="list-style-type: none">◦ <i>un-</i> = not◦ <i>re-</i> = again• suffixes<ul style="list-style-type: none">◦ <i>-ful</i> = full of◦ <i>-able</i> = able to do

Context Clues

Unknown Word	Clues from the Text	Predictions

Close Reading

1st Read: Big Picture

Focus on:

- Central idea
- Asking and answering questions
- Summarizing the text
- Describing important parts
- Retelling

2nd Read: Dig Deeper

Focus on:

- Text features and text structures
- Author's purpose
- Vocabulary words

3rd Read: All Together

Focus on:

- Compare and contrast to other texts
- Inferences
- Key points

Root Words

Root Word	-es

Parts of Speech

Nouns are words that name people, places, or things.

Common nouns are general and are not capitalized.

Proper nouns are specific and are capitalized.

Abstract nouns are types of nouns that a person cannot physically see, hear, smell, taste, or touch. They name emotions/feelings, states/attributes, ideas/concepts, and movements/events.

Verbs are words that show action.

Linking verbs are words that connect the subject to a word or words (adjectives) in the predicate that describe it. Linking verbs do not show action.

Adjectives are words that describe nouns.

Jane Goodall Quote

“One thing I had learned from watching chimpanzees with their infants is that having a child should be fun.”



General Manager K-8 Humanities and SVP, Product

Alexandra Clarke

Chief Academic Officer, Elementary Humanities

Susan Lambert

Content and Editorial

Elizabeth Wade, PhD, Director, Elementary Language Arts Content

Patricia Erno, Associate Director, Elementary ELA Instruction

Baria Jennings, EdD, Senior Content Developer

Maria Martinez, Associate Director, Spanish Language Arts

Christina Cox, Managing Editor

Product and Project Management

Ayala Falk, Director, Business and Product Strategy, K-8 Language Arts

Amber McWilliams, Senior Product Manager

Elisabeth Hartman, Associate Product Manager

Catherine Alexander, Senior Project Manager, Spanish Language Arts

LaShon Ormond, SVP, Strategic Initiatives

Leslie Johnson, Associate Director, K-8 Language Arts

Thea Aguiar, Director of Strategic Projects, K-5 Language Arts

Zara Chaudhury, Project Manager, K-8 Language Arts

Design and Production

Tory Novikova, Product Design Director

Erin O'Donnell, Product Design Manager

Other Contributors

Patricia Beam, Bill Cheng, Ken Harney, Molly Hensley, David Herubin, Sara Hunt, Kristen Kirchner, James Mendez-Hodes, Christopher Miller, Diana Projansky, Todd Rawson, Jennifer Skelley, Julia Sverchuk, Elizabeth Thiers, Amanda Tolentino, Paige Womack

Texas Contributors

Content and Editorial

Sarah Cloos	Sean McBride
Laia Cortes	Jacqueline Ovalle
Jayana Desai	Sofía Pereson
Angela Donnelly	Lilia Perez
Claire Dorfman	Sheri Pineault
Ana Mercedes Falcón	Megan Reasor
Rebecca Figueroa	Marisol Rodriguez
Nick García	Jessica Roodvoets
Sandra de Gennaro	Lyna Ward
Patricia Infanzón-Rodríguez	
Seamus Kirst	
Michelle Koral	

Product and Project Management

Stephanie Koleda
Tamara Morris

Art, Design, and Production

Nanyamka Anderson	Emily Mendoza
Raghav Arumugan	Marguerite Oerlemans
Dani Aviles	Lucas De Oliveira
Olioli Buika	Tara Pajouhesh
Sherry Choi	Jackie Pierson
Stuart Dalgo	Dominique Ramsey
Edel Ferri	Darby Raymond-Overstreet
Pedro Ferreira	Max Reinhardsen
Nicole Galuszka	Mia Saine
Parker-Nia Gordon	Nicole Stahl
Isabel Hetrick	Flore Thevoux
Ian Horst	Jeanne Thornton
Ashna Kapadia	Amy Xu
Jagriti Khirwar	Jules Zuckerberg
Julie Kim	
Lisa McGarry	

