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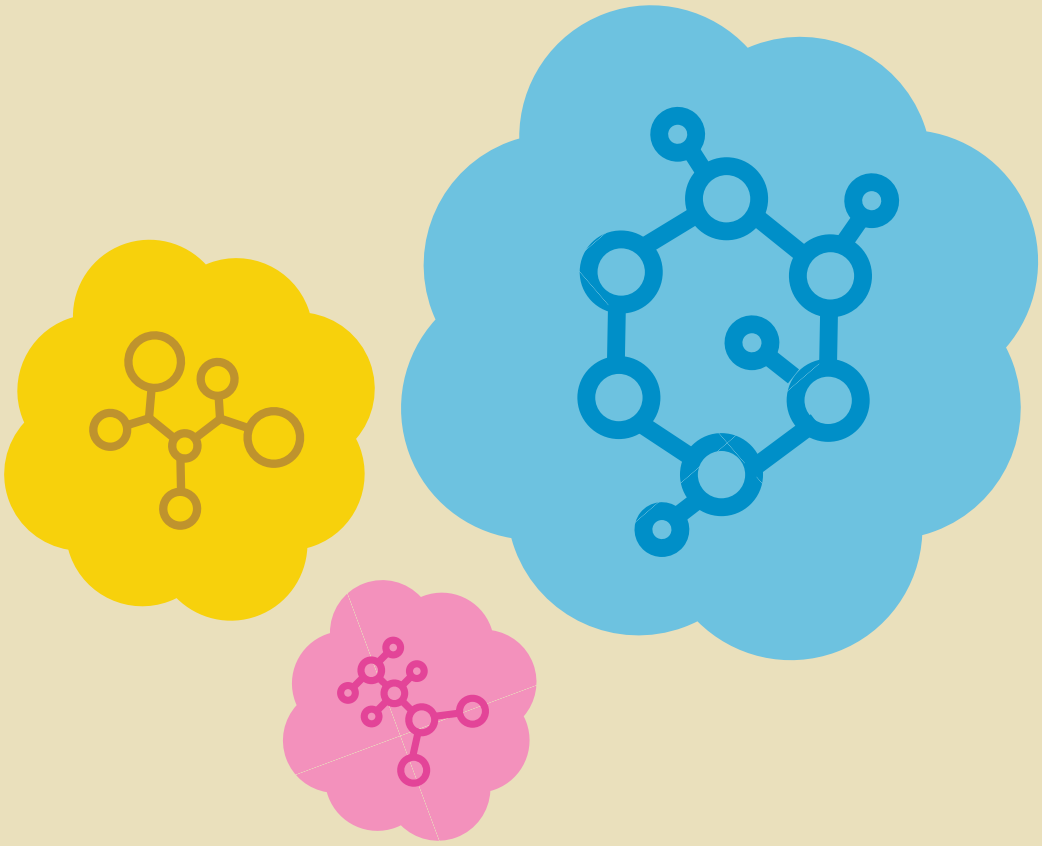
ELEMENTARY LITERACY PROGRAM

ENGLISH



Grade 2

Knowledge 9 | Teacher Guide

The Human Body: Building Blocks and Nutrition

Grade 2 | Knowledge 9

The Human Body:
Building Blocks and Nutrition

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.**

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Grade 2 | Knowledge 9

Contents

THE HUMAN BODY: BUILDING BLOCKS AND NUTRITION

Grade 2 | Knowledge 9

Introduction

This introduction includes the necessary background information to be used in teaching *The Human Body: Building Blocks and Nutrition* domain. The Teacher Guide for *The Human Body: Building Blocks and Nutrition* contains nine daily lessons, each of which is composed of two distinct parts, so that the lesson may be divided into smaller chunks of time and presented at different intervals during the day. Each entire lesson will require a total of sixty minutes.

This domain includes a two-day Pausing Point after Lesson 4 when students have covered the topic of organs. At the end of the domain, a two-day Domain Review, a Domain Assessment, and Culminating Activities are included to allow time to review, reinforce, assess, and remediate content knowledge. You should spend no more than fifteen days total on this domain.

DOMAIN COMPONENTS

Along with this Teacher Guide, you will need:

- Flip Book for *The Human Body: Building Blocks and Nutrition*
- Image Cards for *The Human Body: Building Blocks and Nutrition*
- Activity Book for *The Human Body: Building Blocks and Nutrition*
- Digital Components for *The Human Body: Building Blocks and Nutrition*

Additional resources that you may wish to integrate into your classroom instruction are:

- Trade Book Guide for *Baby Doctor's Guide to Anatomy and Physiology* by Baby Professor
- Read-Aloud Videos for *The Human Body: Building Blocks and Nutrition*

All domain components materials can also be found on the program's digital components site.

WHY THE HUMAN BODY: BUILDING BLOCKS AND NUTRITION IS IMPORTANT

This domain covers a number of topics regarding the human body. This domain first covers concepts regarding cells and how cells form the building blocks of life on Earth. Students are then taught how collections of cells form tissues, and tissues form organs, and finally how organs work within the various body systems. In addition, students are taught about Anton van Leeuwenhoek and his work with the microscope and his discovery of the tiny one-celled bacteria.

Students will then hear about the digestive and excretory systems. They will learn the fundamental parts and functions of these two body systems. The narrator of these Read-Alouds is a nutritionist named Nick Nutri, who reinforces basic facts that students will be learning.

The remainder of this domain focuses on the importance of good nutrition and how to make good choices in order to eat a well-balanced diet. Students will be taught five keys to good health—eat well, exercise, sleep, keep clean, and have regular checkups.

This domain also provides opportunities for students to build content knowledge and draw connections to the science subject area, but it does not explicitly teach the Texas Essential Knowledge and Skills standards for 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 Organisms and Environments, as well as Scientific Investigation and Reasoning from the science discipline.

WHAT STUDENTS HAVE ALREADY LEARNED

The following domains, and the specific core content that was targeted in those domains, are particularly relevant to the Read-Alouds students will hear in *The Human Body: Building Blocks and Nutrition*. This background knowledge will greatly enhance students' understanding of the Read-Alouds they are about to enjoy:

The Five Senses (Kindergarten)

The Human Body (Grade 1)

CORE CONTENT OBJECTIVES ADDRESSED IN THIS DOMAIN

Students will:

- Identify the five senses and associated body parts
- Identify the skeletal, muscular, circulatory, nervous, digestive, and excretory systems as important systems in the human body
- Describe the significant contributions of Anton van Leeuwenhoek
- Explain that all living things are made of microscopic cells

- Describe the relationship between cells, tissues, organs, and systems
- Identify important components of the digestive system and their functions
- Describe the process of nourishing the body from the time food is taken into the mouth until waste is removed from the body
- Identify important components of the excretory system and their functions
- Describe how the digestive and excretory systems work together
- Explain the importance of vitamins and minerals to the body
- Explain the importance of eating a balanced diet
- Plan a daily balanced diet

CORE VOCABULARY FOR THE HUMAN BODY: BUILDING BLOCKS AND NUTRITION

The following list contains all of the core vocabulary words in *The Human Body: Building Blocks and Nutrition* in the forms in which they appear in the domain. These words appear in the Read-Alouds or, in some instances, in the "Introducing the Read-Aloud" section at the beginning of the lesson. Boldfaced words in the list have an associated Word Work activity. The inclusion of the words on this list does not mean that students are immediately expected to be able to use all of these words on their own. However, through repeated exposure throughout all lessons, they should acquire a good understanding of most of these words and begin to use some of them in conversation.

Lesson 1 nutrients nutrition nutritionist organs **systems** vaccinations	**Lesson 4** collapse kidneys liver **nourish** transplant	**Lesson 7** carbohydrates **essential** fats minerals proteins
Lesson 2 bacteria lens magnifies microscope **observations**	**Lesson 5** **absorb** esophagus filtering saliva villi	**Lesson 8** fiber moderation scan **variety** well-balanced diet
Lesson 3 cells **functions** microscopic stimulus tissue	**Lesson 6** bladder excrete regulate sweat **toxic**	**Lesson 9** calories network **recovery** terms windpipe

WRITING

In this domain, students will create several entries for a *My Human Body Journal* (Lessons 1, 2, 3, 5, 6, 7, and 9). These journal entries may be added to students' writing portfolios to showcase student writing within and across domains.

LESSON

1

THE HUMAN BODY:
BUILDING BLOCKS AND NUTRITION

The Amazing Human Body

PRIMARY FOCUS OF LESSON

Speaking and Listening

Students will share information and ideas that focus on prior knowledge of the human body and of nutrition, speaking clearly at an appropriate pace and using the conventions of language.

TEKS 2.1.C; TEKS 2.6.E

Reading

Students will explain why the author calls the human body "the human machine," working collaboratively by following agreed-upon rules for discussion.

TEKS 2.1.D; TEKS 2.6.G

Language

Students will demonstrate an understanding of the Tier 2 word *systems*.

TEKS 2.3.B

Writing

Students will write an entry in the *My Human Body Journal*, describing their five senses.

TEKS 2.7.B

FORMATIVE ASSESSMENT

Activity Page 1.1

My Human Body Journal Students will write an entry in the *My Human Body Journal*, describing their five senses.

TEKS 2.7.B

TEKS 2.1.C Share information and ideas that focus on the topic under discussion, speaking clearly at an appropriate pace and using the conventions of language; **TEKS 2.6.E** Make connections to personal experiences, ideas in other texts, and society; **TEKS 2.1.D** Work collaboratively with others by following agreed-upon rules for discussion, including listening to others, speaking when recognized, making appropriate contributions, and building on the ideas of others; **TEKS 2.6.G** Evaluate details read to determine key ideas; **TEKS 2.3.B** Use context within and beyond a sentence to determine the meaning of unfamiliar words; **TEKS 2.7.B** Write brief comments on literary or informational texts that demonstrate an understanding of the text.

LESSON AT A GLANCE

	Grouping	Time	Materials
Introducing the Read-Aloud (10 min.)			
Core Connections	Whole Group	10 min.	❑ Poster 1 (Chart of the Human Body) (Flip Book), ❑ Poster 2 (Human Body Systems) (Flip Book)
Domain Introduction			
Read-Aloud (30 min.)			
Purpose for Listening	Whole Group	30 min.	❑ world map or globe ❑ Poster 2 (Human Body Systems) (Flip Book) ❑ Flip Book: 1A-1–1A-13
"The Amazing Human Body"			
Comprehension Questions			
Word Work: *Systems*			
This is a good opportunity to take a break.			
Application (20 min.)			
My Human Body Journal	Independent/ Whole Group	20 min.	❑ Activity Page 1.1
Sayings and Phrases: "Keep Your Fingers Crossed"			
Take-Home Material			
Family Letter			❑ Activity Page 1.2

ADVANCE PREPARATION

Note to Teacher

These Read-Alouds are told from the perspective of a fictional nutritionist named Nick Nutri. Nick Nutri also references Dr. Welbody, the fictional character who told the Read-Alouds in the Kindergarten and Grade 1 domains related to the human body.

CORE VOCABULARY

nutrients, n. nourishing substances necessary for growth and the maintenance of life
Example: Carbohydrates, proteins, and fats are all important nutrients.
Variation(s): nutrient

nutrition, n. the process of supplying the body with the proper foods for growth and good health
Example: Eating junk food does not provide the nutrition needed for healthy human beings.
Variation(s): none

nutritionist, n. someone who gives advice about diet as it relates to good health and fitness
Example: When I was a baby, a nutritionist helped my mother know what to feed me so that I would grow into a strong and healthy child.
Variation(s): nutritionists

organs, n. internal body parts that perform specific jobs within body systems
Example: Your heart, lungs, and kidneys are examples of organs.
Variation(s): organ

systems, n. sets of connected parts that work together to perform a job
Example: The digestive and excretory systems both help get rid of bodily waste.
Variation(s): system

vaccinations, n. the process of getting vaccines to prevent diseases
Example: Vaccinations for chickenpox have helped stop the spread of this very contagious disease.
Variation(s): vaccination

Vocabulary Chart for "The Amazing Human Body"

Type	Tier 3 Domain-Specific Words	Tier 2 General Academic Words	Tier 1 Everyday Speech Words
Vocabulary	nutrients *(nutriente)* nutrition *(nutrición)* nutritionist *(nutricionista)* vaccinations	systems *(sistemas)*	
Multiple Meaning	organs		
Sayings and Phrases	goes hand-in-hand keeping your fingers crossed		

Start Lesson

Lesson 1: The Amazing Human Body

Introducing the Read-Aloud

10M

Speaking and Listening: Students will share information and ideas that focus on prior knowledge of the human body and of nutrition, speaking clearly at an appropriate pace and using the conventions of language.

TEKS 2.1.C; TEKS 2.6.E

CORE CONNECTIONS (5 MIN.)

- Point to Poster 1 (Chart of the Human Body) and ask students what it depicts. *(the human body)*

Check for Understanding

Identification: What items on the chart do you recognize? Use one complete sentence to tell something about the item you recognize. **TEKS 2.1.C**

- Point to Poster 2 and have students name any of the different body systems they know or remember from *The Human Body* domain in Grade 1. *(skeletal, muscular, circulatory, nervous, digestive, and excretory)*

DOMAIN INTRODUCTION (5 MIN.)

- Have students define the word *healthy*. *(not infected with disease; things that promote or indicate good health)*
- Ask students to raise their hands if they like to eat.
- Explain that what we eat makes a big difference in how healthy our bodies are.
- Explain that this domain will focus on the best foods to eat and how the body processes those foods to keep us healthy.

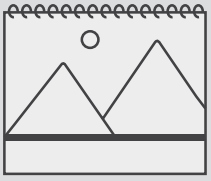
Challenge

Students who participated in the program in Kindergarten and Grade 1 may recall discussing the five senses from *The Five Senses* domain in Kindergarten, and the five major body systems (skeletal, muscular, digestive, circulatory, and nervous) from *The Human Body* domain in Grade 1. Have them share what they remember from those domains.

Support

If necessary, prompt students with the following example: "The lungs help us breathe."

Flip Book
Poster 1, Poster 2



TEKS 2.1.C Share information and ideas that focus on the topic under discussion, speaking clearly at an appropriate pace and using the conventions of language; **TEKS 2.6.E** Make connections to personal experiences, ideas in other texts, and society.

Lesson 1: The Amazing Human Body

Read-Aloud

30M

Reading: Students will explain why the author calls the human body "the human machine," working collaboratively by following agreed-upon rules for discussion.

TEKS 2.1.D; TEKS 2.6.G

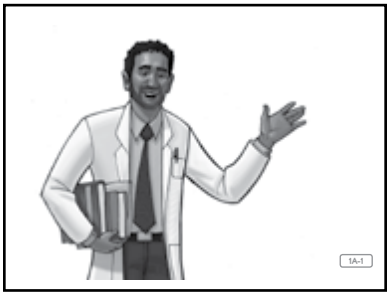
Language: Students will demonstrate an understanding of the Tier 2 word *systems*.

TEKS 2.3.B

PURPOSE FOR LISTENING

- Tell students to listen carefully to find out why the human body is sometimes called the human machine.

"THE AMAZING HUMAN BODY" (15 MIN.)



Show Image 1A-1: Nick Nutri presents
Hello, everybody. My name is Nick Nutri, and I am a **nutritionist**. Does anyone know what that means? Nutritionists study **nutrition**, or in other words, the ways in which our bodies get the food they need to grow and stay healthy. We give advice about diet and how a person's diet affects their health.

Nutritionists learn what is in our food and how our bodies use it. I work with doctors to help children understand what they need to do to take care of their bodies.

One of the first things a nutritionist studies is the human body. It's important to understand how the body works in order to know how to keep it healthy. Dr. Welbody tells me that you already know a lot about the human body.

Stand up and let's take a look at the body parts that we can see.

Support

Review the meaning of the word *healthy*.

Support

Explain to students who did not have this program in Kindergarten or Grade 1 that Dr. Welbody was the doctor in the Read-Alouds in those grades.

TEKS 2.1.D Work collaboratively with others by following agreed-upon rules for discussion, including listening to others, speaking when recognized, making appropriate contributions, and building on the ideas of others; **TEKS 2.6.G** Evaluate details read to determine key ideas; **TEKS 2.3.B** Use context within and beyond a sentence to determine the meaning of unfamiliar words.

Show Image 1A-2: Skin is for feeling
Where's your skin? It's all over you, isn't it? Skin covers your head, your face, your neck, your chest, your tummy, your bottom, arms, legs, hands, and feet—everything! Your skin is a stretchy, waterproof covering that protects you from germs and helps control your body temperature.

Just beneath your skin are tiny little receptors, part of your nervous system, that travel to your brain. *These receptors, or nerve endings, react to changes, like heat and cold in the body, and send messages to the brain.* You can't see them, but they tell your brain what is touching your skin and your brain reacts to the touch. Some touches, like petting a dog, can be very positive, while others, like touching a hot stove, can be quite painful.

Touch is one of your five senses. Who can name the other four senses that help you get information about your surroundings? *[Pause for suggestions: taste, smell, sight, hearing.]* Oh, Dr. Welbody was right. You do know a lot!

Challenge

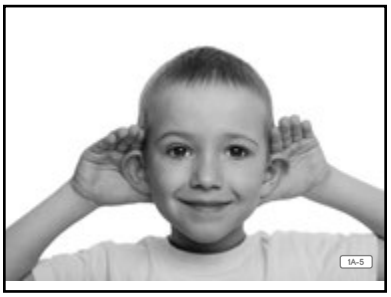
Point out that the word *waterproof* is a compound word, or one word made up of two separate words. Have students identify the two word parts of *waterproof* and have them define the word based on what they know of the individual word components.

Show Image 1A-3: Nose and mouth are for smelling and tasting
Touch, taste, smell, sight, and hearing are your five senses. Let's sit down and find out what you already know about your body.

Where is your sense of taste located? Right—in your mouth! Your tongue is covered with taste buds that allow you to taste the differences between sweet, salty, bitter, and sour foods. They also warn you of danger from hot foods or other things that may harm your body.

Did you know that your sense of smell is connected to your sense of taste? That's why some things don't taste the same to you when you have a cold. What part of your body is affected the most when you have the sniffles? Yes, your nose! And look how close your nose is to your mouth. It makes sense that they are connected, doesn't it?

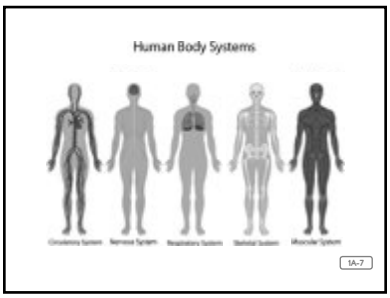
Show Image 1A-4: Eyes are for seeing
Just above your nose are your eyes. Which of your senses do they control? Sight, of course! Your eyes are responsible for what you see. Vision *or your ability to see* lets you know the size and shape of an object, how near or far it is, and how fast it is moving. That's a lot of information. Some people have problems seeing correctly, but fortunately they are able to have many of these problems corrected by wearing glasses or contact lenses.



Show Image 1A-5: Ears are for hearing
Okay, we've named four of the five senses—touch, taste, smell, and sight. The last one is hearing. What do you use to hear? Your ears, of course! Your ears catch and change sound waves into nerve signals that travel to your brain. Your ears not only help you hear, but they also help you keep your balance. Some people are born deaf, *or unable to hear* and some others develop deafness later in life. Hearing aids often help them hear better.

Show Image 1A-6: We all have bodies
Look around you. You all have skin. You all have eyes and noses and mouths and ears. But do you all look the same? Certainly not! You may look different on the outside—different colors of skin, hair, and eyes; different heights and weights—but what lies underneath your skin is all pretty much the same.

You have already learned that your body is a collection of many different **systems**, *or sets of connected parts that work together* each with its own job to do. Does anyone remember the names of any body systems? *[Pause for suggestions.]* What is your skin wrapped around? What gives your body its shape? Your skeleton!