Series Editor-in-Chief

E. D. Hirsch Jr.

President

Linda Bevilacqua

Editorial Staff

Mick Anderson
Robin Blackshire
Laura Drummond
Emma Earnst
Lucinda Ewing
Sara Hunt
Rosie McCormick
Cynthia Peng
Liz Pettit
Tonya Ronayne
Deborah Samley
Kate Stephenson
Elizabeth Wafler
James Walsh
Sarah Zelinke

Acknowledgments

These materials are the result of the work, advice, and encouragement of numerous individuals over many years. Some of those singled out here already know the depth of our gratitude; others may be surprised to find themselves thanked publicly for help they gave quietly and generously for the sake of the enterprise alone. To helpers named and unnamed we are deeply grateful.

Contributors to Earlier Versions of These Materials

Susan B. Albaugh, Kazuko Ashizawa, Kim Berrall, Ang Blanchette, Nancy Braier, Maggie Buchanan, Paula Coyner, Kathryn M. Cummings, Michelle De Groot, Michael Donegan, Diana Espinal, Mary E. Forbes, Michael L. Ford, Sue Fulton, Carolyn Gosse, Dorrit Green, Liza Greene, Ted Hirsch, Danielle Knecht, James K. Lee, Matt Leech, Diane Henry Leipzig, Robin Luecke, Martha G. Mack, Liana Mahoney, Isabel McLean, Steve Morrison, Juliane K. Munson, Elizabeth B. Rasmussen, Ellen Sadler, Rachael L. Shaw, Sivan B. Sherman, Diane Auger Smith, Laura Tortorelli, Khara Turnbull, Miriam E. Vidaver, Michelle L. Warner, Catherine S. Whittington, Jeannette A. Williams.

We would like to extend special recognition to Program Directors Matthew Davis and Souzanne Wright, who were instrumental in the early development of this program.

Schools

We are truly grateful to the teachers, students, and administrators of the following schools for their willingness to field-test these materials and for their invaluable advice: Capitol View Elementary, Challenge Foundation Academy (IN), Community Academy Public Charter School, Lake Lure Classical Academy, Lepanto Elementary School, New Holland Core Knowledge Academy, Paramount School of Excellence, Pioneer Challenge Foundation Academy, PS 26R (the Carteret School), PS 30X (Wilton School), PS 50X (Clara Barton School), PS 96Q, PS 102X (Joseph O. Loretan), PS 104Q (the Bays Water), PS 214K (Michael Friedsam), PS 223Q (Lyndon B. Johnson School), PS 308K (Clara Cardwell), PS 333Q (Goldie Maple Academy), Sequoyah Elementary School, South Shore Charter Public School, Spartanburg Charter School, Steed Elementary School, Thomas Jefferson Classical Academy, Three Oaks Elementary, West Manor Elementary.

And a special thanks to the Pilot Coordinators, Anita Henderson, Yasmin Lugo-Hernandez, and Susan Smith, whose suggestions and day-to-day support to teachers using these materials in their classrooms were critical.

Design and Graphics Staff

Kelsie Harman
Liz Loewenstein
Bridget Moriarty
Lauren Pack

Consulting Project Management Services

ScribeConcepts.com

Additional Consulting Services

Erin Kist
Carolyn Pinkerton
Scott Ritchie
Kelina Summers

Notice and Disclaimer: The agency has developed these learning resources as a contingency option for school districts. These are optional resources intended to assist in the delivery of instructional materials in this time of public health crisis. Feedback will be gathered from educators and organizations across the state and will inform the continuous improvement of subsequent units and editions. School districts and charter schools retain the responsibility to educate their students and should consult with their legal counsel regarding compliance with applicable legal and constitutional requirements and prohibitions.