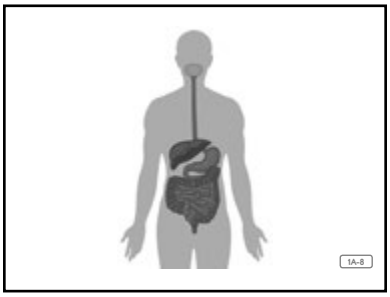


Show Image 1A-7: The circulatory, nervous, respiratory, skeletal, and muscular systems
Your skeleton is a part of the skeletal system, including your bones and joints. It supports your body and protects your body's internal, or inside, **organs**. *Organs are body parts that do specific jobs for the body, such as the heart, lungs, brain, liver, and so on.* Can you find your ribs? Your tough rib bones cover your soft heart and lungs. Together with your muscular system, your skeletal system helps your body move. The respiratory system is in charge of how your body breathes air into your lungs to supply your body with oxygen. The circulatory system pumps blood from the heart and carries it to all parts of your body. The nervous system is the body's main control center, carrying messages to and from the brain. *The word* nervous*—when it's used to talk about the body's systems—means having to do with nerves.*

Do any of these systems sound familiar to you? *[Have student volunteers point to the various systems under discussion.]*

Support

The word *nervous* can also mean worried or anxious.



Show Image 1A-8: The digestive system
Although all of the body systems are important, the two that interest me the most are the digestive system and the excretory system. That's because they are the ones most responsible for the food that enters and leaves your body. You get **nutrients** *or substances that are necessary for your body to grow* from the food you eat, and I want to make sure that your body gets the nutrients it needs. The digestive system carries food to your stomach and small intestines, where it breaks down food into fuel to give the body the energy it needs to live. Food that your body can't digest moves into the large intestine and is released as solid waste. The excretory system removes liquid waste from the body. We are going to talk about these two systems a lot more another day.

Show Image 1A-9: The human machine
People often compare the human body to a machine with lots of movable parts working together. *Do you think the human body is like a machine? If so, how is it like a machine, and how is it different?*

Show Image 1A-10: The human machine breaks down
Most of the time your body systems work well together but, just like machines, sometimes things break down. Germs may get inside your body and cause illnesses. The body fights off germs within the body, but sometimes the body's defenses are not enough.

As a baby, you may have received **vaccinations** to help prevent diseases that were once common among children. *Vaccinations are often called shots.* Vaccines, or the medicine in a vaccination, are inactive or weakened germs, harmless to people, that are often injected *or pumped* into your body. These dead or weakened germs trick the body into thinking that it is becoming infected, or getting sick, so the body figures out how to fight off that infection. The body then knows how to fight off any infections of that kind in the future. If you were vaccinated against diseases like measles or mumps, you will likely not get those diseases.

Show Image 1A-11: Taking care of your body
The human body is truly an amazing machine. You carry your body with you wherever you go. Whether you are reading, eating, playing ball, or sleeping, your body continues to work to keep you healthy. It is important for you to do your part, too. What are some of the things that you can do to take care of your body? *[Pause for suggestions.]*

Germs are everywhere. How can you help your body fight off germs? Washing your hands with soap and water is one of the most important things that you can do. Make sure that you wash often, throughout every day and especially before you eat. Clean the rest of your body with regular baths and shampoos, too. Cleanliness *or keeping a clean body* is very important to your body's health.

How often have you heard an adult say, "Eat your fruits and veggies?" I told you that I am a nutritionist. That means that good nutrition is very important to me. *What is nutrition?* (the process of providing the body with the food it needs to grow and stay healthy) Eating the right foods is important for good health and that means eating lots of fruits and veggies. It is so important that your body gets the proper nutrients to keep its marvelous machine running smoothly.

Show Image 1A-12: The importance of exercise

Exercise goes hand-in-hand with healthy eating. The food you eat supplies your body with the energy it needs to exercise its muscles. By walking, running, and playing ball, you help your body stay lean and fit.

Getting enough rest and having regular checkups with health care professionals *like doctors and nurses* are both important, as well. In the following lessons, we will talk about all of these things. Taking care of your body is more than just keeping your fingers crossed and hoping you will be healthy. By the time you finish these lessons, you will know a lot of ways you can help your body stay strong and healthy.

Show Image 1A-13: Anton van Leeuwenhoek
Next time we're together I'm going to tell you about one of my heroes—a man named Anton van Leeuwenhoek [/lae*vən*hook/]. Anton van Leeuwenhoek is from a country called Holland. This means he was Dutch, which is what you call someone from Holland. Today, Holland is part of the country known as the Netherlands. *[Point to the Netherlands on a world map or globe.]* Anton was named for where he lived in Holland. The name of his street was Lion's Gate and his house stood on the corner. The word for lion in Dutch is *leeuw* [/lae/] and the word for corner is *hoek* [/hook/]; thus, his name is Anton who lives on the corner of Lion's Gate. Naming people in such a way was not uncommon when Anton was born, nearly four hundred years ago. I can't wait to tell you why he is my hero, but I'll save that for next time.

COMPREHENSION QUESTIONS (10 MIN.)

1. **Inferential.** When you eat a sandwich, which body senses do you use, and what are the body parts associated with each sense? *(Sight: eyes see the sandwich; smell: nose smells the sandwich; taste: mouth or tongue tastes the sandwich; hearing: ears hear the sandwich being eaten; touch: hands feel the sandwich.)*
   - **Literal.** Sometimes when you have a cold, you lose your appetite. What other sense, working together with your sense of taste, could affect your appetite? *(sense of smell)*
2. **Literal.** What is the name of the body system that processes the food that you eat? *(digestive)* What is the name of the system that removes liquid waste from your body? *(excretory)* What are the other body systems? *(skeletal, muscular, circulatory, and nervous systems)*
3. **Inferential.** Why does a nutritionist need to understand the human body? *(Answers may vary. Students should understand that the body is a complex machine that needs certain foods for the maintenance of its parts; a nutritionist needs to understand the relationship between the two.)*

Support

Refer students to Poster 2 (Human Body Systems) as they answer question 1.

ENGLISH LANGUAGE LEARNERS

Speaking and Listening

Supporting Own Opinions

Beginning
Students will support their opinions by providing good reasons and some evidence from the Read-Aloud or relevant background knowledge.

Intermediate
Students will support their opinions by providing good reasons and increasingly detailed evidence from the Read-Aloud or relevant background knowledge.

Advanced/ Advanced High
Students will support their opinions by providing good reasons and detailed evidence from the Read-Aloud or relevant background knowledge.

ELPS 3.G; ELPS 4.J

Support

Refer students to Poster 2 (Human Body Systems) as they complete the statements.

Check for Understanding

Turn and Talk: Turn to your partner and discuss why the author calls the human body "the human machine." Is this a good name for the human body? Why or why not? [Have several students share their responses with the class. *(Answers may vary.)*] **TEKS 2.1.D**

WORD WORK: SYSTEMS (5 MIN.)

1. In the Read-Aloud you heard, "You have already learned that your body is a collection of many different systems, each with its own job to do."
2. Say the word *systems* with me.
3. Systems are sets of interconnecting parts working together.
4. The muscular and skeletal systems work together to help your body move.
5. Which one of the human body systems do you think is the most important? Use the word *system* or *systems* when you tell us why you chose that particular system. [Ask two or three students. If necessary, guide and/or rephrase students' responses: "I think the respiratory system is the most important because . . . "]
6. What's the word we've been talking about?

Use a Fill-in-the-Blank activity for follow-up. I am going to read five sentences, each one describing a different body system. You will have to listen closely for clues and then complete each sentence by filling in the blank with the name of the correct body system.

- Hundreds of skeletal bones make up the _____. *(skeletal system)*
- Blood circulates, or travels, through the body as part of the _____. *(circulatory system)*
- Food is digested, or broken down, in the _____. *(digestive system)*
- Muscles expand and contract, working as part of the _____. *(muscular system)*
- Nerves travel up and down the spinal cord to the brain, the center of the _____. *(nervous system)*

TEKS 2.1.D Work collaboratively with others by following agreed-upon rules for discussion, including listening to others, speaking when recognized, making appropriate contributions, and building on the ideas of others.

Lesson 1: The Amazing Human Body

Application

20M

Writing: Students will write an entry in the *My Human Body Journal*, describing their five senses.

TEKS 2.7.B

MY HUMAN BODY JOURNAL (15 MIN.)

- Tell students that they are each going to create a *My Human Body Journal* to record what they know and what they learn about the human body.
- Explain that students will use Activity Page 1.1 to write a sentence about each of the five senses.

Check for Understanding

Recall: What are the five senses? *(touch, taste, smell, sight, and hearing)*

With your partner, discuss one thing about each of the five senses. Listen to your partner's statement, and then build on that statement to say something else about that senses. For example, your partner might say, "I see with my eyes." You could respond "Some people have trouble with their eyesight and need glasses to correct the problem."

- Have students work independently to complete Activity Page 1.1.
- Have several students share their journal entries with the class.
- Save the journal pages to assemble into individual student journals at the end of the domain, but consider making copies of the pages for inclusion in the students' writing portfolios.

TEKS 2.7.B Write brief comments on literary or informational texts that demonstrate an understanding of the text.

Activity Page 1.1

Support

Write several sentence starters on the board/chart paper, such as "I use my eyes to . . ." or "My sense of sight helps me . . ."

ENGLISH LANGUAGE LEARNERS

Writing

Writing Informational Text

Beginning
Allow students to dictate their journal entries to an adult.

Intermediate
Allow students to collaborate with a peer to write their journal entries.

Advanced/ Advanced High
Have students work independently to write their journal entries.

ELPS 5.F

SAYINGS AND PHRASES: "KEEP YOUR FINGERS CROSSED" (5 MIN.)

Support

Be sure students understand the difference between the literal meanings of the words and their implied or figurative meanings.

- Remind students that 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. While some proverbs do have literal meanings—that is, they mean exactly what they say—many proverbs have a richer meaning beyond the literal level.
- Ask students if they have ever heard anyone say about an event to "keep your fingers crossed" or "I'm keeping my fingers crossed." Explain that this proverb is another way of saying you hope for a good result from some future event.
- Ask students if they have ever hoped for good weather for a special event, like field day or some outdoor activity. Tell students that instead of saying, "I hope it doesn't rain on field day," they could say, "I'm keeping my fingers crossed that it doesn't rain on field day."
- Give students the opportunity to share their hopes, and encourage them to use the saying. Remind them to share their experiences, using appropriate facts and relevant, descriptive details. Remind them to speak audibly in coherent sentences.
- Remind students that in today's Read-Aloud, Nick Nutri says, "Taking care of your body is more than just keeping your fingers crossed . . ."
- Have students explain what Nick Nutri means when he says this. *(Nick Nutri means that it takes more than luck to keep your body healthy.)*
- Look for more opportunities to use this saying in the classroom.

End of Lesson

Lesson 1: The Amazing Human Body

Take-Home Material

Activity Page 1.2

FAMILY LETTER

- Send home Activity Page 1.2.

LESSON

2

THE HUMAN BODY: BUILDING BLOCKS AND NUTRITION

Anton van Leeuwenhoek

PRIMARY FOCUS OF LESSON

Speaking and Listening

Students will review what they learned about the human body and the five senses.

TEKS 2.1.D

Reading

Students will describe Anton van Leeuwenhoek's important discovery and will make inferences and use evidence to support understanding.

TEKS 2.6.F; TEKS 2.6.G

Language

Students will demonstrate an understanding of the Tier 2 word *observations*.

TEKS 2.3.B; TEKS 2.6.E

Writing

Students will write an entry in the *My Human Body Journal*, identifying Anton van Leeuwenhoek and describing his important discovery.

TEKS 2.7.B

FORMATIVE ASSESSMENT

Activity Page 2.1

My Human Body Journal Students will write an entry in the *My Human Body Journal*, identifying Anton van Leeuwenhoek and describing his important discovery.

TEKS 2.7.B

TEKS 2.1.D Work collaboratively with others by following agreed-upon rules for discussion, including listening to others, speaking when recognized, making appropriate contributions, and building on the ideas of others; **TEKS 2.6.F** Make inferences and use evidence to support understanding; **TEKS 2.6.G** Evaluate details read to determine key ideas; **TEKS 2.3.B** Use context within and beyond a sentence to determine the meaning of unfamiliar words; **TEKS 2.6.E** Make connections to personal experiences, ideas in other texts, and society; **TEKS 2.7.B** Write brief comments on literary or informational texts that demonstrate an understanding of the text.

LESSON AT A GLANCE

	Grouping	Time	Materials
Introducing the Read-Aloud (10 min.)			
What Have We Already Learned?	Whole Group	10 min.	❑ Posters 1 and 2 (Flip Book)
Read-Aloud (30 min.)			
Purpose for Listening	Whole Group	30 min.	❑ Image Card 1 ❑ Flip Book: 2A-1–2A-13
"Anton van Leeuwenhoek"			
Comprehension Questions			
Word Work: *Observations*			
This is a good opportunity to take a break.			
Application (20 min.)			
My Human Body Journal	Independent/ Partner	20 min.	❑ Activity Pages 2.1, 2.2 ❑ a magnifying glass for each pair of students ❑ patterned fabric swatch for each pair of students
Using a Magnifying Glass (Hand Lens)			

CORE VOCABULARY

bacteria, n. very small living things not visible with the naked eye, some of which may cause disease
Example: Washing your hands with soap helps prevent harmful bacteria from attacking your body.
Variation(s): bacterium

lens, n. a curved piece of glass used in magnifying glasses and microscopes
Example: Alejandro was able to see the tiny veins of the fly's wings when viewed through the lens of the microscope.
Variation(s): lenses

magnifies, v. makes something appear larger than it really is
Example: My grandmother's magnifying glass magnifies the print in her book so that she can read more easily.
Variation(s): magnify, magnified, magnifying

microscope, n. a magnifying instrument used for viewing very small objects
Example: The students took turns looking through the microscope to see the ant's antennae.
Variation(s): microscopes

observations, n. information gathered by closely watching someone or something
Example: Carly watched the birdfeeder, writing down her observations of the birds that came to feed.
Variation(s): observation

Vocabulary Chart for "Anton van Leeuwenhoek"

Type	Tier 3 Domain-Specific Words	Tier 2 General Academic Words	Tier 1 Everyday Speech Words
Vocabulary	bacteria *(bacterias)* lens *(lente/s)* magnifies *(magnifica)* microscope *(microscopio)*	observations *(observaciones)*	
Multiple Meaning			
Sayings and Phrases	closer range not visible with the naked eye of his day		

Lesson 2: Anton van Leeuwenhoek

Introducing the Read-Aloud

10M

Speaking and Listening: Students will review what they learned about the human body and the five senses.

TEKS 2.1.D

WHAT HAVE WE ALREADY LEARNED?

- Use Posters 1 and 2 and the following questions to review what students have learned about the human body.
  - Have student volunteers take turns pointing to organs or systems on Poster 1 or Poster 2, and have the rest of the class identify the organ/system.

Check for Understanding

Riddles With a Partner: Turn to your partner and ask a riddle about one of the five senses. Your partner should then provide the answer to your riddle. For example, you could say, "This sense protects your body from getting burned, because it senses when something is too hot to touch." Your partner would respond "That is the sense of touch."

Then have your partner ask you a riddle about one of the five senses.

- Remind students that at the end of the previous Read-Aloud, Nick Nutri said that Anton van Leeuwenhoek was his hero.
- Explain that you are going to give students a hint about why Anton van Leeuwenhoek is Nick Nutri's hero: about four hundred years ago, Anton made an important discovery that helps present-day scientists like Nick Nutri.

Challenge

Have students provide additional information about the organ or system identified. For example, students could identify the heart and then say "The heart pumps blood through the body."

ENGLISH LANGUAGE LEARNERS

Speaking and Listening

Listening Actively

Beginning
Students will demonstrate active listening by asking and answering basic questions with substantial support.

Intermediate
Students will demonstrate active listening by asking and answering detailed questions with occasional prompting and support.

Advanced/ Advanced High
Students will demonstrate active listening by asking and answering detailed questions with minimal prompting and light support.

ELPS 2.G; ELPS 2.I

TEKS 2.1.D Work collaboratively with others by following agreed-upon rules for discussion, including listening to others, speaking when recognized, making appropriate contributions, and building on the ideas of others.

Lesson 2: Anton van Leeuwenhoek

Read-Aloud

30M

Reading: Students will describe Anton van Leeuwenhoek's important discovery and will make inferences and use evidence to support understanding.

TEKS 2.6.F; TEKS 2.6.G

Language: Students will demonstrate an understanding of the Tier 2 word *observations*.

TEKS 2.3.B; TEKS 2.6.E

PURPOSE FOR LISTENING

- Tell students to listen carefully to find out what Anton van Leeuwenhoek discovered that makes him a hero to people like Nick Nutri.

"ANTON VAN LEEUWENHOEK" (15 MIN.)

Challenge

Review with students the identity and job of the narrator. *(Nick Nutri, a nutritionist)*

Show Image 2A-1: Nick Nutri and Leeuwenhoek

Hi, boys and girls. Last time we were together, I said that I would tell you about Anton van Leeuwenhoek [/lae*vən*hook/] today. I do plan to do that, but first I want to tell you a story about me.

When I was about your age, one day my father came home with a present for me under his arm. When I first opened it, I wasn't sure what it was.

Show Image 2A-2: Student microscope

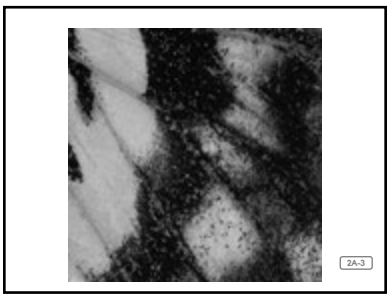
[If there is a microscope in the classroom, direct students' attention to it.]

It looked like this. Do you know what this is called or what it does? My father explained that it was a **microscope**. That was nothing I had ever dreamed of wanting. I spent most of my time playing outside and could barely sit still to read a book. Why would I want this funny looking-instrument?

TEKS 2.6.F Make inferences and use evidence to support understanding; **TEKS 2.6.G** Evaluate details read to determine key ideas; **TEKS 2.3.B** Use context within and beyond a sentence to determine the meaning of unfamiliar words; **TEKS 2.6.E** Make connections to personal experiences, ideas in other texts, and society.

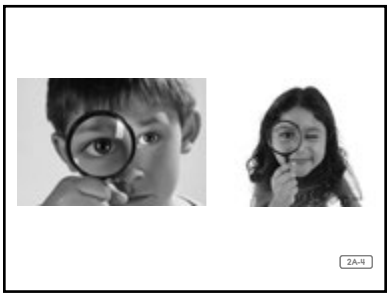
What is a microscope? [Pause for students' answers.] A microscope is a type of scientific equipment that uses pieces of curved glass to make very small things look bigger.

"You are so curious about everything. I thought perhaps you'd like to see what a butterfly wing looks like close up," my father said.



Show Image 2A-3: Butterfly wing under a microscope

I peered through the **lens** *or curved piece of magnifying glass* of the microscope and saw the tiny veins and hairs of a butterfly's wing. I looked at insect eyes and blades of grass. I looked at oak leaves and dead bumblebees and toy soldiers. It was the best present I had ever received.

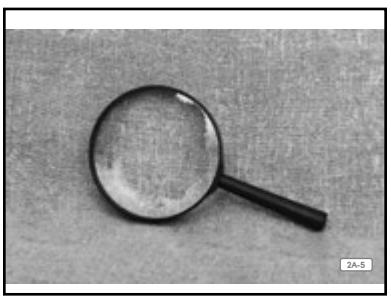


Show Image 2A-4: What does a magnifying glass do? *[Point out to students the magnifying glass in your classroom.]*

Have you ever used a magnifying glass? Who can tell me what a magnifying glass is used for? Yes, it **magnifies** objects. It makes objects look hundreds of times larger than they really are.

It shows things that are too small to see with the human eye alone. Sometimes people use magnifying glasses to read really small print or to find splinters buried deep in the skin. Well, a microscope is a lot like that but much more powerful.

So, what does that have to do with Anton van Leeuwenhoek? Well, just like me at seven years old, the year I received my first microscope, Anton was very curious. He also had a fascination with magnifying objects. Although Anton was not a scientist, his work with microscopes changed the way people thought about the human body and how it works.