Given the timeline for development, errors are to be expected. If you find an error, please email us at texashomelearning@tea.texas.gov.

This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

You are free:

to Share—to copy, distribute, and transmit the work

to Remix—to adapt the work

Under the following conditions:

Attribution—You must attribute any adaptations of the work in the following manner:

This work is based on original works of Amplify Education, Inc. (amplify.com) and the Core Knowledge Foundation (coreknowledge.org) made available under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License. This does not in any way imply endorsement by those authors of this work.

Noncommercial—You may not use this work for commercial purposes.

Share Alike—If you alter, transform, or build upon this work, you may distribute the resulting work only under the same or similar license to this one.

With the understanding that:

For any reuse or distribution, you must make clear to others the license terms of this work. The best way to do this is with a link to this web page:

<https://creativecommons.org/licenses/by-nc-sa/4.0/>

© 2020 Amplify Education, Inc.
amplify.com

Trademarks and trade names are shown in this book strictly for illustrative and educational purposes and are the property of their respective owners. References herein should not be regarded as affecting the validity of said trademarks and trade names.

Credits

Every effort has been taken to trace and acknowledge copyrights. The editors tender their apologies for any accidental infringement where copyright has proved untraceable. They would be pleased to insert the appropriate acknowledgment in any subsequent edition of this publication. Trademarks and trade names are shown in this publication for illustrative purposes only and are the property of their respective owners. The references to trademarks and trade names given herein do not affect their validity.

All photographs are used under license from Shutterstock, Inc. unless otherwise noted.

POETRY

Grade 3 Lesson 1: "The Sparrow" by Paul Laurence Dunbar

With an excerpt from "A Jelly-Fish" by Marianne Moore



Introduction



We’ve been learning about different types of animals in this unit. Now we’re going to read a poem about a type of bird: a sparrow.

As we read today’s poem, listen for the story the speaker tells.

Read “The Sparrow” by Paul Laurence Dunbar
aloud.

The poem can be found on the program’s digital components site.

What does the sparrow do in the first stanza?

How does the speaker react?

What does the sparrow do in the first stanza?

The sparrow chirps and taps on the window to get the speaker's attention.

How does the speaker react?

The speaker does not pay attention to the bird.

Reading



The poem we read today uses **metaphor**.

A metaphor is a word or phrase for one thing that is used to refer to another thing in order to show or suggest that they are similar.

Let’s look at an example from the poem “A Jelly-Fish” by Marianne Moore. In these first two lines, she describes a jellyfish as:

*Visible, invisible,
A fluctuating charm,*

Moore is not saying that jellyfish are a literal charm. But by comparing a jellyfish to a charm, she is giving her readers an idea about it without just writing what the jellyfish looks like.

As people read the poem, their brains will use what they know about charms to put together their mental picture of how a jellyfish looks and moves.

Some poems, like “A Jelly-Fish,” directly compare one thing to another.

Other poems, like “The Sparrow,” use metaphor in a different way.

We are going to reread the poem. As we do, think about how the speaker describes the birds.

Read “The Sparrow” by Paul Laurence Dunbar
aloud.

The poem can be found on the program’s digital components site.

How does the speaker describe the birds in the second stanza?

What do the birds do after they land on “life’s window-sills”?

How does the speaker describe the birds in the second stanza?

“birds of peace and hope and love”

What do the birds do after they land on “life’s window-sills”?

They try to “ease our load,” or lighten the problems that people are dealing with.

How do people react to the birds?

How do people feel after the birds are gone?

How do people react to the birds?

They are too “deep engaged to let them in,” or too busy to pay attention to the birds.

How do people feel after the birds are gone?

They feel the loss of the birds.

Based on our discussion about the poem, what do you think the story of the birds symbolizes?

Based on our discussion about the poem, what do you think the story of the birds symbolizes?

Possible answers include that the birds symbolize moments of peace, hope, and love that come to people in their worst moments. People don't always notice these good moments until they are gone.

Below is a list of descriptions. Sort the descriptions into two categories: metaphor and not metaphor.

She is a rotten apple.

The classroom is a zoo.

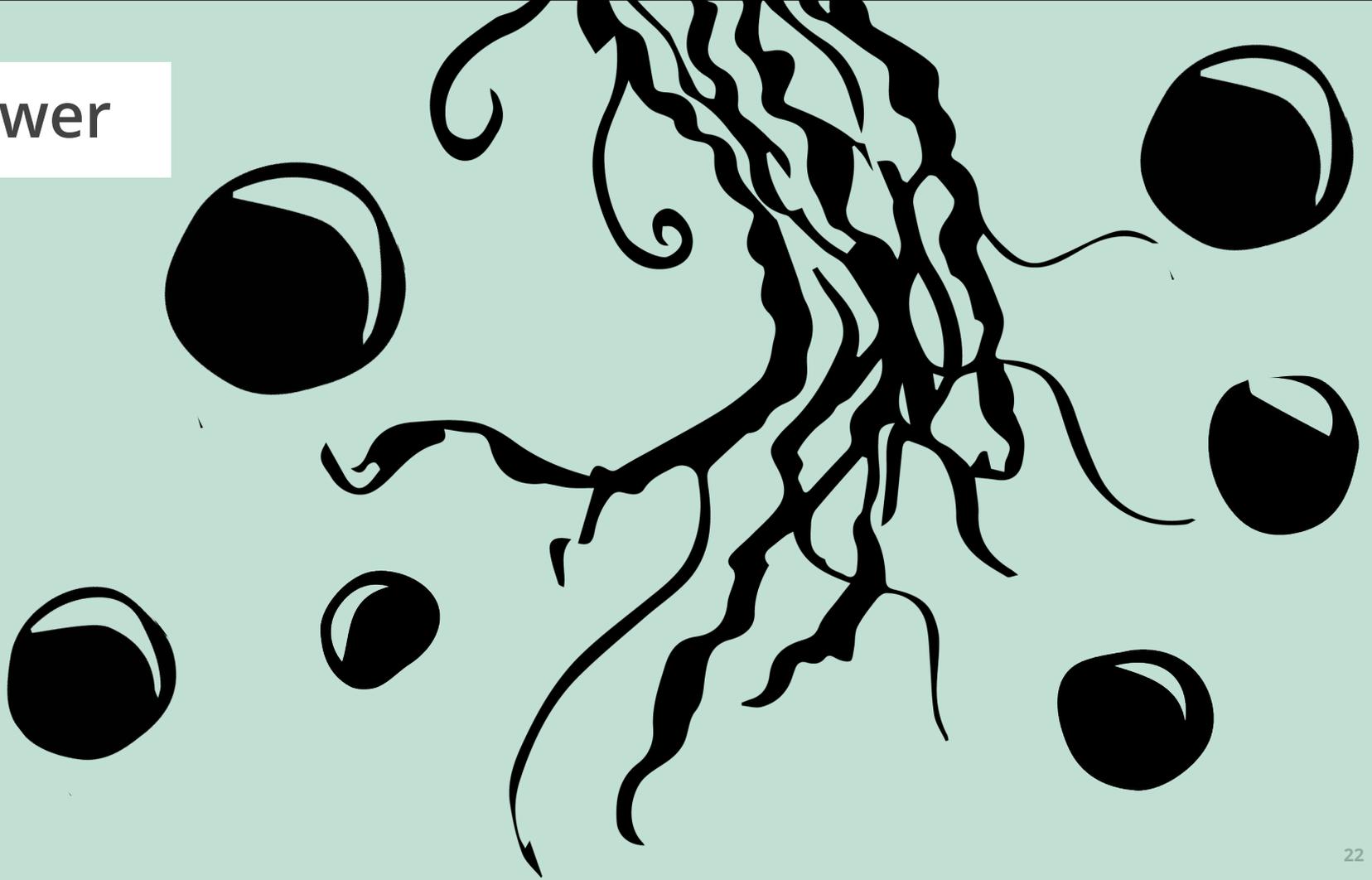
The leaf turned yellow.