Show Image 2A-5: Threads of cloth under a magnifying glass

At sixteen, Anton began working in the textile *or cloth* business. His shop sold cloth, buttons, sewing supplies, ribbons, and lace. His customers were very particular, expecting the very best textiles, or cloth, for their suits

Challenge

Based on the way it is used here, what does the word *magnifies* mean?

and dresses. Anton used a magnifying glass to make sure the threads of the cloth were straight and tightly woven. His customers appreciated Anton's careful **observations**. *Observations are made when you look closely at the details of something.*

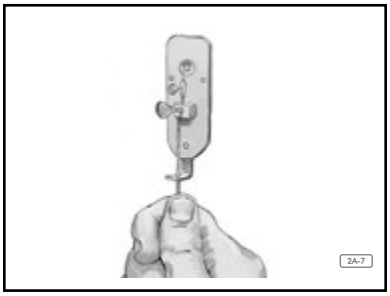
When he was about thirty years old, Anton took a trip from his home in Holland to nearby England. There he discovered a book called *Micrographia*, meaning small images.

Show Image 2A-6: Lice
Written by Robert Hooke, the book was full of drawings and descriptions of objects seen through a microscope. Anton was fascinated by how large and detailed the micro, or small, objects looked when seen through the lenses of a microscope.

Support

Review the meaning of the word *lens*.

It was a little like someone with poor eyesight putting on eyeglass lenses for the first time and discovering that the blurry tree in the distance was actually made up of individual leaves. He couldn't wait to get home to experiment with his own objects!

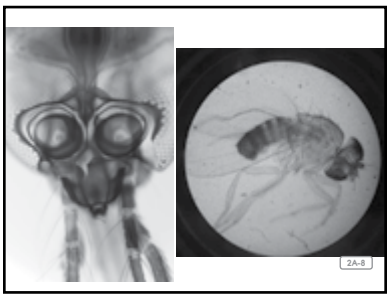


Show Image 2A-7: Anton's microscope
Upon his return to Holland, Anton began to build his own single-lens microscopes, *or a type of microscope having only one lens.* He shaped his lenses very carefully, grinding them down with sand and polishing them smooth with putty, *or polishing powder.* Anton's simple microscopes magnified objects from fifty to two hundred times their natural size.

Challenge

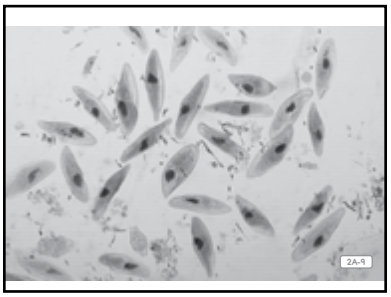
Have students share what they remember about the life cycles of insects from the *Cycles of Nature*: *Clouds to Raindrops* and *Insects: All Around* domains.

Anton had been interested in science and nature ever since he was a boy, and now he had the opportunity to study nature at a much closer range. He carried squiggly wormlike insect larvae around in his pocket, eager to watch the entire life cycles of insects with the aid of a microscope.



Show Image 2A-8: Mosquitos under a microscope

Using the microscopes he made himself, he studied people's skin, mosquito wings, and sheep hairs. He observed duck hearts, fish scales, cow eyes, and water bugs. What a strange man, others thought. But this patient man was driven by his curiosity, and he wanted to learn more. He never lost interest in the scales on a gnat's wing or the hairs on a fly. He looked at the same things again and again—comparing, measuring, and recording his findings.

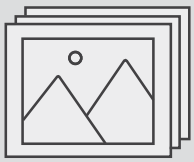


Show Image 2A-9: Pond water under a microscope

Anton conducted many experiments with water—drinking water from his well, water from lakes and from the sea, rain, and melted snow. He discovered what looked to him like tiny "little animals" in lake water. He called these "little animals" *animalcules*. Anton claimed he saw even more animalcules swimming about in rainwater. They were everywhere, he said. He estimated *or guessed* that one thousand of these tiny creatures could fit on the head of a pin. *[Show Image Card 1 (Pins).] What do you use a pin for? (sewing) The head of the pin is the flat top part.* People called him a liar and a magician, thinking him quite mad, *or crazy.*

But, in fact, Anton was not mad at all. His "little animals" were not really animals, but they were definitely alive. He was the first to observe and describe many tiny living things in nature not visible with the naked eye, including **bacteria**, or germs. In other words, bacteria cannot be seen with the naked eye. *When something cannot be seen with the naked eye, it means you can't see the object with just your eyes. You need a tool, such as a microscope, telescope, or magnifying glass, in order to see it.* Many scientists believe that these tiny life forms have been on Earth for more than three billion years. They surround us in air, water, and on land, but no one was aware of their existence before Anton recorded what he saw. He discovered a whole new world!

Image Card 1



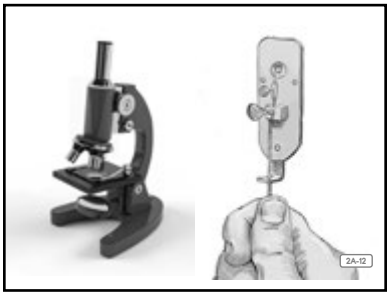
Support

Be sure students understand that the word *mad* is used here to mean crazy, not angry.

Show Image 2A-10: Close-up of a smile
Ever curious, Anton began studying the saliva from inside his mouth. He discovered even more bacteria. He found that the sticky coating on the outside of his teeth was crawling with millions of tiny organisms, *or living things.* You have them too, but don't worry. They won't hurt you. We'll learn more about them another day.

Show Image 2A-11: Engraving of Anton from the Royal Society
Anton kept a journal to record his detailed observations. He made friends with two English doctors who belonged to England's Royal Society of London. They told him that their fellow English scientists kept similar journals to share their scientific discoveries, and they invited Anton to share his work with them.

So, for the next fifty years, Anton sent hundreds of letters to England. His letters described in great detail the tiny structures that he saw through his homemade microscopes. He described fungus on stale bread; the stingers, eyes, and mouths of bees; even tiny lice. Because he could not draw well, Anton hired someone to illustrate his writing. The English society loved everything he sent and published his letters for others to read.



Show Image 2A-12: A microscope today and Anton's microscope
Anton van Leeuwenhoek did not invent the microscope, nor was he the first to use one, but he used his own simple microscope more than most people of his day. Compared to modern microscopes, Anton's was very simple, indeed. It was even more simple than other microscopes used in his day. The entire instrument was only three to four inches long and had to be held up close to the eye.

Anton's microscope used only one lens. Modern microscopes have two or more lenses—one in the eyepiece that you look through; and at least one lens at the bottom of the tube, or barrel, to enlarge things even more.

Today, objects are put on glass slides to be viewed. These objects remain in one place. It is the lens that moves, not the objects. Instead of keeping the objects in one place, Anton mounted his objects on the end of a sharp pointed pin sticking up in front of the lens and moved the objects instead of the lens. Anton's invention required good lighting and great patience to use. His lenses were the clearest and most powerful lenses of his day, but he never shared his secret for creating them. No one came close to matching the quality of Anton van Leeuwenhoek's microscopes for more than one hundred years after his death. Of the four to five hundred microscopes that Anton is believed to have made, no more than nine exist today.

Show Image 2A-13: Pond water under a microscope

Anton is one of my heroes because he was the first person to describe bacteria, tiny living things not visible with the naked eye. And his discovery of bacteria made it possible to see other small living things, such as the small building blocks of all life on Earth.

As a nutritionist, I am fascinated by how the human body works and the tiny building blocks that make up the human body. The next time we meet, I look forward to teaching you about the amazing body's amazing building blocks.

COMPREHENSION QUESTIONS (10 MIN.) TEKS 2.6.F

Support

Write the adjectives students provide on the board/chart paper to be used during the Application activity.

ENGLISH LANGUAGE LEARNERS

Speaking and Listening

Supporting Own Opinions

Beginning
Students will support their opinions by providing good reasons and some evidence from the Read-Aloud or relevant background knowledge.

Intermediate
Students will support their opinions by providing good reasons and increasingly detailed evidence from the Read-Aloud or relevant background knowledge.

Advanced/ Advanced High
Students will support their opinions by providing good reasons and detailed evidence from the Read-Aloud or relevant background knowledge.

ELPS 3.G; ELPS 4.J

Check for Understanding

Recall: What was Anton van Leeuwenhoek's important discovery? *(bacteria, tiny living things not visible with the naked eye)*

1. **Inferential.** What instrument made Anton's discovery possible? How? *(He used a microscope with its magnifying lens to magnify drops of water, his own saliva, and many other things.)*
2. **Evaluative.** What adjectives would you use to describe Anton van Leeuwenhoek? *(Answers may vary, but may include* curious, patient, hardworking, smart, observant, *and* brave.*)*
3. **Inferential.** Anton lived a very long time ago, so how do we know so much about his discoveries? *(He kept detailed journals, many of which were published in England.)*
4. **Evaluative.** *Think-Pair-Share:* Do you think Anton van Leeuwenhoek is a good hero for Nick Nutri? Why or why not? *(Answers may vary.)*

TEKS 2.6.F Make inferences and use evidence to support understanding.

WORD WORK: OBSERVATIONS (5 MIN.)

1. In the Read-Aloud you heard, "His customers appreciated Anton's careful observations."
2. Say the word *observations* with me.
3. Observations include the information that is gathered when watching someone or something very closely.
4. When drawing a flower, Rusty made detailed observations of its petals.
5. Look around the room and make observations about what you see. Tell us about one of your observations. Use the word *observation* or *observations* when you tell about it. [Ask two or three students. If necessary, guide and/or rephrase students' responses: "My main observation is that . . . "]
6. What's the word we've been talking about?

Use a Making Choices activity for follow-up. I am going to read some sentences from the Read-Aloud. If the sentence describes one of Anton's observations, say, "That's an observation." If it does not describe one of Anton's observations, say, "That's not an observation." Remember to answer in complete sentences.

- At sixteen, Anton began working in the textile business. *(That's not an observation.)*
- Anton used a magnifying glass to make sure that the threads of the cloth were straight and tightly woven. *(That's an observation.)*
- Anton found that the sticky coating on the outside of his teeth was crawling with millions of tiny organisms. *(That's an observation.)*
- Anton discovered what looked to him like tiny "little animals" in lake water. *(That's an observation.)*
- Anton made friends with two English doctors who belonged to England's Royal Society of London. *(That's not an observation.)*

Lesson 2: Anton van Leeuwenhoek

Application

20M

Writing: Students will write an entry in the *My Human Body Journal*, identifying Anton van Leeuwenhoek and describing his important discovery.

TEKS 2.7.B

MY HUMAN BODY JOURNAL (15 MIN.)

- Tell students that they are going to add another entry to the *My Human Body Journal* that they began in Lesson 1.
- Explain that students will use Activity Page 2.1 to write three sentences about Anton van Leeuwenhoek.

Activity Page 2.1

Support

Direct students' attention to the list of adjectives on the board/chart paper.

ENGLISH LANGUAGE LEARNERS

Writing

Writing Informational Text

Beginning
Allow students to dictate their journal entries to an adult.

Intermediate
Allow students to collaborate with a peer to write their journal entries.

Advanced/ Advanced High
Have students work independently to write their journal entries.

ELPS 5.F

Check for Understanding

Turn and Talk: Turn to your partner and talk about Anton van Leeuwenhoek. Try to use some of the adjectives that we used to describe Anton after listening to the Read-Aloud, as well as some of the things Anton accomplished.

- Have students work independently to complete Activity Page 2.1.
- Have several students share their journal entry with the class.
- Save the journal pages to assemble into individual student journals at the end of the domain, but consider making copies of the pages for inclusion in the students' writing portfolios.

TEKS 2.7.B Write brief comments on literary or informational texts that demonstrate an understanding of the text.

USING A MAGNIFYING GLASS (HAND LENS) (5 MIN.)

- Have students talk about tools that help people experience the world in new ways, referring back to Lesson 1 and the use of hearing aids and glasses. Other items include canes, crutches, wheelchairs, prosthetic limbs, microscopes, telescopes, etc.
- Have students look at an object far away from them, perhaps on the other side of the room or out a window.
- Ask them how they might see the object better without moving closer to it. They may suggest a variety of tools to make the object appear larger, such as glasses, binoculars, and telescopes.
- Pair students and distribute magnifying glasses, one per pair, if possible.
- Have students identify what a magnifying glass is and how it works. Explain that the lens is curved outward like a dome on both sides, or is convex, which makes objects appear larger.
- Encourage students to experiment with the magnifying glasses, looking at each other and at objects around the room. Have them look through the lenses with both eyes open and then with one eye closed. Have them hold the lenses at various distances from their eyes to see what works best for them.
- Students should understand that the closer they hold the glass to an object, the larger the object appears.
- After students have had the opportunity to experiment with the hand lenses, have them turn to Activity Page 2.2. Distribute a fabric swatch to each student or pair of students.
- Have students individually make two drawings on Activity Page 2.2 or on a separate sheet of paper. On the top part of the page, have them draw patterns from their fabric swatches without the aid of the magnifying glasses.
- When their first drawings are complete, have them each select a section of the fabric to observe more closely. Using the magnifying glasses, have students examine the fabric and draw what they see.
- Have several students share their drawings with the class, using academic vocabulary to explain their drawings.

End of Lesson

Activity Page 2.2

Support

Students will probably see best with the non-viewing eye closed and with the magnifying glass held five or six inches away from their faces.

LESSON

3

THE HUMAN BODY: BUILDING BLOCKS AND NUTRITION

Cells and Tissues

PRIMARY FOCUS OF LESSON

Speaking and Listening

Students will review what they have learned about the human body and Anton van Leeuwenhoek.

TEKS 2.1.A

Reading

Students will describe the connection between cells and tissue.

TEKS 2.6.G

Language

Students will demonstrate an understanding of the Tier 2 word *functions*.

TEKS 2.3.B

Writing

Students will write an entry in the *My Human Body Journal*, describing cells and tissues.

TEKS 2.6.D; TEKS 2.7.E

FORMATIVE ASSESSMENT

Activity Page 3.1

My Human Body Journal Students will write an entry in the *My Human Body Journal*, describing cells and tissues.

TEKS 2.7.E

TEKS 2.1.A Listen actively, ask relevant questions to clarify information, and answer questions using multi-word responses; **TEKS 2.6.G** Evaluate details read to determine key ideas; **TEKS 2.3.B** Use context within and beyond a sentence to determine the meaning of unfamiliar words; **TEKS 2.6.D** Create mental images to deepen understanding; **TEKS 2.7.E** Interact with sources in meaningful ways such as illustrating or writing.

LESSON AT A GLANCE

	Grouping	Time	Materials
Introducing the Read-Aloud (10 min.)			
What Have We Already Learned?	Whole Group	10 min.	❑ Image Card 4
Essential Background Information or Terms			
Read-Aloud (30 min.)			
Purpose for Listening	Whole Group	30 min.	❑ Image Cards 2, 3 ❑ Flip Book: 3A-1–3A-12
"Cells and Tissues"			
Comprehension Questions			
Word Work: *Functions*			
This is a good opportunity to take a break.			
Application (20 min.)			
My Human Body Journal	Independent/ Small Group/ Whole Group	20 min.	❑ Activity Page 3.1 ❑ tubs of small cubes in four different colors ❑ resealable plastic bags
Making Connections: Cells—The Body's Building Blocks			

CORE VOCABULARY

cells, n. the smallest units of living things; the body's building blocks
Example: Our bodies are made up of billions of tiny, microscopic cells.
Variation(s): cell

functions, n. roles, jobs, or purposes that support particular activities
Example: One of your heart's functions is to pump blood into other parts of your body.
Variation(s): function

microscopic, adj. too small to be seen without the aid of a microscope
Example: Microscopic cells were unknown before the invention of the microscope.
Variation(s): none

stimulus, n. a thing or event that starts actions, feelings, and thoughts; a thing or event that stirs up specific reactions in organs and tissues
Example: The bee stings acted as a stimulus, sending alarm signals through nervous tissues to the brain.
Variation(s): stimuli

tissue, n. a group of cells that perform the same job in living organisms
Example: Muscle tissue helps our bodies move, allowing us to run and play.
Variation(s): tissues

Vocabulary Chart for "Cells and Tissues"

Type	**Tier 3 Domain-Specific Words**	**Tier 2 General Academic Words**	**Tier 1 Everyday Speech Words**
Vocabulary	microscopic *(microscópico/a)*	stimulus	
Multiple Meaning	cells tissue	functions	
Sayings and Phrases	influenced the work of on a daily basis		

Start Lesson

Lesson 3: Cells and Tissues

Introducing the Read-Aloud

10M

Speaking and Listening: Students will review what they have learned about the human body and Anton van Leeuwenhoek.

TEKS 2.1.A

WHAT HAVE WE ALREADY LEARNED? (5 MIN.)

- Use the following questions to review what students have learned so far about the human body and Anton van Leeuwenhoek:
  - Who was Nick Nutri's hero, and why? *(Anton van Leeuwenhoek; He used the microscope to discover bacteria.)*

Check for Understanding

Recall: What are some word that could be used to describe Anton van Leeuwenhoek? *(Answers may vary, but may include* curious, hard-working, patient, smart, observant, brave*)*

What are the five senses? *(touch, taste, smell, sight, and hearing)*

Make one statement about each of the five senses. *(Answers may vary.)*

ESSENTIAL BACKGROUND INFORMATION OR TERMS (5 MIN.)

Show Image Card 4 (Human Cell)

- Have students try to identify what is in this image.
- Explain that it is a human cell. Cells are the tiny building blocks that make up the human body. Nick Nutri mentioned cells at the end of the last Read-Aloud.
- Explain that cells are the smallest units of all living things, not just of the human body. Cells are so small they cannot be seen without a microscope.
- Refer students to the name of today's Read-Aloud, "Cells and Tissues." Tell them they are going to learn about cells and groups of cells.

Image Card 4

Support

Have students review what a microscope is and why it is useful.

TEKS 2.1.A Listen actively, ask relevant questions to clarify information, and answer questions using multi-word responses.

Lesson 3: Cells and Tissues

Read-Aloud

30M

Reading: Students will describe the connection between cells and tissue.

TEKS 2.6.G

Language: Students will demonstrate an understanding of the Tier 2 word *functions*.

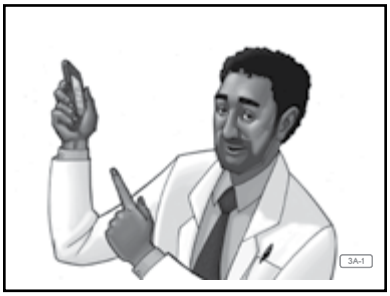
TEKS 2.3.B

PURPOSE FOR LISTENING

- Tell students to listen carefully to find out the connection between cells and tissues in the human body.

"CELLS AND TISSUES" (15 MIN.)

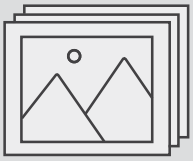
Today we are going to talk about **cells**. When you hear the word *cell*, what is the first thing that comes to your mind?



Show Image 3A-1: Nick Nutri holding a cell phone

It may be that you think of a cell phone like this. Telephone companies divide cities, towns, and countrysides into lots of separate areas in order to provide the best service. Each area is called a cell. That's why mobile *or moveable* phones are called cell phones. They use signals from lots of different cells.

Image Card 2



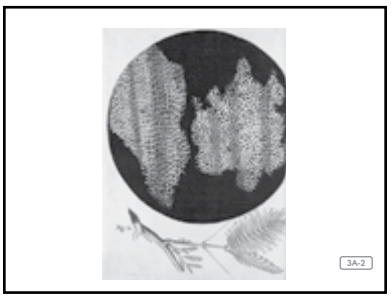
What do you remember about the hives of honeybees? *[Show Image Card 2 (Bee Hive).]* Their hives are made up of lots of different areas called *cells*, too. Different activities occur in each cell. Another example that might help us understand cells would be a large multi-floor school building that has many classrooms. A teacher is in each classroom, similar to cells lined up one after the other inside beehives. The word *cell* describes one of many small parts that form a much larger area. One classroom is like one cell of many cells, or rooms, in a school, like a honeybee's cell is one of many cells in a hive. *But unlike the cells of a beehive, the cells of living things are too small to be seen without the aid of a microscope.*

TEKS 2.6.G Evaluate details read to determine key ideas; **TEKS 2.3.B** Use context within and beyond a sentence to determine the meaning of unfamiliar words.

Because you're learning about the human body, you may have guessed that we're not going to be talking about cell phones or honeybees today! Instead, we will focus on human body cells. These cells were a mystery to people for thousands of years. No one even knew they existed. The invention of the microscope changed all of that.

Microscopes magnify cells, making them big enough for the human eye to see.

Last time, I mentioned a man whose book of **microscopic** organisms, or living things, influenced the work of Anton van Leeuwenhoek.



Show Image 3A-2: A view of Hooke's cork cells

The man was an Englishman named Robert Hooke. In one of Hooke's first experiments with a microscope, he sliced open the stem of a cork plant and placed it under his lens. *[Show Image Card 3 (Cork Tree and Cork Board).] You are probably familiar with corkboards or bulletin boards made with cork. Cork comes from cork trees.* What he saw amazed him. The cork was made up of tiny walled spaces. These little boxes reminded him of the cells in a honeycomb. Hooke was the first to use the term *cell* to describe what he saw through the microscope. We still use the word *cell* today when referring to these tiny little boxes of which all living things, both plants and animals, are made.

Show Image 3A-3: Giraffe with an oxpecker

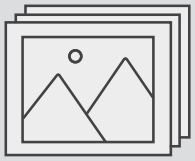
All living things, no matter how big or how small, are made up of microscopic units called *cells*. Cells are the body's building blocks, the smallest units of life that can carry out the **functions**, *or jobs,* of a living thing. They are so small that they cannot be seen without the aid of a microscope. That is why we call them microscopic.

The bacteria that Anton van Leeuwenhoek discovered are one-celled organisms, but most living things on Earth have more than one cell. In fact, some have billions of cells. You are one of those creatures. You have millions and billions, maybe even trillions, of cells.

Challenge

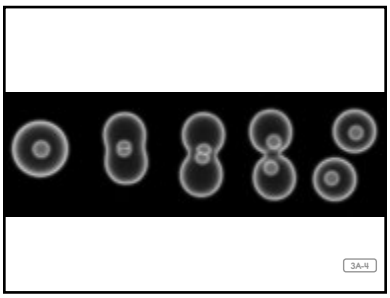
Have students explain why the invention of the microscope may have changed all that.

Image Card 3



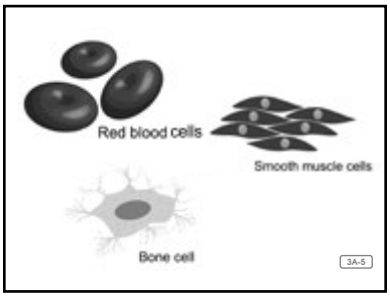
Support

Review the meaning of the word *microscopic*.



Show Image 3A-4 Cell division

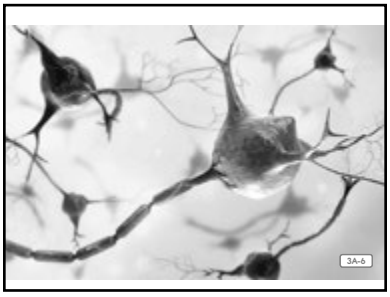
You began life as a single cell formed by the joining of two cells, one cell from your mother and one cell from your father. Your parents' two cells merged, and become one joint cell, called a fertilized egg. Then, that one cell divided into two cells that divided into two more. The cells divided again and again until pretty soon there were billions of cells. Your whole body is made up of these tiny building blocks.



Show Image 3A-5: Blood, muscle, and bone cells

The human body is a collection of more than two hundred different types of cells. Cells come in all shapes and sizes, depending upon the jobs, *or functions,* they must perform. Bone cells build bone. Skin cells build skin. And guess what muscle cells build? Muscles!

The shape of a cell usually reflects the role it plays in the day-to-day working of the human body. For example, red blood cells are shaped somewhat like shallow bowls. Just like bowls that can be used to hold things like cereal, milk, or ice cream, the bowl-shaped red blood cells hold and carry nutrients through your blood. *What are nutrients?* (nourishing substances necessary for growth and the maintenance of life*)*



Show Image 3A-6: Nerve cell

Nerve cells have really long tails to send and receive messages quickly. See all the little branches on this nerve cell? *[Point to the branches of the nerves in the image.]*

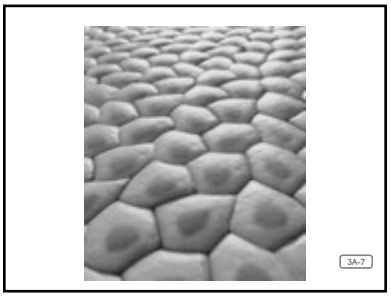
Cells are like tiny chemical factories.

Because they are living organisms, they need nutrients and air to stay alive. Your heart pumps blood to cells throughout your body, carrying food and oxygen to each cell. Your cells use these nutrients to form muscles, nerves, skin, and bone, and to help protect your body from disease.

Support

Have students define the term *factory* and give examples, such as a toy factory, a car factory, etc.

Living things do not last forever. Body cells have limited lives. Some cells get damaged when you get hurt. Others wear out over time. As cells die, the dead cells are replaced with new cells on a daily basis. Isn't that amazing?

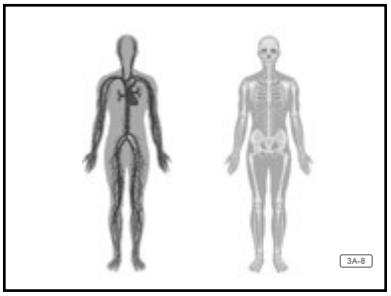


Show Image 3A-7: Microscopic section of skin

Let's look closely at a microscopic section of skin. Skin cells are packed tightly together to form a protective boundary *or dividing line* between you and your environment. *How does this image help you understand what is going on in this part of the Read-Aloud?* Do you see the layers of cells, stacked one on top of the other? The old, dead cells flake off and form a protective layer for the new cells that are constantly growing beneath. They grow, split, make new cells, and die. Some cells live for only a few days. Others live for years.

Cells work together. They are organized into groups of cells that all perform the same function. *What does* function *mean?* (job or purpose) These groups of cells are called **tissue**. Tissue is a collection of the same kinds of cells working together to do the same job.

There are four main types of tissue, and each type serves a different function. The four types of tissue are connective, muscle, nervous, and epithelial [/ep*ə*thee*lee*əl/].

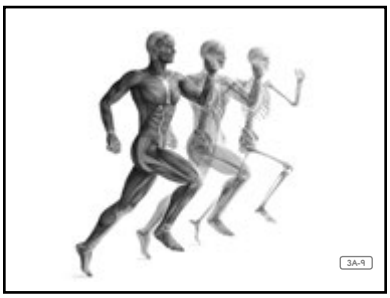


Show Image 3A-8: Skeleton and circulatory system

What do you think connective tissue does? It connects. Connective tissue supports the body and binds other tissue together like glue. Your skeleton is made up of bone, a connective tissue that provides the structure or framework for your body. It contains cells that make the tissue strong and flexible, *or is able to bend easily without breaking,* Fat is a connective tissue, padding your body and supplying it with energy. You may be surprised to learn that blood is also a connective tissue, but think about it. This liquid tissue flows throughout your entire body and connects all of its many parts.

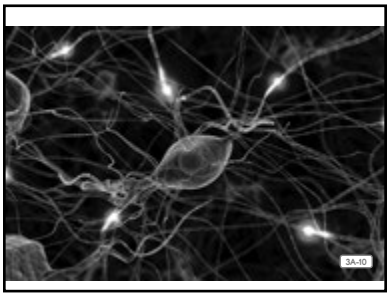
Support

Tissue can also be a piece of soft and very thin paper that is used especially for blowing your nose.



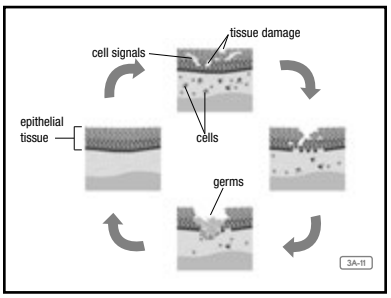
Show Image 3A-9: Muscle tissue

Muscle tissue helps your body move. It is the softest and most abundant tissue in your body. *[Point to the image.] You can see how much muscle tissue there is throughout the whole human body.* There are different kinds of muscle tissue. Your stomach walls are lined with smooth muscle tissue that helps digest your food. You would not be alive without cardiac muscle tissue. What does the cardiac muscle do? It is found only in your heart, and its job is to pump your blood. Skeletal muscle tissue moves your bones. The long, thin strands of muscle tissue stretch and shrink in response to messages from your brain. As they shorten, they move the parts of your body. So, connective tissue connects and muscle tissue moves your body parts.



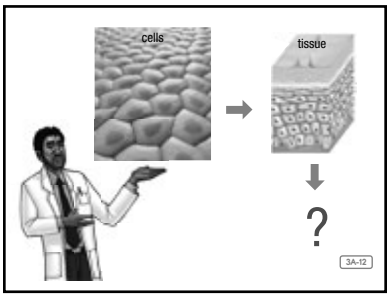
Show Image 3A-10: Nervous tissue

The third type of body tissue is nervous tissue. Maybe you can figure out what it does based on its name. What does it do? Nervous tissue runs through your body and connects to your brain. Nervous tissue serves as the messengers between your brain and body. Nerve cells within the nervous tissue sense a **stimulus** and carry electrical signals to and from the brain. *A stimulus is a thing that starts other actions. Examples of a stimulus include a light, a sound, a touch, etc.* Nervous tissue acts as the body's most important communication system. One example of how nervous tissue works would be when you touch something that is so hot you would burn yourself. Your nervous tissue receives the stimulus of extreme heat, the message is sent to your brain, and your brain sends a message back to the nervous tissue to tell your muscle tissue to jerk your hand away from the hot stimulus. This happens almost automatically without you having to think about it.



Show Image 3A-11: Bacteria repelled by epithelial tissue

What about epithelial tissue? Let's try to pronounce it first. Ep-ə-THEE-lee-əl. What a big word for tissue that covers and protects! Sheets of cells, packed closely together, make up epithelial tissue. Does this picture look familiar? Remember, those are the skin cells that form the outer layer of your skin. You're looking at the epithelial tissue that prevents bacteria from entering your body. This thin, tough covering protects your body and its organs. Epithelial tissue is also found inside your body. It forms barriers to protect the inside of your mouth, nose, throat, and stomach.



Show Image 3A-12: Cells, tissue, and ?

Everything you do, from breathing to eating to running, requires lots of working cells. They are truly the building blocks of your body. Cells are organized into tissues, grouped by the similar jobs that they do. Tissues are organized into groups that work together to do similar jobs as well. You will learn all about these groups of tissues the next time we're together.

COMPREHENSION QUESTIONS (10 MIN.)

1. **Literal.** What is the smallest microscopic building block of all living things? *(a cell)* What is a group of the same cells that perform the same job called? *(tissue)*
2. **Literal.** Why are cells called microscopic? *(They are too small to be seen without the aid of a microscope.)*
3. **Literal.** There are four types of tissue: connective, muscle, nervous, and epithelial. What type of tissue is your blood? *(connective)* Why? *(It connects all parts of your body.)*
4. **Inferential.** How do we know that cells are alive? *(Just like other living organisms, cells need nutrients and air. They grow, split, make new cells, and die.)*

Check for Understanding

Evaluate: What is the connection between cells and tissue? *(Tissue is made up of cells that all have the same function, or job.)*

WORD WORK: FUNCTIONS (5 MIN.)

1. In the Read-Aloud you heard, "Cells are the body's building blocks, the smallest units of life that can carry out the functions of a living thing."
2. Say the word *functions* with me.
3. Functions are the roles, jobs, or purposes that support particular activities.
4. Some of the functions that trees provide are releasing oxygen to the air we breathe, giving shade and cooling, serving as a habitat for animals, and supplying the resource of wood.
5. Think of some functions that schools serve. Tell us about one of them. Use the word *functions* when you tell about it. [Ask two or three students. If necessary, guide and/or rephrase students' responses: "Schools serve many functions, including . . . "
6. What's the word we've been talking about?

Use a True-False activity for follow-up. I am going to read some sentences about the functions of different human body systems. If what I read describes one of the body system's functions correctly, say, "That's one of its functions." If it does not describe one of the body system's functions, say, "That's not one of its functions." Remember to answer in complete sentences.

- The circulatory system circulates blood through the heart to every part of the body. *(That's one of its functions.)*
- The nervous system gets rid of our body waste. *(That's not one of its functions.)*
- The respiratory system helps you digest your food. *(That's not one of its functions.)*
- The digestive system breaks down food into nutrients that your body can use. *(That's one of its functions.)*

Challenge

Have students identify the function of the respiratory system. *(It controls the way in which the body takes in air through the lungs and supplies the body with oxygen from that air.)*

Challenge

Have students identify the function of the nervous system. *(It sends messages back and forth between the brain and other parts of the body.)*

Lesson 3: Cells and Tissues

Application

20M

Writing: Students will write an entry in the *My Human Body Journal*, describing cells and tissues.

TEKS 2.6.D; TEKS 2.7.E

MY HUMAN BODY JOURNAL (15 MIN.)

- Tell students that they are going to add another entry to the *My Human Body Journal* that they began in Lesson 1.
- Explain that students will use Activity Page 3.1 to write two sentences, one about cells and another about tissue.

Check for Understanding

Turn and Talk: Turn to your partner and ask your partner a question about cells. Listen carefully to your partner's question and respond to it. Then, ask your partner a question about tissue. Your partner will listen carefully to your question and respond to it.

- Have students work independently to complete Activity Page 3.1, including adding a drawing that clarifies their ideas and thoughts.
- Have several students share their journal entry with the class.
- Save the journal pages to assemble into individual student journals at the end of the domain, but consider making copies of the pages for inclusion in the students' writing portfolios.

TEKS 2.6.D Create mental images to deepen understanding; **TEKS 2.7.E** Interact with sources in meaningful ways such as illustrating or writing.

Activity Page 3.1

Challenge

Have students write an additional sentence or two explaining the connection between cells and tissue.

ENGLISH LANGUAGE LEARNERS

Writing

Writing Informational Text

Beginning
Allow students to dictate their journal entries to an adult.

Intermediate
Allow students to collaborate with a peer to write their journal entries.

Advanced/ Advanced High
Have students work independently to write their journal entries.

ELPS 5.F

MAKING CONNECTIONS: CELLS—THE BODY'S BUILDING BLOCKS (5 MIN.)

TEKS 2.6.D

- Divide the class into groups of four. Give each group a tub of different-colored cubes, and explain that each cube represents a cell, one of the body's building blocks. Explain that each color represents a different type of cell.
- Remind students that when individual cells of the same kind group together, they form tissue. Tell students that they are going to put the cubes in groups of the same kind (or color), just as cells of the same kind group together to form tissue.
- Have students sort the cubes by color. Then have students put each group of same-colored cubes into a plastic, resealable bag. Alternatively, if the cubes can be connected, have students connect the same-colored cubes together.
- Review the four types of body tissue: connective, muscle, nervous, and epithelial.
- Have each student take one bag of same-colored cubes. Ask students to regroup, according to the color of their cubes. All of the students with yellow cubes will form one group; all of the students with blue cubes will form another group; etc. There should now be a total of four groups.
- Assign each color a type of tissue: connective, muscle, nervous, or epithelial. Have the students in each group repeat the name of the type of tissue represented by their color. Have each group describe to the rest of the class what their tissue does.

Support

Review what each cube represents (a cell) and what each bag of single-colored cubes represents (tissue).

End of Lesson

TEKS 2.6.D Create mental images to deepen understanding.

LESSON

4

THE HUMAN BODY: BUILDING BLOCKS AND NUTRITION

Organs

PRIMARY FOCUS OF LESSON

Speaking and Listening

Students will review the connection between cells and tissue.

TEKS 2.1.A

Reading

Students will make a prediction about the connection between tissue and organs.

TEKS 2.6.C; TEKS 2.6.G

Language

Students will demonstrate an understanding of the Tier 2 word *nourish*.

TEKS 2.3.B

Reading

Students will identify the connections between cells, tissue, organs, and systems.

TEKS 2.6.H

FORMATIVE ASSESSMENT

Activity Page 4.1

What's the Connection? Students will identify the connections between cells, tissue, organs, and systems.

TEKS 2.6.H

TEKS 2.1.A Listen actively, ask relevant questions to clarify information, and answer questions using multi-word responses; **TEKS 2.6.C** Make and correct or confirm predictions using text features, characteristics of genre, and structures; **TEKS 2.6.G** Evaluate details read to determine key ideas; **TEKS 2.3.B** Use context within and beyond a sentence to determine the meaning of unfamiliar words; **TEKS 2.6.H** Synthesize information to create new understanding.

LESSON AT A GLANCE

	Grouping	Time	Materials
Introducing the Read-Aloud (10 min.)			
What Have We Already Learned?	Whole Group	10 min.	❑ Image Cards 4, 5, 7
Essential Background Information or Terms			
Read-Aloud (30 min.)			
Purpose for Listening	Whole Group	30 min.	❑ Posters 1–3 (Flip Book) ❑ Flip Book: 4A-1–4A-12
"Organs"			
Comprehension Questions			
Word Work: *Nourish*			
This is a good opportunity to take a break.			
Application (20 min.)			
What's the Connection?	Whole Group/ Independent	20 min.	❑ Activity Page 4.1 ❑ Poster 3 (Flip Book) ❑ Poster 2M: Tissue (Flip Book)
Multiple Meaning Word Activity: Tissues			

CORE VOCABULARY

collapse, v. to fall or cave in
Example: The little pig who built the house of bricks knew his house would not collapse no matter how much the wolf huffed and puffed.
Variation(s): collapses, collapsed, collapsing

kidneys, n. a pair of abdominal organs that helps clean the body's blood
Example: Human kidneys are shaped very much like small red beans called kidney beans.
Variation(s): kidney

liver, n. a large body organ that secretes juices to help the body digest food
Example: Your liver works closely with other organs in your abdomen to break down food as part of the digestive process.
Variation(s): livers

nourish, v. to provide with food or other substances necessary for growth
Example: Mothers nourish their babies with milk for the first few months of life.
Variation(s): nourishes, nourished, nourishing

transplant, v. to move something from one place to another place
Example: The gardeners transplant the rose bushes from the front yard to the back yard.
Variation(s): transplants, transplanted, transplanting

Vocabulary Chart for "Organs"

Type	Tier 3 Domain-Specific Words	Tier 2 General Academic Words	Tier 1 Everyday Speech Words
Vocabulary	kidneys liver transplant	collapse nourish	
Multiple Meaning			
Sayings and Phrases			

Start Lesson

Lesson 4: Organs

Introducing the Read-Aloud

10M

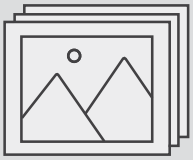
Speaking and Listening: Students will review the connection between cells and tissue.

TEKS 2.1.A

WHAT HAVE WE ALREADY LEARNED? (5 MIN.)

- Review what students have already learned by asking the following questions:
  - What are the smallest building blocks of all life? *(cells)*

Image Cards 4, 5



Show Image Card 4 (Human Cell)

- What is shown in this image? *(human cell)*
- What are groups of cells that perform the same job called? *(tissue)*

Show Image Card 5 (Muscle Tissue)

- What is shown in this image? *(muscle tissue)*

Check for Understanding

What's the Connection? What is the connection between cells and tissue? *(Tissue is made up of cells that all have a similar function.)*

ESSENTIAL BACKGROUND INFORMATION OR TERMS (5 MIN.)

Show Image Card 7 (Human Heart)

- Point to the image of the heart, and ask students to identify it.
- Explain that the heart is one of the most important organs in their bodies. A person cannot live for very long when the heart stops functioning.

Support

Review the meaning of the word *function*.

TEKS 2.1.A Listen actively, ask relevant questions to clarify information, and answer questions using multi-word responses.

Lesson 4: Organs

Read-Aloud

30M

Reading: Students will make a prediction about the connection between tissue and organs.

TEKS 2.6.C; TEKS 2.6.G

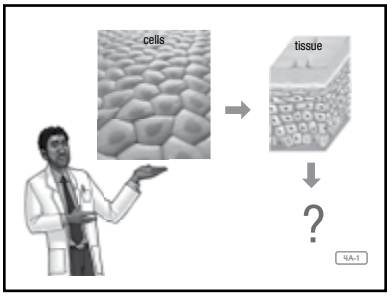
Language: Students will demonstrate an understanding of the Tier 2 word *nourish*.