My dog is muddy.

Saturdays are for playing games.

You are a star.

Answer



Metaphor

She is a rotten apple.

You are a star.

The classroom is a zoo.

Not Metaphor

My dog is muddy.

The leaf turned yellow.

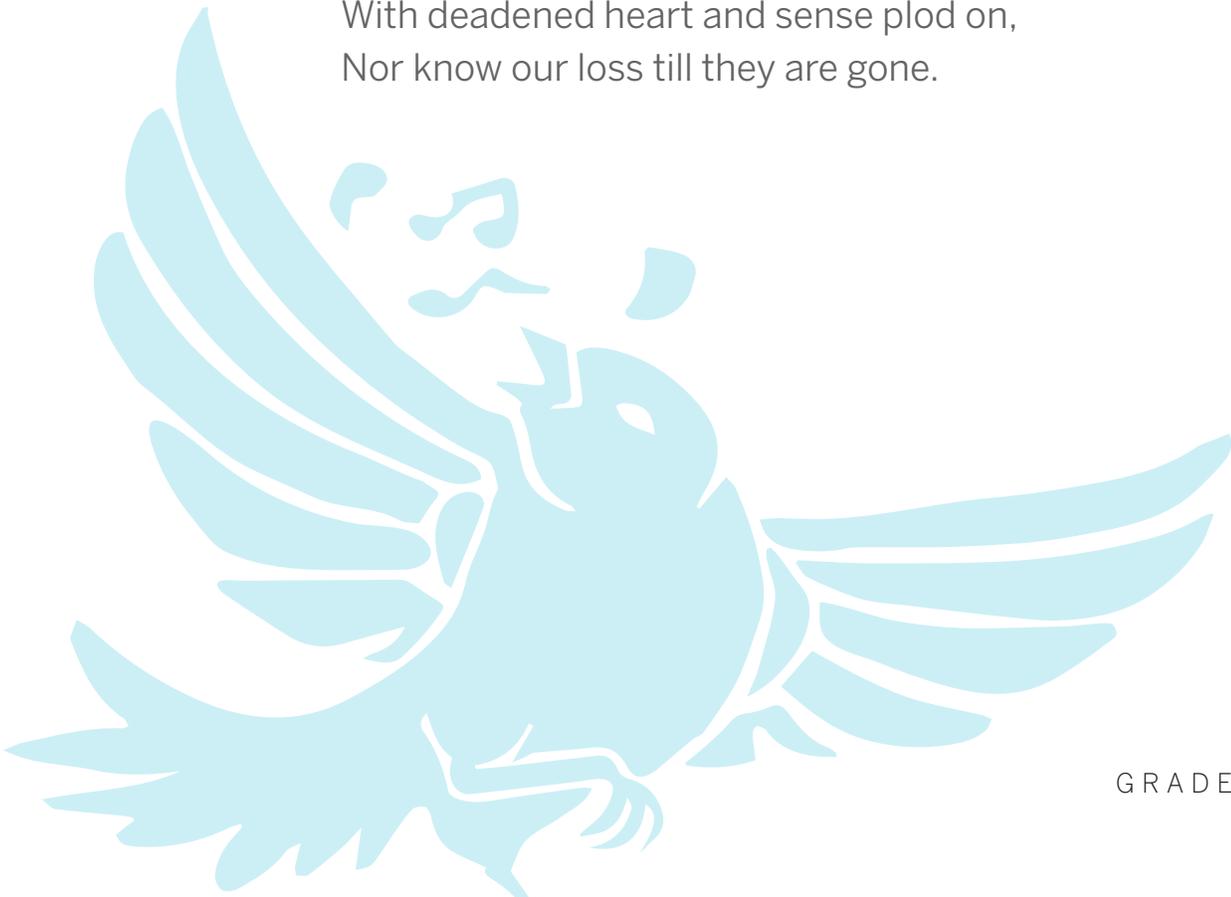
Saturdays are for playing games.