TEKS 2.3.B

PURPOSE FOR LISTENING

- Tell students to listen carefully to hear what tissue forms.

"ORGANS" (15 MIN.)

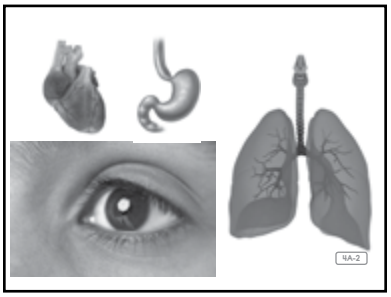


Show Image 4A-1: Nick Nutri showing photos of the progression of cells, tissues, and ?

[Review the progression with students and ask them to predict what will be the next category in this progression.]

In the last Read-Aloud you learned about cells and tissues. Similar cells join together in groups to form tissues. In the same way, similar tissues join together to form organs. Organs are parts of the human body that perform special jobs for the body. Organs are made up of groups of tissues. All organs are made up of different kinds of tissues that help them do their particular jobs well. TEKS 2.6.C

Can anyone name one of your body organs?



Show Image 4A-2: Eye, heart, lungs, and stomach

Your eyes and ears are organs. Your heart and lungs are organs. Your stomach is an organ, too. Which of your body organs is the largest? It's your skin! Does that surprise you? You've looked at skin cells through the microscope, and we've talked about the epithelial tissue that these cells form. So, while it may seem odd to think of skin as an organ, it does make sense, doesn't it? Strong epithelial tissue, also made up of tiny cells, forms an organ with a very large protective covering, the skin.

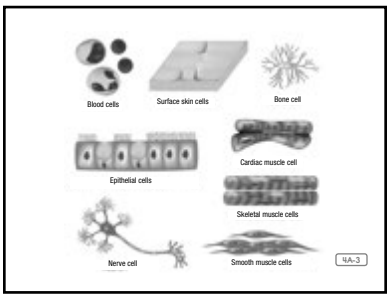
Support

Remind students that they learned that cells form tissue.

Support

Have students refer to Poster 1 to remind them of the various organs.

TEKS 2.6.C Make and correct or confirm predictions using text features, characteristics of genre, and structures; **TEKS 2.6.G** Evaluate details read to determine key ideas; **TEKS 2.3.B** Use context within and beyond a sentence to determine the meaning of unfamiliar words.



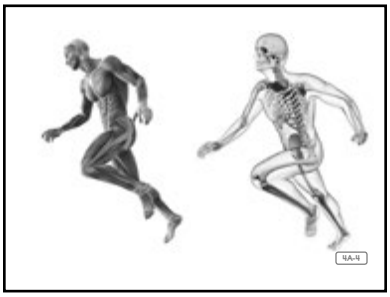
Show Image 4A-3: Four types of tissue (epithelial, connective, muscle, and nervous tissue)

You've learned about four different types of body tissues. What are the names of all four types of body tissues? One is epithelial, the tissue that forms your skin. What are the other three? The other three are connective, muscle, and nervous tissue. Each different type of tissue is made up of similar cells that do the same jobs. All body tissues are made up of cells. And all body organs are made up of tissues. Cells. Tissues. Organs. *[Illustrate this concept by drawing three concentric circles. On the innermost circle, write the word* cells*. On the middle circle, write the word* tissues*. And on the outer circle write the word* organs*.*

The systems of the human body are organ systems. *What are systems?* (sets of connected parts that work together to perform a job) An organ is a part of the body with a clearly defined function, or job, to perform. Most organs are involved in just one body system. There are ten major organ systems in the human body.

Support

On the board/chart paper, write the words *cells*, *tissues*, *organs*, and *systems* vertically in a column. Draw arrows between the words, showing the progression from *cells* at the top to *systems* at the bottom.

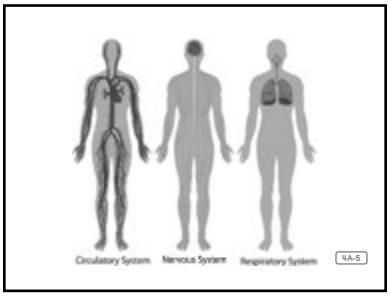


Show Image 4A-4: Muscular system and skeletal system

What body systems are in charge of helping you move? You may have learned last year about the skeletal and muscular systems. Your skeletal system is made up of bones and other organs. Its skeletal tissues work together with the smooth muscle tissues in your muscular system to make your body move.

Support

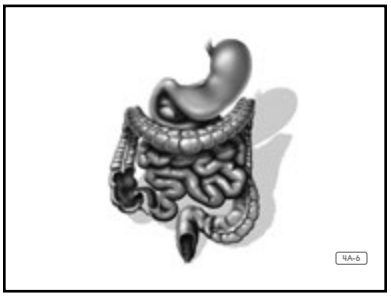
Point to each system on Poster 2 as you read about it.



Show Image 4A-5: Circulatory system, nervous system, and respiratory system

What does the circulatory system do? It circulates, or moves, your blood around to all parts of your body.

Your heart and blood, made up of cells and tissues, are the organs of your circulatory system. The respiratory system includes your lungs—organs made up of cells and tissues—that control your breathing. What does the nervous system do? It sends messages along the spinal cord to the brain. These two organs, the spinal cord and the brain, are both made up of nervous tissues, full of tiny nerve cells.



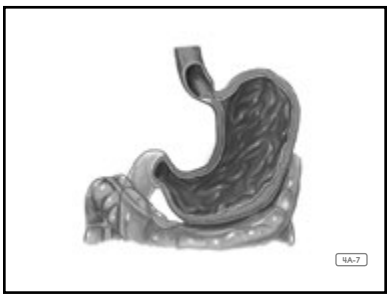
Show Image 4A-6: Digestive system
Which organ system includes your stomach? Yes, it is the digestive system. Your stomach works closely with other organs, each made up of different types of tissues and different types of cells to perform different types of jobs. Soon, you will be able to name all of the other organs that work together with your stomach to help digest, or break down, your food.

Sometimes your organs are a combination of different types of tissue.

The stomach is one of those organs. It is made up of many layers, including all four main types of tissue. These tissues play a very important role in the digestion of your food. We'll take a quick peek at part of your digestive system now. Let's look at the inside of your stomach to see where these four types of stomach tissue live.

Support

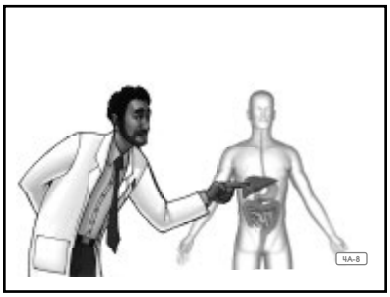
Review the four types of tissue: connective, muscle, nervous, and epithelial.



Show Image 4A-7: Cross-section of the stomach
From inside to outside, the first layer of tissue that you see is epithelial tissue. *[Point to the relevant layers in the image as you read about them, moving from the outside to the inside of the stomach.]* Remember what epithelial tissue does? It is tightly packed, arranged in a layered sheet to cover and protect the organ. Beneath the epithelial tissue is connective tissue, primarily blood that carries—or connects—nutrients to the cells. *What are nutrients?* (nourishing substances necessary for growth and the maintenance of life) Smooth muscle tissue lies underneath the connective tissue and helps to move food around in the stomach. Stomach muscles squeeze together about three times per minute, continuing to squeeze whether there is food in your stomach or not. It is the squeezing of

these muscles that produces the loud rumbling noise you sometimes hear when your stomach is nearly empty. The fourth type of body tissue, nervous tissue, is located in the stomach wall. It constantly sends signals to the brain and makes sure that all other parts are working smoothly.

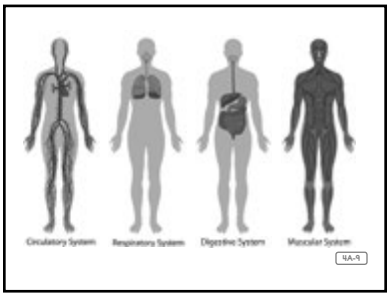
Every organ in your body depends upon other organs to work in the right way. When you study the digestive system more thoroughly in the next lesson, you will see that the stomach could not perform the job of the entire system on its own. It needs help.



Show Image 4A-8: Nick Nutri pointing out the liver

Have you ever heard of the **liver**? Your liver is an organ located above your stomach that your stomach depends upon to do its job. Together with two other organs, known as the pancreas and the gallbladder, the liver produces digestive juices to help break down your food. Your liver is one of the largest organs of the body, working as part of several different systems to perform different body functions. You cannot live without your liver. Next time, you will learn more about the very important role that the liver plays in the digestive system.

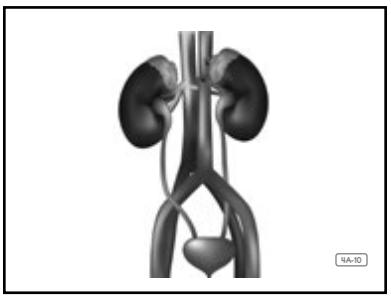
Organs depend on one another. So do the body's systems. Each system depends upon the other systems to make sure that your body works properly.



Show Image 4A-9: The circulatory, respiratory, digestive, and muscular systems

For example, blood is carried to all parts of your body through the circulatory system. The circulatory system depends upon the respiratory system to get oxygen into the bloodstream. Your blood would have no nutrients in it without the help of the digestive system to break down your food. Working together, these different systems provide your cells with the food and oxygen they need so that energy can be supplied to all your other systems. Without energy, your muscles couldn't move your bones; without energy, your brain could not think.

When organs stop working properly, body systems break down. The body stops functioning well and you become ill. If your lungs **collapse**, *or cave in* there is not enough oxygen to feed, or **nourish**, your cells with the things they need to live and grow. If your heart stops, it will no longer pump blood with the necessary nutrients to other parts of your body. When you're doing things like riding your bike, or playing certain sports, it's very important to protect your head by wearing a helmet. A head injury might result in damage to your brain, and this might prevent messages from going back and forth between the brain, the nervous system, and other parts of your body.

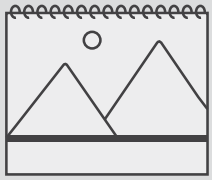


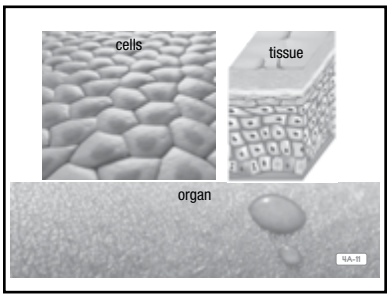
Show Image 4A-10: Kidneys

A donor is a person who donates, or gives, something. Have you ever heard of an organ donor? Believe it or not, an organ donor gives away an organ to save another person's life. Fortunately, modern science has made it possible to replace damaged organs.

Sometimes when people are very ill, but still have healthy body organs, they decide to donate their healthy organs to others when they die. Sometimes it is even possible for people to spare an organ and go on living healthy lives themselves. For example, you have two **kidneys**. Kidneys are a pair of organs located in your lower back. You will learn more about these two very important organs in another lesson. Your kidneys clean poisonous waste from the blood flowing through the body, preventing many different types of disease. You can live a healthy life with only one kidney, so this is one organ that can be donated to someone who needs a kidney. Doctors today can take a kidney from one person's body and **transplant**, or move, it into another person's body to keep them alive. Doesn't that sound like a miracle? I think so.

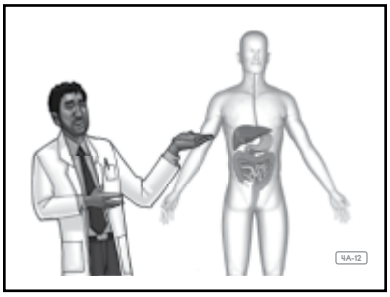
Poster 3





Show Image 4A-11: Progression: Cells, tissue, organ

Cells. Tissues. Organs. Systems. *[Point to image and Poster 3 (Cells, Tissues, Organs, Systems). Show students the progression.]* The human body is organized into four different levels. Cells are the building blocks of the body. Without cells, there would be no body tissue, no body organs, and no body systems. In fact, without cells there would not be a single living person or thing on Earth!



Show Image 4A-12: Nick Nutri pointing out the digestive system

The next time we gather together, we'll discuss the organs that work together to digest, or break down, your food. Today we looked inside your stomach, but your stomach is only one part of the food's journey as it travels through your body.

Can you name any of the organs that belong to the digestive system? *[Pause for suggestions.]* Great suggestions. With your help, we'll put that puzzle together soon. See you next time.

COMPREHENSION QUESTIONS (10 MIN.)

1. **Literal.** Name one of the important body organs that you heard about today. *(Answers may include: eyes, ears, heart, lungs, stomach, skin, bones, heart, spinal cord, brain, liver, pancreas, gallbladder, kidneys.)*

2. **Inferential.** The heart, skin, and bones are all organs. What does that tell you about the size, shape, and texture of body organs? *(They are all different. No two organs are the same.)*

Check for Understanding

What's the Connection? What is the connection between tissues and organs? *(Organs are made up of tissues.)*

3. **Literal.** Cells group together to form tissues; tissues group together to form organs. What do groups of organs form? *(systems)*

Challenge

As students name an organ, have them describe its function.

ENGLISH LANGUAGE LEARNERS

Speaking and Listening

Exchanging Information and Ideas

Beginning
Reframe open-ended questions as simple *yes/no* questions (e.g., Are body organs different from one another?").

Intermediate
Provide students with a specific sentence frame (e.g., "The heart looks similar to/different from the skin.").

Advanced/ Advanced High
Encourage students to use key details from the text in complete sentences when responding to a question.

ELPS 2.G; ELPS 3.F

WORD WORK: NOURISH (5 MIN.)

1. In the Read-Aloud you heard, "If your lungs collapse, there is not enough oxygen to feed, or nourish, your cells with the things they need to live and grow."
2. Say the word *nourish* with me.
3. *Nourish* means to provide with food or other substances necessary for growth.
4. The school cafeteria provides a variety of foods that help nourish our growing bodies.
5. Think of one of your favorite foods/drinks that you eat/drink to nourish your body. Use the word *nourish* when you tell us about it. [Ask two or three students. If necessary, guide and/or rephrase students' responses: "I nourish my body by eating/drinking . . . "]
6. What's the word we've been talking about?

Use a Making Choices activity for follow-up. I am going to name some foods and drinks. If it is a food or drink with nutrients that will nourish your body, or help it grow, say, "That will nourish me." If it is not a food or drink that will nourish your body, say, "That will not nourish me." Remember to answer in complete sentences.

- soda *(That will not nourish me.)*
- eggs *(That will nourish me.)*
- jelly beans *(That will not nourish me.)*
- black beans *(That will nourish me.)*
- carrots *(That will nourish me.)*

Lesson 4: Organs

Application

20M

Reading: Students will identify the connections between cells, tissue, organs, and systems.

TEKS 2.6.H

WHAT'S THE CONNECTION? (15 MIN.)

- Have students turn to Activity Page 4.1.

Check for Understanding

Turn and Talk: Talk with your partner about the connections between cells, tissues, organs, and systems.

[Have several students share their responses with the class. *(Groups of similar cells form tissues; tissues form organs; and organs make up systems.)*]

- Have students use the word bank at the top of Activity Page 4.1 to complete the chart.
- Use Poster 3 to review the correct progression.

TEKS 2.6.H Synthesize information to create new understanding.

Activity Page 4.1

Support

If you wrote the progression from cells to systems on the board/chart paper during the Read-Aloud in connection with Image 4A-3, or still have Poster 3 on display, remove those now.

ENGLISH LANGUAGE LEARNERS

Speaking and Listening

Selecting Language Resources

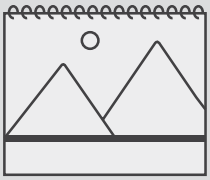
Beginning
Have students use one or two domain-related words to describe the connections.

Intermediate
Have students use three or four domain-related words to describe the connections.

Advanced/ Advanced High
Have students use five or more domain-related words to describe the connections.

ELPS 1.E; ELPS 3.D

Poster 2M



Support

Provide the following example: "You could say, 'I keep a tissue in my backpack in case I need to wipe my nose when I'm at school.' Your partner would respond, 'That's two.'"

MULTIPLE MEANING WORD ACTIVITY (5 MIN.)

Multiple Choice: Tissue

Show Poster 2M (Tissue)

- Remind students that they heard in the previous Read-Aloud, "Tissue is a collection of the same kind of cells working together to do the same job." Have students identify the image in the poster that demonstrates this meaning of the word *tissue*. *(one)*
- *Tissue* can also mean other things, such as a piece of soft and very thin paper that is used especially for cleaning. Have students identify the picture that represents this definition of *tissue*. *(two)*
- Have students work with a partner to quiz each other on the different meanings of the word *tissue*. Remind them to be as descriptive as possible and use complete sentences.

End of Lesson

Grade 2 | Knowledge 9

Pausing Point

NOTE TO TEACHER

You should pause here and spend two days reviewing, reinforcing, or extending the material taught thus far.

You may have students do any combination of the activities listed below, but it is highly recommended you use the Mid-Domain Assessment to assess students' knowledge of body systems and their organizational levels, including cells, tissues, and organs. The other activities may be done in any order. You may also choose to do an activity with the whole class or with a small group of students who would benefit from the particular activity.

CORE CONTENT OBJECTIVES UP TO THIS PAUSING POINT

Students will:

- Identify the five senses and associated body parts
- Identify the skeletal, muscular, circulatory, nervous, digestive, and excretory systems as important systems in the human body
- Describe the significant contributions of Anton van Leeuwenhoek
- Explain that all living things are made of microscopic cells
- Describe the relationship between cells, tissues, organs, and systems

MID-DOMAIN ASSESSMENT

Cells, Tissues, Organs, and Systems

- Use Activity Page PP.1 to identify Anton van Leeuwenhoek's discovery and to assess students' knowledge of the relationship among cells, tissues, organs, and systems.
- Part I: Read each statement to students and tell them to put an X beside the statement that best describes Anton's contribution to the world.
- Part II: Read each sentence to students, as well as the word choices in the word bank, to ensure understanding. Tell students that not all words in the word bank are used and that some are used more than once.

Activity Page PP.1

ACTIVITIES

Riddles for Core Content

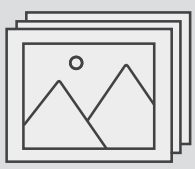
- Ask students riddles such as the following to review core content:
  - I am one of your sense organs, the largest body organ. What am I? *(skin)*
  - I am the system responsible for circulating, or moving, blood to all other systems. What am I? *(circulatory system)*
  - I am an instrument used to view microscopic organisms. What am I? *(microscope)*
  - I am the system responsible for carrying oxygen to your lungs so that you can respire, or breathe. What am I? *(respiratory system)*
  - I work with your sense of taste to make eating pleasurable for you. What am I? *(sense of smell)*
  - I am one of the body's building blocks, the smallest unit of life that can carry out functions of living things. What am I? *(cell)*
  - I am a curved piece of glass used to magnify objects on a microscope. What am I? *(lens)*
  - I am the softest and most abundant tissue in the human body. What am I? *(muscle tissue)*
  - I am a tiny, one-celled organism that Anton van Leeuwenhoek discovered when looking at water through a microscope. What am I? *(bacteria)*
  - I am made up of body tissues, groups of similar cells. What am I? *(an organ)*
  - I may live for a very short time, but when I die your body will replace me. What am I? *(a cell)*

Image Review

- You may show the Flip Book images from any Read-Aloud again and have students retell the Read-Aloud using the images.

Image Card Review

Image Cards 1–7



Materials: Image Cards 1–7

- Hold Image Cards 1–7 in your hand, fanned out like a deck of cards.
- Ask a student to choose a card but to not show it to anyone else in the class.
- The student must then say a clue about the picture they are holding.
  - For example, for tissues, a student may say that it is a group of similar cells.

- The rest of the class will guess what is being described.
- Proceed to another card when the correct answer has been given.

Cells, Tissues, Organs Image Cards Sequencing Activity

Materials: Image Cards 4–6

- Hold Image Cards 4–6 in your hand, fanned out like a deck of cards.
- Ask three students to choose one card and hold it over their heads so the rest of the class can see the card.
- Place the students in order from left to right: cells, to tissues, to organs.

Domain-Related Trade Book or Student Choice

Materials: Trade book

- Read a trade book to review concepts covered thus far in this domain. You may also choose to have students select a Read-Aloud to be heard again.

Key Vocabulary Brainstorming

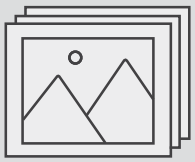
Materials: Chart paper, chalkboard, or whiteboard

- Give students a key vocabulary word, such as *microscope*.
- Have them brainstorm everything that comes to mind when they hear the word, such as "Anton van Leeuwenhoek made his own microscopes," etc.
- Record their responses on a piece of chart paper, a chalkboard, or a whiteboard for easy reference.

Guest Presenter

- Invite a scientist or science teacher to bring a microscope to class and demonstrate its use.
- Have them answer questions about the lenses and permit students to examine various things.

Image Cards 4–6



LESSON

5

THE HUMAN BODY: BUILDING BLOCKS AND NUTRITION

The Digestive System

PRIMARY FOCUS OF LESSON

Speaking and Listening

Students will review the connections between cells, tissues, organs, and systems.

TEKS 2.1.D

Reading

Students will identify the organs involved in the digestive system working collaboratively with others by following agreed-upon rules for discussion.

TEKS 2.1.D; TEKS 2.6.B

Language

Students will demonstrate an understanding of the Tier 2 word *absorb*.

TEKS 2.3.B

Writing

Students will write an entry in the *My Human Body Journal*, describing the digestive system.

TEKS 2.7.E

FORMATIVE ASSESSMENT

Activity Page 5.2

My Human Body Journal Students will write an entry in the *My Human Body Journal*, describing the digestive system.

TEKS 2.7.E

TEKS 2.1.D Work collaboratively with others by following agreed-upon rules for discussion, including listening to others, speaking when recognized, making appropriate contributions, and building on the ideas of others; **TEKS 2.6.B** Generate questions about text before, duringg to deepen understanding and gain information; **TEKS 2.3.B** Use context within and beyond a sentence to determine the meaning of unfamiliar words; **TEKS 2.7.E** Interact with sources in meaningful ways such as illustrating or writing.

LESSON AT A GLANCE

	Grouping	Time	Materials
Introducing the Read-Aloud (10 min.)			
What Have We Already Learned?	Whole Group	10 min.	❑ Posters 2–3 (Flip Book)
Read-Aloud (30 min.)			
Purpose for Listening	Whole Group	30 min.	❑ container with six cups of liquid ❑ Flip Book: 5A-1–5A-12
"The Digestive System"			
Comprehension Questions			
Word Work: *Absorb*			
This is a good opportunity to take a break.			
Application (20 min.)			
Sequencing the Digestive Process	Whole Group/ Independent	20 min.	❑ Image Cards 8–13 ❑ Activity Pages 5.1, 5.2
My Human Body Journal			
Take-Home Material			
Family Letter			❑ Activity Page 5.3

ADVANCE PREPARATION

Read-Aloud

- Prepare a container with six cups of liquid to demonstrate how much saliva is produced per person per day.

CORE VOCABULARY

absorb, v. to take in or soak up a substance, often gradually
Example: The ground will absorb most of the water when it rains.
Variation(s): absorbs, absorbed, absorbing

esophagus, n. a muscular tube that connects the throat to the stomach
Example: Gordon swallowed a piece of cheese and imagined it passing down his esophagus into his stomach.
Variation(s): esophagi, esophaguses

filtering, v. removing unwanted materials
Example: The water plant is filtering unsafe elements from our drinking water all day and all night.
Variation(s): filter, filters, filtered

saliva, n. a watery liquid in the mouth that helps soften food, making it easier to swallow
Example: My mouth filled with saliva while the dentist worked on my teeth.
Variation(s): none

villi, n. the small finger-like threads inside the small intestine through which nutrients from food are absorbed into the body
Example: The villi inside the small intestine are essential for absorbing nutrients from food and providing the body with these nutrients.
Variation(s): villus

Vocabulary Chart for "The Digestive System"

Type	Tier 3 Domain-Specific Words	Tier 2 General Academic Words	Tier 1 Everyday Speech Words
Vocabulary	esophagus saliva *(saliva)* villi	absorb *(absorber)* filtering	
Multiple Meaning			
Sayings and Phrases	liquid diet teeth came in mouthwatering solid waste		

Start Lesson

Lesson 5: The Digestive System

Introducing the Read-Aloud

10M

Speaking and Listening: Students will review the connections between cells, tissues, organs, and systems.

TEKS 2.1.D

WHAT HAVE WE ALREADY LEARNED?

Check for Understanding

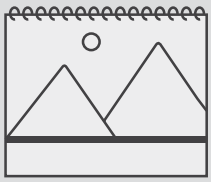
Turn and Talk: Talk with your partner about the connections between cells, tissues, organs, and systems, using Poster 3 as a guide for your discussion.

[Have several students share their responses with the class. *(groups of similar cells form tissues; tissues form organs; and organs make up systems.)*

- Tell students that, in the next two Read-Alouds, they will be hearing about two of the body's systems, starting with the digestive system.
- Explain that today students will learn about the organs that play a role in the digestive system.
- Have students identify one of the main organs of the digestive system. *(stomach)*
- Explain that students will learn about several more organs in addition to the stomach. Explain that most of the digestive system's organs are located in the abdomen, sometimes called the belly.

TEKS 2.1.D work collaboratively with others by following agreed-upon rules for discussion, including listening to others, speaking when recognized, making appropriate contributions, and building on the ideas of others.

Posters 2–3



ENGLISH LANGUAGE LEARNERS

Speaking and Listening

Selecting Language Resources

Beginning
Have students use one or two domain-related words to describe the connections.

Intermediate
Have students use three or four domain-related words to describe the connections.

Advanced/ Advanced High
Have students use five or more domain-related words to describe the connections.

ELPS 1.E; ELPS 3.D

Challenge

Have students identify which system on Poster 2 is the digestive system. *(the fourth from the left)*

Support

Have students touch their bellies. Tell them that their abdominal organs, the primary digestive organs, are found in this area.

Lesson 5: The Digestive System

Read-Aloud

30M

Reading: Students will identify the organs involved in the digestive system working collaboratively with others by following agreed-upon rules for discussion.

TEKS 2.1.D; TEKS 2.6.B

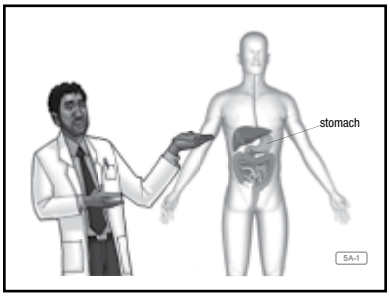
Language: Students will demonstrate an understanding of the Tier 2 word *absorb*.

TEKS 2.3.B

PURPOSE FOR LISTENING

Tell students to listen carefully to hear which organs are involved in the digestive system.

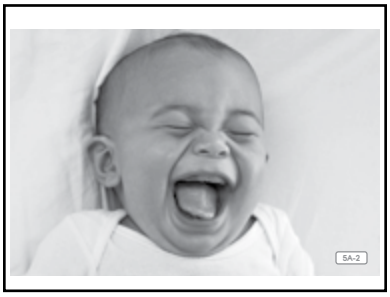
"THE DIGESTIVE SYSTEM" (15 MIN.)



Show Image 5A-1: The digestive system

Ah, boys and girls, when I look at you I can't tell whether you are hungry or whether you have just had a meal. But one thing I do know is that everybody in this room has a digestive system and that all of your digestive systems are working right now. There is a lot going on inside those bodies of yours!

You each eat several hundred pounds of food in one year. It takes roughly twenty hours for food to travel through your gut, or digestive tract, a long, complicated series of tunnels with openings at both ends. Where does the journey begin? Yes, the process *or series of steps* of digestion begins when you put a piece of food in your mouth.



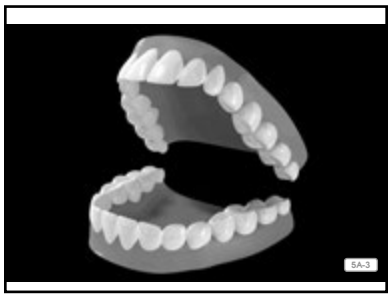
Show Image 5A-2: Toothless baby

When you were born, most of your teeth were hiding inside your gums. That's why babies start out with a liquid diet. *A liquid diet is nutrition you can drink. Babies start out drinking their food, which is mainly milk.* But once your first set of teeth came in, you were able to eat solid foods. You are at an age right

TEKS 2.1.D Work collaboratively with others by following agreed-upon rules for discussion, including listening to others, speaking when recognized, making appropriate contributions, and building on the ideas of others; **TEKS 2.6.B** Generate questions about text before, during, and after reading to deepen understanding and gain information; **TEKS 2.3.B** Use context within and beyond a sentence to determine the meaning of unfamiliar words.

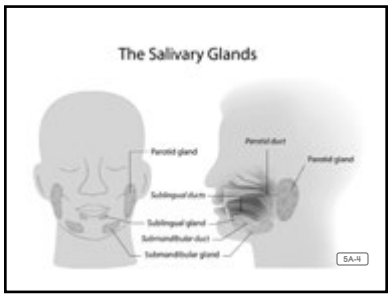
now when you are probably losing some of those teeth and getting a new set. If so, maybe you are finding it hard to chew certain foods.

Your teeth help you break your food down into tiny pieces. The longer you chew, the smaller the pieces become, and the easier it is to digest.



Show Image 5A-3: Teeth

Human teeth come in different shapes and sizes, designed to eat both plants and animals. Let's take a look at the different types of teeth you have in your mouth. The flat, wedge-shaped teeth at the front of your mouth are called incisors. *The incisors are thicker at one end than the other, similar to a piece of pie. [Point to the incisors on the image.]* The incisors, both top and bottom, work together like a pair of scissors to bite, slice, and cut up your food. Next to the incisors are sharp, fang-like teeth called canines, or dogs' teeth. These teeth tear and rip food apart, the way that dogs do with a piece of meat. Behind the canines, bicuspids help to crush the food. In the back of the mouth, wide teeth with bumpy tops known as molars help grind the food into mush. *With your tongue, touch the teeth in your mouth. Do you notice the different shapes your teeth have?* Next time you bite into a piece of chicken, sample a piece of cheese, or chomp into an apple, see if you can tell which teeth help you the most.



Show Image 5A-4: Salivary glands

Have you ever heard someone call food "mouthwatering"? What do you think that means? When you smell your favorite food, perhaps spaghetti and meatballs, your mouth probably starts to water as you think about how good it will taste. That watery substance is called **saliva**. Saliva comes from small salivary glands *or organs* in your cheek and under your tongue. It helps keep your mouth damp and softens food as you chew, beginning to break food down for easy digestion. Saliva serves another important job as well, helping to wash away and kill bacteria. *What is another word for unwanted bacteria?* (germs)

Did you know that every day you produce as many as six cups of saliva in your mouth?

Can you feel it? Can you taste it?

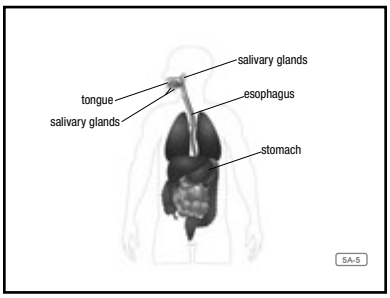
What else do you have in your mouth besides your teeth and saliva?

Support

Explain that germs are everywhere.

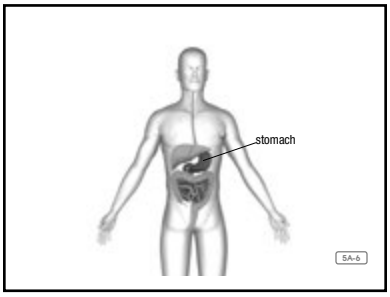
Support

Show students the container with six cups of liquid.

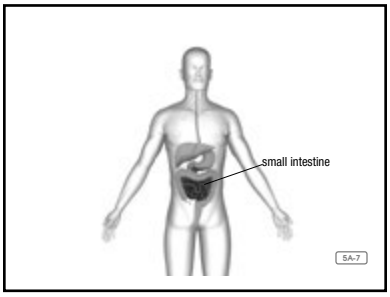


Show Image 5A-5: Upper digestive system
What's the name of that fleshy muscle in your mouth that is covered in taste buds? *Taste buds are clusters of nerve endings.* Your tongue, of course! Not only does your tongue help you taste your food, it also helps push the food around your mouth, rolling it into a mashed up, wet lump of food.

Your tongue pushes the lump of food to the back of your mouth and helps you swallow. Once food is swallowed, it passes into a food canal called the **esophagus**. This stretchy tube is only about ten inches long, leading from the back of your throat, through your neck and chest, to your stomach. Food passes through the esophagus quickly. Muscles squeeze together and push the food into the stomach in about ten seconds or less. It's a lot like squeezing toothpaste from its tube.

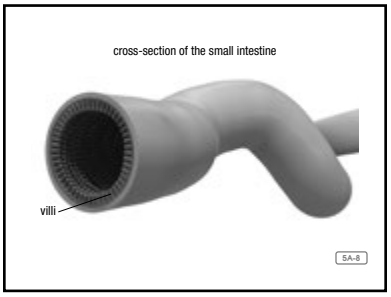


Show Image 5A-6: Middle digestive system
Put your hand on the left side of your upper abdomen, just below your chest and above your waist. That's where your stomach lives, behind your lower ribs. This human mixing machine is shaped a bit like the letter 'J'. Your stomach acts like a balloon, expanding to hold the food it receives. The stomach's gastric juices help break down the food into a paste-like substance. These digestive juices also kill any germs that may have been swallowed. Round and round food churns for three to four hours as muscles squeeze inside the stomach walls. Once it is the substance of a thick soup, the food continues its journey into the intestines.



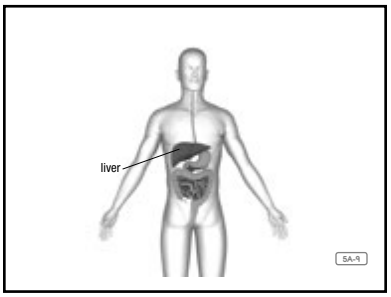
Show Image 5A-7: Lower digestive system
There are two types of intestines—the small intestine and the large intestine. The intestines are tubes located in the lower abdomen through which food and food waste travel. Even though there are two different kinds of intestines—the small and the large intestines, they are actually part of the same, long, single tube. A muscular gate, or sphincter, at the

bottom of the stomach opens to allow food to flow from the stomach into the small intestine. The small intestine is about twenty-one feet long, or about as long as five seven-year-olds lying head to toe. Even though it's longer than the large intestine, it's called the small intestine because it's much thinner than the large intestine. This narrow tube, the small intestine, is coiled up like a snake below your belly button. Muscles squeeze together and push the mashed-up-soupy liquid along the curly, small intestine. The food is mixed once more with digestive juices from the liver, pancreas, and gallbladder, other organs that are part of your digestive system. The juices, called enzymes, break the food down and make it more and more watery along the way.



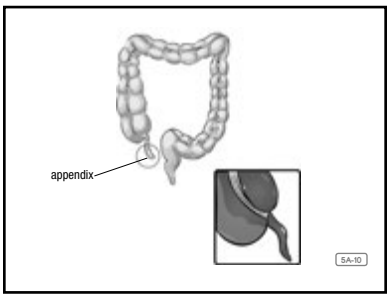
Show Image 5A-8: Cross section of the small intestine

The small intestine, with its millions of **villi**, or finger-like threads, is where some of the most important work of the digestive system takes place. *[Point to the villi on the image.]* The villi reach out and **absorb**, or soak up, usable nutrients and water, passing them through the bloodstream into all the cells of your body. Did you ever hear rumbling sounds coming from inside you? Chances are they are coming from your small intestine as muscles contract, or squeeze together, to break down food. They are the sounds of a healthy gut!



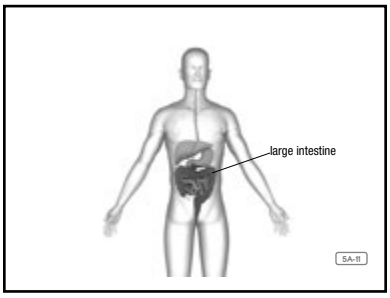
Show Image 5A-9: The role of the liver in the digestive process

Most of the nutrients that are absorbed by the small intestine's many villi travel to the reddish-purplish liver, one of your body's important cleansing organs. *What does it mean when something is absorbed?* (It is soaked up.) Your lower ribs on the right side of your body protect your liver. Its function is to clean the blood, **filtering**, or straining out, any leftover waste. It turns this waste into bile, one of the juices used by the small intestine to help digest your food. The clean blood, with lots of nutrients, is carried to muscles to make them stronger, to bones to make them harder, and to every other part of your body to give you energy to help you grow. Since blood goes to every part of your body, the liver performs a very important function of making sure the blood circulating in your body is clean.



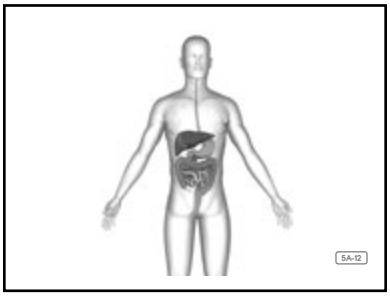
Show Image 5A-10: The appendix

[Point to the image of the appendix.] This finger-shaped organ is called the appendix. As far as anyone knows, it doesn't seem to be useful to the digestive system. From time to time, the appendix can become infected, or sick, and cause a disease called appendicitis. When people get appendicitis, they get a very sharp pain in the lower abdomen in the area surrounding the intestines. The pain comes from the appendix, located in the lower right side of your abdomen, near your hip bone. When it causes too much pain, doctors remove it. For many years, the appendix was considered a completely useless organ. Only recently have some doctors begun to think that the appendix may serve to fight infections, *or kill germs.*



Show Image 5A-11: Lower digestive system

The appendix is located right where the small intestine widens out into the large intestine. The large intestine is where the solid waste ends up. *When something is solid, it is not liquid, or a gas.* Even though the large intestine is much, much shorter than the small intestine, it is called the large intestine because it is much wider. Parts of food not digested in the small intestine are squeezed out into the large intestine where they remain for up to two days. Water is absorbed from the waste into the walls of the large intestine and passed into the bloodstream. The waste becomes thicker and thicker, piling up into a solid mass known as feces. Feces are stored in the rectum, the final section of the large intestine, until another muscular gate, or sphincter, opens and allows the feces to pass through the anus, the body's exit point for solid waste.



Show Image 5A-12: The digestive system

[Point to each of the relevant digestive organs as you read about it.] That is the end of your food's journey—from mouth to esophagus to stomach to small intestine to large intestine to anus. *How does this image help you understand this part of the Read-Aloud?* The digestive system's organs are working all the time, day and night, to process food into substances that your body can use, providing you with the nutrients and energy you need.

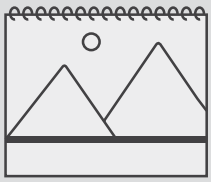
COMPREHENSION QUESTIONS (10 MIN.)

Check for Understanding

Identification: [Show Image 5A-12. Have students take turns pointing to the organs in the digestive system and identifying each organ.]

1. **Inferential.** You learned that both saliva and gastric juices work to kill germs. Why is that necessary? How do germs get into your body? *(Germs are everywhere, and it is impossible not to breathe them through the air and ingest them with our food.)*
2. **Inferential.** You learned that the liver filters waste from your blood. Why is it important to have clean blood? *(Blood travels to all parts of your body, and it would not be good to have waste circulating through the body.)*
3. **Evaluative.** *What? Pair-Share:* Think of a question you could ask your neighbor about the Read-Aloud that starts with the word *what*. For example, you could ask, "What organ filters the blood?" Turn to your neighbor and ask your *what* question. Listen to your neighbor's response. Then your neighbor will ask a new question and you will get a chance to respond. I will call on several of you to share your questions with the class. **TEKS 2.1.D**

Flip Book 5A-12



Challenge

Have students explain the function of each organ as it is identified.