The Sparrow

Paul Laurence Dunbar

A little bird, with plumage brown,
Beside my window flutters down,
A moment chirps its little strain,
Ten taps upon my window-pane,
And chirps again, and hops along,
To call my notice to its song;
But I work on, nor heed its lay,
Till, in neglect, it flies away.

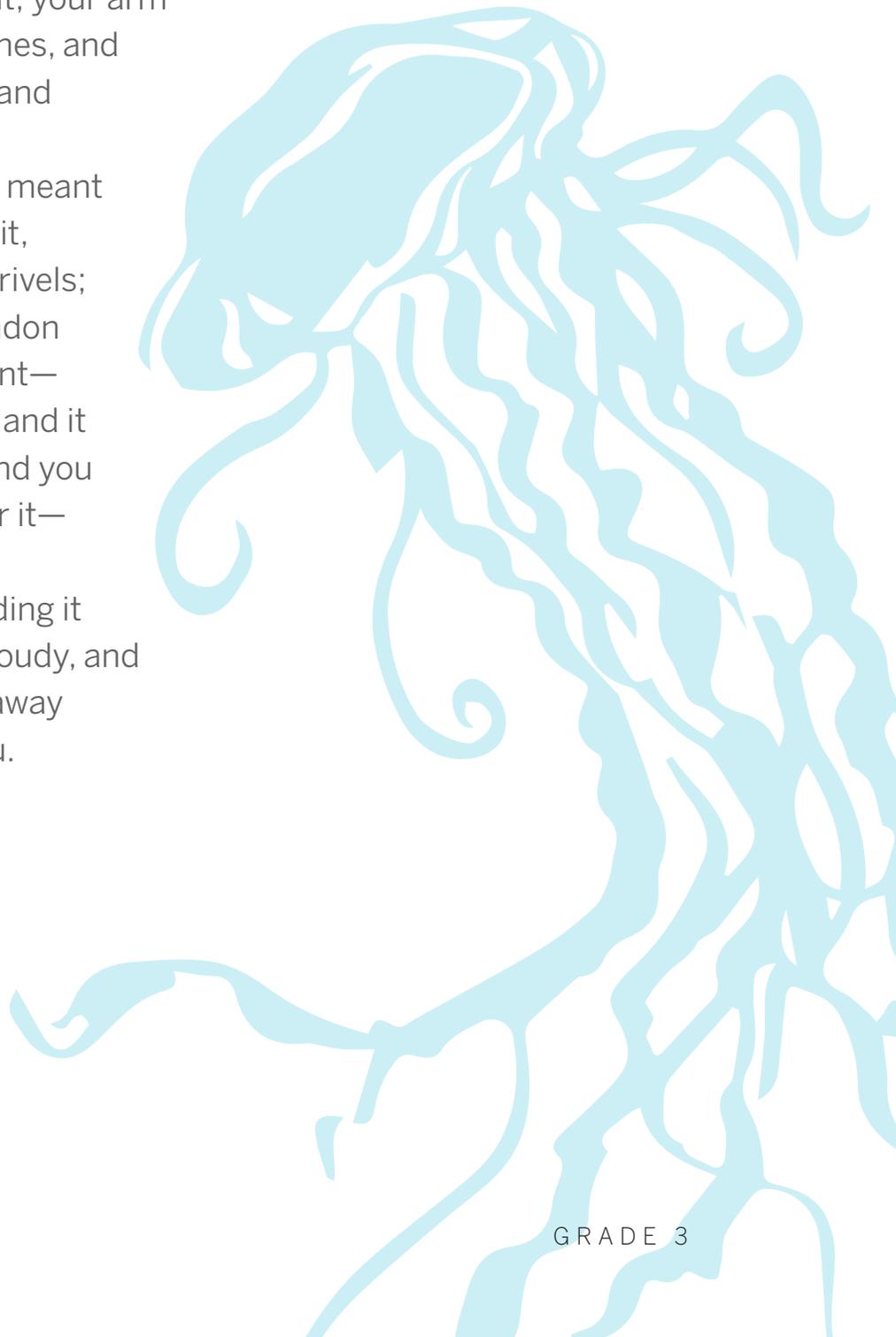
So birds of peace and hope and love
Come fluttering earthward from above,
To settle on life's window-sills,
And ease our load of earthly ills;
But we, in traffic's rush and din
Too deep engaged to let them in,
With deadened heart and sense plod on,
Nor know our loss till they are gone.