ENGLISH LANGUAGE LEARNERS

Speaking and Listening

Exchanging Information and Ideas

Beginning
Reframe open-ended questions as simple *yes/no* questions (e.g., "Does blood travel to all parts of the body?").

Intermediate
Provide students with a specific sentence frame (e.g., "It is important that blood not contain waste because . . .").

Advanced/ Advanced High
Encourage students to use key details from the text in complete sentences when responding to a question.

ELPS 2.G; ELPS 3.F

TEKS 2.1.D Work collaboratively with others by following agreed-upon rules for discussion, including listening to others, speaking when recognized, making appropriate contributions, and building on the ideas of others.

WORD WORK: ABSORB (5 MIN.)

1. In the Read-Aloud you heard, "The villi reach out and absorb usable nutrients and water, passing them through the bloodstream into all the cells of your body."
2. Say the word *absorb* with me.
3. *Absorb* means to soak in a substance.
4. The paper towel will absorb the spilled water.
5. Think of a material that will absorb, or soak up, a substance easily. Use the word *absorb* or *absorbed* when you tell about a time you saw this happen. [Ask two or three students. If necessary, guide and/or rephrase students' responses: "The grass absorbed _____"]
6. What's the word we've been talking about?

Use a Making Choices activity for follow-up. I am going to name two words. You need to respond with a simple sentence, saying "_____ absorbs _____," using the words in the correct order. For example, if I said, "pancakes" and "syrup," you would respond, "Pancakes absorb syrup," because syrup is soaked up by the pancakes, not the other way around. Remember to use the word *absorbs*: "_____ absorbs _____."

- trees/rainwater *(Trees absorb rainwater.)*
- saliva/food *(Food absorbs saliva.)*
- urine/diapers *(Diapers absorb urine.)*
- towels/bathwater *(Towels absorb bathwater.)*
- nutrients/villi *(Villi absorb nutrients.)*

Lesson 5: The Digestive System

Application

20M

Writing: Students will write an entry in the *My Human Body Journal*, describing the digestive system. TEKS 2.7.E

SEQUENCING THE DIGESTIVE PROCESS (10 MIN.)

- Hold Image Cards 8 (Mouth), 9 (Esophagus), 10 (Stomach), 11 (Small Intestine), 12 (Large Intestine), and 13 (Rectum and Anus) in your hand, fanned out like a deck of cards.
- Hand one card to each of six students. Have those students look at their cards and determine the correct sequence for the digestive process.
- Have the students with the cards stand in the front of the room in the order they think is correct.
- Have the rest of the class ask those students questions about why they think they have the proper sequence of events. Have students with the cards reorder themselves until they have the proper sequence.
- Have students independently complete Activity Page 5.1 reflecting the proper sequence of events in the digestive process.

MY HUMAN BODY JOURNAL (10 MIN.)

- Tell students that they are going to write another entry for the *My Human Body Journal* describing the digestive system.
- Explain that students will use Activity Page 5.2 to write this journal entry.

Check for Understanding

Recall: What organs are involved in the upper and middle parts of the digestive system? *(mouth, esophagus, stomach)*

With your partner, discuss one thing you learned about the digestive system. Listen to your partner's statement, and then build on that statement to say something else about your partner's comment. For example, your partner might say, "The digestive process starts when someone puts food in his mouth." You could respond, "The food then gets broken down in the mouth by the teeth and saliva."

Activity Page 5.1

Image Cards 8–13

Support

Reread relevant parts of the Read-Aloud, as needed.

Activity Page 5.2

TEKS 2.7.E Interact with sources in meaningful ways such as illustrating or writing.

ENGLISH LANGUAGE LEARNERS

Writing

Writing Informational Text

Beginning
Allow students to dictate their journal entries to an adult.

Intermediate
Allow students to collaborate with a peer to write their journal entries.

Advanced/ Advanced High
Have students work independently to write their journal entries.

ELPS 5.F

- Have students work independently to complete Activity Page 5.2. Explain that they should write two to three sentences about the digestive system: one introductory sentence and one or two sentences with details about the digestive system.
- Have students add an illustration at the top of Activity Page 5.2 that supports their writing.
- Have several students share their journal entry with the class.
- Save the journal pages to assemble into individual student journals at the end of the domain, but consider making copies of the pages for inclusion in the students' writing portfolios.

End of Lesson

Lesson 5: The Digestive System

Take-Home Material

FAMILY LETTER

- Send home Activity Page 5.3.

Activity Page 5.3

LESSON

6

THE HUMAN BODY: BUILDING BLOCKS AND NUTRITION

The Excretory System

PRIMARY FOCUS OF LESSON

Speaking and Listening

Students will review the parts of the digestive system.

TEKS 2.1.D

Reading

Students will identify organs involved in the excretory system.

TEKS 2.6.F

Language

Students will demonstrate an understanding of the Tier 3 word *toxic*.

TEKS 2.3.B

Writing

Students will write an entry in the *My Human Body Journal*, describing the excretory system.

TEKS 2.7.B

FORMATIVE ASSESSMENT

Activity Page 6.3

My Human Body Journal Students will write an entry in the *My Human Body Journal*, describing the excretory system.

TEKS 2.7.B

TEKS 2.1.D Work collaboratively with others by following agreed-upon rules for discussion, including listening to others, speaking when recognized, making appropriate contributions, and building on the ideas of others; **TEKS 2.6.F** Make inferences and use evidence to support understanding; **TEKS 2.3.B** Use context within and beyond a sentence to determine the meaning of unfamiliar words; **TEKS 2.7.B** Write brief comments on literary or informational texts that demonstrate an understanding of the text.

LESSON AT A GLANCE

	Grouping	Time	Materials
Introducing the Read-Aloud (10 min.)			
What Have We Already Learned?	Whole Group/ Partner	10 min.	❑ Activity Page 6.1 ❑ Digestive System Matchup (Digital Components)
Read-Aloud (30 min.)			
Purpose for Listening	Whole Group	30 min.	❑ Flip Book: 6A-1–6A-7
"The Excretory System"			
Comprehension Questions			
Word Work: *Toxic*			
This is a good opportunity to take a break.			
Application (20 min.)			
Excretory System Matchup	Whole Group/ Partner/ Independent	20 min.	❑ Activity Pages 6.2, 6.3 ❑ Excretory System Matchup (Digital Components)
My Human Body Journal			
Vocabulary Instructional Activity: Maintain			

ADVANCE PREPARATION

Introducing the Read-Aloud

- Display an enlarged version of Activity Page 6.1. Alternatively, you may access a digital version of the Digestive System Matchup in the digital components for this domain.

Application

- Display an enlarged version of Activity Page 6.2. Alternatively, you may access a digital version of the Excretory System Matchup in the digital components for this domain.

CORE VOCABULARY

bladder, n. a balloon-like sac in which urine collects before it is excreted from the body
Example: When I drink lots of water, my bladder seems to fill up very quickly.
Variation(s): bladders

excrete, v. to force out or get rid of
Example: Our bodies excrete moisture in the form of sweat and urine.
Variation(s): excretes, excreted, excreting

regulate, v. to control something
Example: My mom and dad regulate how much television I get to watch.
Variation(s): regulates, regulated, regulating

sweat, n. moisture that comes out of the skin's pores due to exercise, fever, heat, or fear; perspiration
Example: Sweat ran down my face after I took part in a relay race.
Variation(s): none

toxic, adj. poisonous
Example: The chemical factory dumped toxic waste into the river.
Variation(s): none

Vocabulary Chart for "The Excretory System"

Type	Tier 3 Domain-Specific Words	Tier 2 General Academic Words	Tier 1 Everyday Speech Words
Vocabulary	bladder excrete toxic *(tóxico/a)*	regulate	
Multiple Meaning	sweat		
Sayings and Phrases	solid waste liquid waste		

Start Lesson

Lesson 6: The Excretory System

Introducing the Read-Aloud

10M

Speaking and Listening: Students will review the parts of the digestive system.

TEKS 2.1.D

WHAT HAVE WE ALREADY LEARNED?

- Have students identify the purpose of the digestive system and some of the organs involved in that system. *(The purpose of the digestive system is to process food, breaking it down into nutrients that the body can use, and then getting rid of waste that the body can't use. Answers may vary, but may include the tongue, esophagus, stomach, large intestines, and small intestines.)*

Activity Page 6.1

Check for Understanding

With a Partner: Work with your partner to complete Activity Page 6.1 to match the words in the word bank with the parts of the digestive system in the image.

- As a group, have students complete the enlarged version of Activity Page 6.1 with the correct answers.
- Have students identify an organ of the digestive system that cleans the blood. *(liver)*
- Tell students that today they are going to learn about a pair of organs that are part of the excretory system and that filter waste from the blood.

TEKS 2.1.D Work collaboratively with others by following agreed-upon rules for discussion, including listening to others, speaking when recognized, making appropriate contributions, and building on the ideas of others.

Lesson 6: The Excretory System

Read-Aloud

30M

Reading: Students will identify organs involved in the excretory system.

TEKS 2.6.F

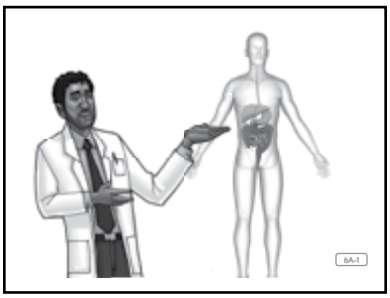
Language: Students will demonstrate an understanding of the Tier 3 word *toxic*.

TEKS 2.3.B

PURPOSE FOR LISTENING

- Tell students to listen carefully to learn the names of the organs involved in the excretory system.

"THE EXCRETORY SYSTEM" (15 MIN.)



Show Image 6A-1: Nick Nutri and the lower digestive system

Humans are exposed to lots of toxins, or poisons, in the environment. Your body may take in toxins through the air or through the food that you eat. If these toxins hang around in your body too long, they may become **toxic**, or poisonous, to you. The amazing human body has ways of getting rid of these toxins before they become harmful.

The last time we met, you learned how your digestive system works to process food into usable nutrients, separating the nutrients from the sometimes-toxic waste materials. *What are nutrients?* At the end of the digestive process, some food is not completely broken down by the intestines. *What are the intestines?* This leftover solid waste, called feces, is pushed out of your anus at the end of the digestive tract.

Bowel movements contain your body's solid waste, but what happens to the body's liquid waste? Where does it go? Some waste leaves your body through your skin. Other waste is processed through a system like the digestive system. Just as the digestive system processes solid waste, there is a system that processes liquid waste. It is called the excretory system. To **excrete** means to expel, or get rid, of something that is not needed. Toxins, or poisons, are definitely not needed in your body.

TEKS 2.6.F Make inferences and use evidence to support understanding; **TEKS 2.3.B** Use context within and beyond a sentence to determine the meaning of unfamiliar words.

Show Image 6A-2: Sweat

Let's begin by talking about the liquid waste that leaves the body through your skin. We call it **sweat**. What is another name for sweat? It is also called perspiration. You already know that your skin is the largest body organ. It covers your entire body surface. Sweat glands below the surface of the skin help rid the body of waste through perspiration. When you perspire, water, salt, and other waste flows out through these microscopic sweat glands. *Are we able to see these sweat glands?* (no) *What word in this sentence lets you know the sweat glands are not visible to the naked eye?* (microscopic) They are excreted from all parts of your body. If you do not bathe for a while, you can begin to smell this waste as it builds up on the surface of your skin.

The body's main liquid waste is urine, sometimes called pee. Urine is cleaner than spit. Unlike the saliva in your mouth, urine contains no bacteria. *What are bacteria?* It is about ninety-six percent water and four percent waste. This means that if urine were divided into one hundred parts, ninety-six parts would be water, and only four parts would be waste. Like feces, urine passes through several different organs as it makes its journey through your body. Today we will take a look at the organs that are a part of the excretory system.

Show Image 6A-3: The kidneys

The kidneys are the primary organs of excretion. Everybody, stand up for a minute so that I can make sure that you know where your kidneys are located. Let your arms hang by your sides. Your kidneys are in line with your elbows, at your back above your waist. Reach around and place your hands just above your waist on either side of your backbone. Your two kidneys hang near your spine, one on either side of your backbone, in the middle of your back. Your bottom ribs and layers of fat protect the kidneys. Do you have a pretty good idea of where they live? Okay, let's sit down and see how they work.

Arteries, or muscular tubes, carry blood from other parts of your body to your kidneys. These two, dark red, bean-shaped organs act like washing machines for the blood, cleaning it of waste and toxins. As blood flows to your body cells, it passes through the kidneys where millions of tiny microscopic filter tubes capture the waste products and excess, or extra, water.

Support

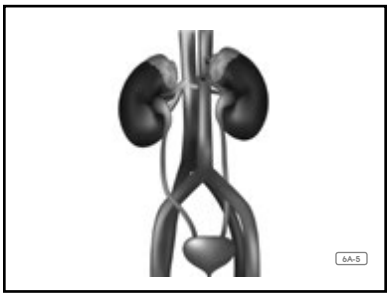
Point out that the word *excretory* contains the word *excrete*. Review the meaning of the word *excrete*.

Support

Have students explain the way kidneys work to cleanse the blood of waste and toxins.

Show Image 6A-4: Strainer

Think of a kitchen strainer or sieve. *[Point to the strainer/sieve in the image.]* Have you ever seen cooked pasta poured into a strainer? The liquid flows through, and the strainer catches the pasta. Your kidneys act a little like that kitchen strainer. They filter, or separate, the liquid waste from the blood. Clean blood travels to your body's cells, while the liquid waste, called urine, is collected in each kidney.



Show Image 6A-5: Diagram of kidneys, ureters, bladder, and urethra

Urine drains out of both kidneys through two tubes called ureters. The ureters lead from the kidneys to your urinary **bladder**. The bladder is a muscular storage bag located in the lower part of your abdomen, which is below your waist. When it gets full, we can feel it. This stretchy, sac-like muscle stores urine. It is a little like a water balloon with three openings: the two ureters that connect to the kidneys, and a third opening at the other end of the bladder called the urethra. As urine passes into the bladder through the ureters, the walls stretch, and the rubbery balloon begins to fill.

Nerve endings in the muscular bladder walls send signals to the brain that the bladder is full and about to burst. That's when you know it is time to urinate. Urine passes out of your body through the urethra, the tube at the bottom of the bladder. Just like the anus, the urethra has a muscular gate, called the sphincter muscle, that opens and closes to let the urine pass. When the sphincter muscle is tightened, urine stays in the bladder. When it is relaxed, urine is released. This is a voluntary muscle, meaning that you are able to control its opening and closing, but you need to listen to your brain when it tells you that it is time to go to the bathroom. The excretory system works the same for both boys and girls. The only difference is in the length of the urethra. The urethra is longer in boys than it is in girls.

Support

Have students explain the function of the bladder in the excretory system.

Show Image 6A-6: Importance of drinking water

In addition to preparing liquid waste for removal from the body, the kidneys also **regulate**, or control, the amount of salt and nutrients in the blood. They help to maintain a state of balance in the body by controlling the amount of water your body loses, balancing the amount of water excreted with the amount of water kept in the body. *What does* excreted *mean?* If you have too much water in the body, you may feel bloated, or swollen. If there is too little water in the body, you may become dehydrated, or dried out. Dehydration can cause serious damage to your body. That is why it is important to drink lots of water, never letting your body dry out.

Let's name all of the different parts of the excretory system. The excretory system is made up of the kidneys, the bladder, the two tubes that connect them—the ureters—and the urethra, the final tube in the process. It may appear less complicated than the digestive system, but it is just as important for filtering the blood and helping your body get rid of toxic substances.

You probably know that liquid waste is excreted from your body a bit more frequently than solid waste. That's because it does not stay in the bladder as long as solid waste stays in the rectum.

Show Image 6A-7: Big and strong

We've been talking a lot about getting rid of the body's waste, but along the way you have learned that the body turns a lot of the food that you eat into nourishment and provides your body with the energy that it needs to grow and repair itself. What are the good parts that are carried through your blood and stored in your body called? (nutrients) Next time, we'll find out just exactly what nutrients are and what you can do to make sure that you are getting enough of them.

See you next time! Until then, make sure that you listen to your body and respond when it sends you messages. That's really important to maintaining good health.

Support

Review the meaning of the word *toxic*.

COMPREHENSION QUESTIONS (10 MIN.)

Check for Understanding

Recall: What are the names of the organs involved in the excretory system? *(the kidneys and bladder)*

1. **Literal.** What is the function of the excretory system? *(to rid the body of toxins)*
2. **Literal.** What are two ways your body excretes liquid waste? Which of the two is the primary, or main, way? *(urine and sweat; The primary way is through urine.)*
3. **Evaluative.** How are the digestive and excretory systems similar? *(The digestive system gets rid of waste, and the excretory system also gets rid of waste.)* How are the digestive and excretory systems different? *(The digestive system deals with solid waste, and the excretory system gets rid of liquid waste. The digestive system also processes food and liquids into nutrients for the body. The excretory system just processes waste.)*
4. **Evaluative.** *Think-Pair-Share:* Is it important to drink plenty of water? Why or why not? Provide evidence from the Read-Aloud to support your opinion. *(Yes, it is important to drink plenty of water, because that is the way the body gets rid of toxins.)*

WORD WORK: TOXIC (5 MIN.)

1. In the Read-Aloud you heard, "If these toxins hang around in your body too long, they may become toxic, or poisonous, to you. "
2. Say the word *toxic* with me.
3. A toxic substance is poisonous; it will kill or injure living things.
4. Chocolate can be very toxic to some pets.
5. What are some things that are toxic, or poisonous, to living things? Use the word *toxic* when you tell about it. [Ask two or three students. If necessary, guide and/or rephrase students' responses: "The toxic spray was used to . . . "]
6. What's the word we've been talking about?

ENGLISH LANGUAGE LEARNERS

Speaking and Listening

Supporting Own Opinions

Beginning
Students will support their opinions by providing good reasons and some evidence from the Read-Aloud or relevant background knowledge.

Intermediate
Students will support their opinions by providing good reasons and increasingly detailed evidence from the Read-Aloud or relevant background knowledge.

Advanced/ Advanced High
Students will support their opinions by providing good reasons and detailed evidence from the Read-Aloud or relevant background knowledge.

ELPS 3.G; ELPS 4.J

Use a Making Choices activity for follow-up. I am going to name several common household products that may or may not be toxic, or poisonous, to humans. If the product is toxic, say, "That's toxic." If it is not harmful to humans, say, "That's not toxic." Remember to answer in complete sentences.

- insect spray *(That's toxic.)*
- milk *(That's not toxic.)*
- gasoline *(That's toxic.)*
- dog food *(That's not toxic.)*
- drain cleaner *(That's toxic.)*
- cookies *(That's not toxic.)*

Activity Page 6.2

Activity Page 6.3

ENGLISH LANGUAGE LEARNERS

Writing

Writing Informational Text

Beginning
Allow students to dictate their journal entries to an adult.

Intermediate
Allow students to collaborate with a peer to write their journal entries.

Advanced/ Advanced High
Have students work independently to write their journal entries.

ELPS 5.F

Lesson 6: The Excretory System

Application

20M

Writing: Students will write an entry in the *My Human Body Journal*, describing the excretory system.

TEKS 2.7.B

EXCRETORY SYSTEM MATCHUP (5 MIN.)

- Have students identify the purpose of the excretory system and some of the organs involved in that system. *(The purpose of the excretory system is to rid the body of waste, or toxins; kidney and bladder)*
- Have students complete Activity Page 6.2 with a partner.
- As a group, have students complete the enlarged version of Activity Page 6.2 with the correct answers.

MY HUMAN BODY JOURNAL (10 MIN.)

- Tell students that they are going to write another entry for the *My Human Body Journal* describing the excretory system.
- Explain that students will use Activity Page 6.3 to write this journal entry.

Check for Understanding

Recall: What organs are involved in the excretory system? *(kidney and bladder)*

With your partner, discuss one thing you learned about the excretory system. Listen to your partner's statement, and then build on that statement to say something else about your partner's comment. For example, your partner might say, "Sweat is one way the body excretes toxins." You could respond "That's one reason you should drink plenty of water."

TEKS 2.7.B Write brief comments on literary or informational texts that demonstrate an understanding of the text.