A Jelly-Fish

Marianne Moore

Visible, invisible,
A fluctuating charm,
An amber-colored amethyst
Inhabits it; your arm
Approaches, and
It opens and
It closes;
You have meant
To catch it,
And it shrivels;
You abandon
Your intent—
It opens, and it
Closes and you
Reach for it—
The blue
Surrounding it
Grows cloudy, and
It floats away
From you.



Welcome!

Grade 3, Unit 2

Scales, Feathers, and Fur: Animal Classification

In this unit, students will be introduced to the science of animal classification.

What's the story?

Students will **develop scientific skills** while they observe and practice **identifying important characteristics** of organisms and objects.

What will my student learn?

Students will have the opportunity to **engage in discussions** with their teacher and classmates, in which they will be asked to **respond based on observations** and **thinking** that occurred throughout their reading.

Students will focus on an **informational writing piece** that will extend their understanding of animal classification. They will also have many opportunities to **work with their peers**, **share ideas**, and **provide feedback** on their writing.

Conversation starters

Ask your student questions about the unit to promote discussion and continued learning:

1. How do scientists classify animals?
Follow up: Why do they classify animals?
2. What is a vertebrate? What is an invertebrate?
Follow up: What are some animals that are vertebrates? What are some animals that are invertebrates? How would your life be different if you did not have a backbone?
3. What are some characteristics of mammals?
4. Tell me about the changes that a frog goes through in its lifetime.
5. What were some of the discoveries that Jane Goodall made about chimps during her years in Africa.
6. If you could be any animal that you read about, what would it be?
Follow up: Why would you choose to be that animal?

Name: _____

Date: _____



Grade 3

Unit 2, Lesson 1 - Name two text features we found in our reading today. What text feature do you think is most important? Why?

Name: _____

Date: _____



Grade 3

Unit 2, Lesson 2 - How does the chart on page 17 of the Reader help your understanding of the classification of living things?

Name: _____

Date: _____



Grade 3

Unit 2, Lesson 3 – After listening to the Read-Aloud, explain why the backbone or spinal column of vertebrates is so important.

Name: _____

Date: _____



Grade 3

Unit 2, Lesson 4 – Name at least two details from the text on page 31 of the Reader that support the central idea that warm-blooded animals cool off in different ways.

Name: _____

Date: _____



Grade 3

Unit 2, Lesson 5 – Which text feature about fish did you find in your Reader today? What did you learn from that text feature?

Name: _____

Date: _____



Grade 3

Unit 2, Lesson 6 – Describe the transformation toads go through in their lifetimes. Try to use signal words to describe the sequence of their metamorphosis.

Name: _____

Date: _____



Grade 3

Unit 2, Lesson 7 – Think about the important points from the two texts that you read today about frogs. How are the two texts alike? How are the two texts different?

Name: _____

Date: _____



Grade 3

Unit 2, Lesson 8 – What does *nocturnal* mean in the following sentence?
“Like Anna, they are **nocturnal** hunters, hunting at night.”

Name: _____

Date: _____



Grade 3

Unit 2, Lesson 9 – Name at least one text feature the author included in Chapter 11 to help the reader. Explain how that text feature is helpful.

Name: _____

Date: _____



Grade 3

Unit 2, Lesson 10 – Bird bones have lots of **cavities** in them, which help make them lighter and able to fly. What are cavities?

Name: _____

Date: _____



Grade 3

Unit 2, Lesson 11 – Name one text feature you noticed in the Reader today. What did you learn about birds from this text feature?

Name: _____

Date: _____



Grade 3

Unit 2, Lesson 12 – Highlight the clue word used to signal a contrast or comparison of mammals in each of the following sentences:

1. Like birds, mammals, such as this horse, have a high metabolism.
2. Both of these cat species are on the list of endangered species.
3. Bats may seem like birds; however, they are not because they have no feathers.

Name: _____

Date: _____



Grade 3

Unit 2, Lesson 13 – If you could only tell your parent/guardian one thing about Jane Goodall, what would it be? Write the central idea and at least one supporting detail from the text/video.

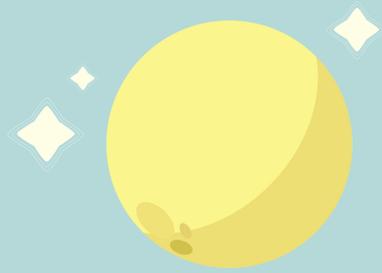
Name: _____

Date: _____



Grade 3

Unit 2, Lesson 14 – Name one text feature you discovered as you read “Scientists Who Classify Animals.” Explain what information you learned from that text feature.



Vocabulary

Grade 3 Unit 2: Scales, Feathers, and Fur: Animal Classification



Alphabetizing

Introduction: Alphabetizing



To **alphabetize** words, put them in order based on the alphabet. When we alphabetize something, we say it is in *alphabetical order*.

Let's alphabetize these words using the first letter:

nectar and **predator**

N comes before **p** in the alphabet, so **nectar** comes before **predator** when we put these words in alphabetical order.

nectar

predator

When we alphabetize words that start with the same first letter, we alphabetize them using the second letter:

aquatic and adapt

The second letter of **aquatic** is **q**.

The second letter of **adapt** is **d**.

Let's look at the alphabet to see which letter appears first.

A B C **D** E F G H I J K L M N O P **Q** R S T U V W X Y Z

D comes before **Q** in the alphabet, so **adapt** comes before **aquatic** when we alphabetize these words to the second letter:

adapt

aquatic

Let's Try It Together!



Look at these words from our domain on animal classification:

herbivore

habitat

To alphabetize them, remember to look at the second letter in the word. Turn to a partner and whisper the word that comes first when we alphabetize.

Hold up one finger if you think **habitat** is the first word.

Hold up five fingers if you think **herbivore** is the first word.

Since **a** appears before **e** in the alphabet, we would put the word **habitat** before the word **herbivore**.

habitat

herbivore

Now they're in alphabetical order!

Now you try one with a partner. Which word would come first alphabetically?

huddle

habitat

Raise one finger if you think **huddle** comes first alphabetically.

Raise five fingers if you think **habitat** comes first alphabetically.

Did you remember the steps?

1. Find the second letter of each word.

huddle

habitat

2. Decide which letter appears first on the alphabet chart.

A B C D E F G H I J K L M N O P Q R S T **U** V W X Y Z

3. Put the words in alphabetical order.

habitat

huddle

Now try one by yourself!



Which word comes first alphabetically?

primate

plumage

Write the words in alphabetical order.

Let's try with three words. Put these words in alphabetical order:

characteristic

classify

carnivore

Write the words in alphabetical order.

Answers



plumage

primate

carnivore
characteristic
classify