- Have students work independently to complete Activity Page 6.3. Explain that they should write two to three sentences about the excretory system: one introductory sentence and one or two sentences with details about the excretory system.
- Have several students share their journal entry with the class.
- Save the journal pages to assemble into individual student journals at the end of the domain, but consider making copies of the pages for inclusion in the students' writing portfolios.

VOCABULARY INSTRUCTIONAL ACTIVITY (5 MIN.)

Word Work: Maintain

- Remind students that they heard in the Read-Aloud today that the kidneys "help to maintain a state of balance in the body by controlling the amount of water your body loses, balancing the amount of water excreted with the amount of water kept in the body."
- Have students say the word *maintain* with you.
- Explain that the word *maintain* means to keep something the same way. The kidneys maintain, or keep, a state of balance in the body by controlling the amount of water a body loses.
- Remind students that students who maintain good grades usually do so by always completing their homework and studying for tests. Have students provide other examples of things that can or should be maintained. Have two or three students share their examples. If necessary, guide and/or rephrase students' answers, "_____ maintain _____."
- Use a Discussion activity for follow-up. Have students talk to a partner about how water helps maintain good health. Remind them to provide details when sharing their example.
- Have several students share their responses with the class.

End of Lesson

Support

Provide an additional example of the use of the word *maintain*: "It's important to maintain your car in good repair so it won't break down."

LESSON

7

THE HUMAN BODY: BUILDING BLOCKS AND NUTRITION

Nutrients

PRIMARY FOCUS OF LESSON

Speaking and Listening

Students will review what they have learned about nutrients.

TEKS 2.1.A

Reading

Students will identify six nutrients that are essential for good health.

TEKS 2.6.G

Language

Students will demonstrate an understanding of the Tier 2 word *essential*.

TEKS 2.3.B

Writing

Students will write an entry in the *My Human Body Journal* in which they provide examples of the four main nutrients and describe how they keep a body healthy.

TEKS 2.7.E

Language

Students will demonstrate an understanding of the use of adverbs to modify verbs.

TEKS 2.11.D.v

FORMATIVE ASSESSMENT

Activity Page 7.1

My Human Body Journal Students will write an entry in the *My Human Body Journal* in which they provide examples of the four main nutrients and describe how they keep a body healthy.

TEKS 2.7.E

TEKS 2.1.A Listen actively, ask relevant questions to clarify information, and answer questions using multi-word responses; **TEKS 2.6.G** Evaluate details read to determine key ideas; **TEKS 2.3.B** Use context within and beyond a sentence to determine the meaning of unfamiliar words; **TEKS 2.7.E** Interact with sources in meaningful ways such as illustrating or writing; **TEKS 2.11.D.v** Edit drafts using standard English conventions, including adverbs that convey time and adverbs that convey place.

LESSON AT A GLANCE

	Grouping	Time	Materials
Introducing the Read-Aloud (10 min.)			
What Have We Already Learned?	Whole Group	10 min.	
Read-Aloud (30 min.)			
Purpose for Listening	Whole Group	30 min.	❑ Flip Book: 7A-1–7A-12
"Nutrients"			
Comprehension Questions			
Word Work: *Essential*			
This is a good opportunity to take a break.			
Application (20 min.)			
What Did You Eat for Breakfast?	Whole Group/ Independent	20 min.	❑ Posters 4–7 (Flip Book) ❑ drawing paper, drawing utensils ❑ tape ❑ Activity Page 7.1
My Human Body Journal			
Syntactic Awareness Activity: Adverbs			

ADVANCE PREPARATION

Application

- Display Posters 4–7.

CORE VOCABULARY

carbohydrates, n. substances that supply the human body with energy
Example: Sugar and starch are carbohydrates found in many plant foods.
Variation(s): carbohydrate

essential, adj. necessary or very important
Example: Water is essential to the life of all plants and animals on Earth.
Variation(s): none

fats, n. substances that, in small doses, are essential to a healthy body
Example: Butter and oils are fats that may be hidden in some of our favorite foods.
Variation(s): fat

minerals, n. nonliving substances, small amounts of which are part of a healthy diet
Example: If you eat different kinds of foods, your body will probably get all the minerals it needs.
Variation(s): mineral

proteins, n. substances found in all body cells that are essential for growth
Example: Eggs and milk both contain proteins.
Variation(s): protein

Vocabulary Chart for "Nutrients"

Type	Tier 3 Domain-Specific Words	Tier 2 General Academic Words	Tier 1 Everyday Speech Words
Vocabulary	carbohydrates *(carbohidratos)* fats minerals *(minerales)* proteins *(proteínas)*	essential	
Multiple Meaning			
Sayings and Phrases	not a fan of		

Lesson 7: Nutrients

Introducing the Read-Aloud

10M

Speaking and Listening: Students will review what they have learned about nutrients.

TEKS 2.1.A

WHAT HAVE WE ALREADY LEARNED?

- Share the title of the Read-Aloud with students, and remind them they learned about nutrients earlier in this domain.
- Have students define the term *nutrients*. *(nourishing substances that are necessary for growth and the maintenance of life)*
- Have students identify the way in which the body gets nutrients. *(They are contained in food and drink.)*

Check for Understanding

Take a Side: I am going to say several foods and drinks. If you think the food or drink contains a lot of nutrients, or helps you grow and stay healthy, walk quietly to the front of the room. If you think the food or drink does not contain many nutrients, or doesn't help you grow and stay healthy, walk quietly to the back of the room.

- orange juice *(front of room)*
- candy *(back of room)*
- broccoli *(front of room)*
- milk *(front of room)*
- soda *(back of room)*

Support

Review the meaning of the word *nourish*. *(to provide with food or nutrients necessary for health and life)*

Support

Emphasize that the foods themselves are not nutrients, but that different nutrients are contained in different foods.

TEKS 2.1.A Listen actively, ask relevant questions to clarify information, and answer questions using multi-word responses.

- Have students identify the way nutrients travel through the body. *(through the blood)*
- Explain that most of the Read-Aloud students will hear today will be about the four main nutrients their bodies need to grow. There are two other nutrients that are also important.

Lesson 7: Nutrients

Read-Aloud

30M

Reading: Students will identify six nutrients that are essential for good health.

TEKS 2.6.G

Language: Students will demonstrate an understanding of the Tier 2 word *essential*.

TEKS 2.3.B

PURPOSE FOR LISTENING

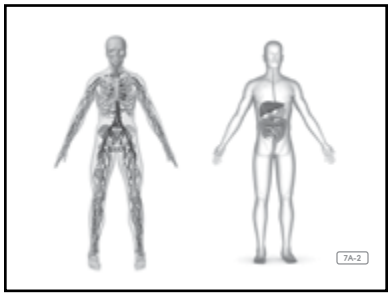
- Tell students to listen carefully to learn about six nutrients essential to healthy bodies.

"NUTRIENTS" (15 MIN.)

Show Image 7A-1: What do you eat?

Why do you eat? Is it because certain foods taste really good to you? That's surely one reason why I eat. I cannot imagine my world without the taste of a fresh bowl of vegetable soup or a peppermint stick ice cream cone on a summer's day. You also eat because you get hungry, right? Your tummy grumbles and complains if it hasn't been fed for a long time. But what is the main reason you eat?

Ah, at last—my chance to talk about my favorite topic: nutrients. You eat because you need the nutrients that food provides to stay healthy.



Show Image 7A-2: Circulatory and digestive systems

We have talked a lot about nutrients in the previous lessons. You know that your blood carries nutrients to all parts of the human body. Your digestive and excretory systems filter waste from the body and send nutrients back into the blood.

Challenge

Review the name and profession of the narrator of the Read-Alouds. *(Nick Nutri; nutritionist)* Have students explain why Nick Nutri is an appropriate narrator for this domain.

Challenge

Have students identify the other four body systems. *(circulatory, muscular, skeletal, and nervous systems)*

TEKS 2.6.G Evaluate details read to determine key ideas; **TEKS 2.3.B** Use context within and beyond a sentence to determine the meaning of unfamiliar words.

Your cells need nutrients to stay alive. Your tissues need nutrients to function properly. Your organs stop working without the right nutrients, and if your organs stop working, your body's systems might stop working, too! *What are cells?* (the smallest units of living things; the body's building blocks) *What is tissue?* (a group of cells that perform the same jobs in living things) *What are organs?* (groups of tissue that do a particular job for the body) *What is a body system?* (a collection of organs that work together for the same purpose)

You know that nutrients are good for you. But what exactly are nutrients? Nutrients are substances that provide nourishment necessary for the growth and health of an organism. Providing the body with the nutrients it needs is an **essential** *or necessary* part of staying healthy.

Support

Have students define the word *organism* based on the way it is used here.

So, how do you get nutrients? Yes, from the food you eat. Nutritionists, like me, think of the body as a chemical factory. Everything you eat is made up of thousands of different chemical substances. The ones that every healthy body needs to stay alive are called nutrients.

Show Image 7A-3: Basic nutrients
Everyone needs four basic nutrients—water, **carbohydrates**, **proteins**, and **fats**.

Support

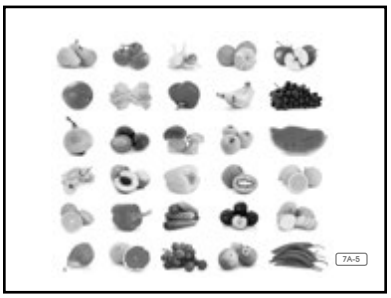
Have students repeat the list of four basic nutrients.

These nutrients come from different food sources. It is up to you to choose the right foods to supply your bodies with the proper balance of water, carbohydrates, proteins, and fats. Today I am going to teach you how to make the best food choices for maintaining a healthy body.

Show Image 7A-4: A glass of water
Let's start with the nutrient that is familiar to everybody: water. Water is perhaps the most important nutrient of all. It is necessary for all body functions. *What's another word for functions?* (jobs or purpose) You cannot live for more than about a week without water. Did you know that two-thirds of your body is made up of water? Water is part of your blood. It travels in and out of your cells and helps to dissolve other nutrients, carrying them to all your tissues. Water is a necessary part of the excretory system, making up most of your urine. Water

helps break down your food so that solid waste can pass from your body. Water even helps maintain the right body temperature.

When given a choice of what to drink, water is always the healthiest choice you can make. It is up to you to constantly refill your body's supply of water. You need between three and six cups each day, but not all of your water needs to come from a cup.



Show Image 7A-5: Sources of water in food
Did you know that many foods contain lots of water, too? Grapefruit, watermelon, tomatoes, cucumber, and lettuce are all good choices. One way to tell whether you are getting enough water is to check the color of your urine. It should be practically colorless.

Show Image 7A-6: Carbohydrates
All nutrients supply your body with energy, but the body's main source of energy comes from carbohydrates. Carbohydrates are found almost entirely in plant foods—fruits, vegetables, whole grains, peas, and beans. Potatoes, rice, and pasta are good choices for carbohydrates. Milk and milk products, like ice cream and yogurt, provide the body with carbohydrates and protein. Cheese has only a few carbohydrates.

Show Image 7A-7: Protein
Protein is a body-builder and is contained in all body cells. It is necessary for your body's growth and development, building muscle, and helping to repair cells. It's easy to see how cells outside the body—like hair, skin, and nails—renew themselves, isn't it? Each time we cut them, they grow right back! The body makes its own protein, but it needs help from foods. Good sources of protein include meat, fish, chicken, eggs, milk, and beans.

Support

Have students predict other sources of water.

Support

Have students define *renew* based on the way it is used here.

Show Image 7A-8: Fats

The fourth nutrient that your body needs is fat. *What are the other three nutrients we just discussed?* (water, carbohydrates, and protein) Butter, margarine, and oils are good sources of fat. Today, many people are overweight, so it may seem strange to you that I am telling you to include fat in your diet, but your body does need a certain amount of fat. Does anyone know why?

Well, for one thing, fat is necessary for the development of your brain, especially in the first few years of your life. When you looked at skin cells under a microscope, do you remember seeing the layer of fat cells? A thin layer of fat underneath your skin acts like a blanket, providing you with insulation *or protection* and warmth. Fat stores energy in your body and helps keep your skin healthy, too.

So, you see, fat is an important nutrient, but you only need very small amounts of it. Your body can make most of its building blocks from carbohydrates and proteins. At a certain point in your life, you need to be careful not to eat too much fat because that might cause you to gain too much weight.

So far, you've learned that the body needs four basic nutrients to grow and stay healthy. What are they? Great—water, carbohydrates, proteins, and fats.

Show Image 7A-9: Vitamins and food

These are not the only nutrients your body needs. There are other important nutrients that are also essential to life. *What does* essential *mean?* (necessary or important) They are called vitamins and **minerals**. *Minerals are nonliving substances that you need in small amounts to be healthy.* Your body needs less of them than the other four nutrients, but if you don't get enough vitamins and minerals, you can become sick.

Long ago, sailors lived on a diet of only biscuits and salty meat while they were out at sea. They began to suffer from bleeding gums, and their bones became weak. Once they added lemons and limes to their diet, the sailors became much better. Why do you think that is?

Citrus fruits, like lemons, limes, oranges, and grapefruits, gave the sailors the Vitamin C that they needed to keep their blood vessels, gums, and teeth healthy. Vitamin C also helps build tissue to fight germs. That's why your mom or dad might give you extra orange juice if you feel like you're catching a cold. If you aren't a fan of citrus fruits, broccoli and tomatoes are also good choices to make sure you are getting enough Vitamin C.

Show Image 7A-10: Vitamin alphabet
Letters of the alphabet, like the letter 'C,' are used for many vitamins. There's Vitamin A, Vitamin B, Vitamins C, D, and E—and so many more! Vitamin A is important for healthy skin and helps you see more clearly at night. Dairy products, carrots, and dark, leafy greens contain lots of Vitamin A.

There are many different B vitamins—Vitamin B1, Vitamin B2, Vitamin B3, and so on. The B vitamins, found mostly in meat, help the body perform lots of different functions. For example, B12 helps make red blood cells. Vitamin D, found in fish and egg yolks, helps build strong bones.

Most of the vitamins you need come from vegetables, fruits, and grains. All vitamins are essential in small doses, or amounts. If you have a healthy diet, you are probably getting all the vitamins you need.

Show Image 7A-11: Fluoride
Fluoride is a mineral that is often added to public drinking water. It is contained in some toothpaste and mouthwash as well. This is because fluoride helps prevent tooth decay. Your body needs small amounts of different minerals, such as fluoride, to help perform specific body functions. Besides fluoride, other minerals include calcium, sodium, and iron.

Support

Have students review the six nutrients.

Show Image 7A-12: Sources of minerals

You can help your teeth and bones stay strong by eating foods rich in calcium. Milk, broccoli, and almonds are good choices. Sodium—found in table salt, bacon, and lots of soup broths—helps regulate the body's fluids. Then again, too much salt is not good for you. It causes the body to hold onto too much fluid, which can cause high blood pressure. If you feel weak, look pale, and get tired easily, you may need more iron. Eat more red meat, whole grains, and beans. Iron helps the blood carry oxygen throughout the body and helps the body fight infections.

Each one of these minerals provides important nutrients for your body. As with vitamins, you can get most of the minerals you need by eating a healthy diet. That's what we will talk about next time we meet—the best foods for you to eat!

COMPREHENSION QUESTIONS (10 MIN.)

Check for Understanding

Thumbs-Up/Thumbs-Down: I am going to say several things. If what I say is a nutrient your body needs, give a thumbs-up. If it is not a nutrient your body needs, give a thumbs-down.

- soda *(thumbs-down)*
- water *(thumbs-up)*
- carbohydrates *(thumbs-up)*
- systems *(thumbs-down)*
- proteins *(thumbs-up)*
- fats *(thumbs-up)*
- cells *(thumbs-down)*

List the four nutrients that are essential for good health. *(water, carbohydrates, proteins, fats)* List two other nutrients that are needed by the body but in lesser amounts. *(vitamins and minerals)*

1. **Literal.** Which one of the four basic nutrients supplies most of the body's energy? *(carbohydrates)*
2. **Evaluation.** If your hair and nails stop growing, which essential nutrient are you most likely missing? Why? *(protein; It helps repair cells and is responsible for new growth.)*
3. **Literal.** Which vitamin, supplied by citrus fruits like oranges, lemons, and limes, helps build tissue to fight germs? *(vitamin C)*
4. **Evaluative.** *Think-Pair-Share:* If you had to plan a meal that contained many nutrients, what would you eat and drink at that meal? What nutrients would you get from each of the foods and drinks? *(Answers may vary.)*

ENGLISH LANGUAGE LEARNERS

Speaking and Listening

Supporting Own Opinions

Beginning
Students will support their opinions by providing good reasons and some evidence from the Read-Aloud or relevant background knowledge.

Intermediate
Students will support their opinions by providing good reasons and increasingly detailed evidence from the Read-Aloud or relevant background knowledge.

Advanced/ Advanced High
Students will support their opinions by providing good reasons and detailed evidence from the Read-Aloud or relevant background knowledge.

ELPS 3.G; ELPS 4.J

WORD WORK: ESSENTIAL (5 MIN.)

1. In the Read-Aloud you heard, "Providing the body with the nutrients it needs is an essential part of staying healthy."
2. Say the word *essential* with me.
3. *Essential* means absolutely necessary.
4. When traveling by public transport, it is essential to arrive before the departure time on the schedule; otherwise, you will miss your ride.
5. Think of some things that are essential to our classroom. What is absolutely necessary to making our day run smoothly? Use the word *essential* when you tell us about it. [Ask two or three students. If necessary, guide and/or rephrase students' responses: "It is essential for everyone to . . . "]
6. What's the word we've been talking about?

Use a Making Choices activity for follow-up. I am going to name some common daily activities. If what I say is essential, or necessary, to staying healthy, say, "That's essential." If it is not essential to staying healthy, say, "That's not essential." Remember to answer in complete sentences.

- singing songs *(That's not essential.)*
- eating chocolate *(That's not essential.)*
- sleeping well *(That's essential.)*
- drinking water *(That's essential.)*
- reading books *(That's not essential.)*

Support

Emphasize that you are asking whether things are essential for good health. Some items may be essential for things other than good health (e.g., reading books is essential for learning, but not necessarily for good health).

Lesson 7: Nutrients

Application

20M

Writing: Students will write an entry in the *My Human Body Journal* in which they provide examples of the four main nutrients and describe how they keep a body healthy.

TEKS 2.7.E

Language: Students will demonstrate an understanding of the use of adverbs to modify verbs.

TEKS 2.11.D.v

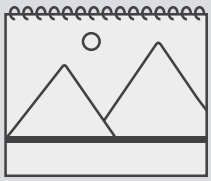
WHAT DID YOU EAT FOR BREAKFAST? (5 MIN.)

- Direct students' attention to the four nutrients posters: Poster 4 (Carbohydrates), Poster 5 (Proteins), Poster 6 (Fats), and Poster 7 (Water).
- Tell students that they are going to draw the foods that they ate for breakfast and tape the drawings to the most appropriate poster. Explain that some foods may contain more than one nutrient and that they must make a decision about which one is more abundant, or is the main one. Tell them to draw only one item on each piece of paper. For example, if they had orange juice, cereal, and milk, they would use three separate sheets of paper to draw their breakfasts.
- After everyone has completed the task, have students discuss which nutrients they consumed at breakfast (including vitamins and minerals), whether they think they made good breakfast choices, and what they need to include in their other meals today in order to get the daily nutrients they need.

MY HUMAN BODY JOURNAL (10 MIN.)

- Tell students that they are going to write another entry for the *My Human Body Journal* in which they provide examples of the four main nutrients and describe how they keep a body healthy.
- Explain that students will use Activity Page 7.1 to write this journal entry.

Posters 4–7



Support

Review the four basic nutrients that everybody needs (water, carbohydrates, proteins, and fats).

Activity Page 7.1

TEKS 2.7.E Interact with sources in meaningful ways such as illustrating or writing; **TEKS 2.11.D.v** Edit drafts using standard English conventions, including adverbs that convey time and adverbs that convey place.

ENGLISH LANGUAGE LEARNERS

Writing

Writing Informational Text

Beginning
Allow students to dictate their journal entries to an adult.

Intermediate
Allow students to collaborate with a peer to write their journal entries.

Advanced/ Advanced High
Have students work independently to write their journal entries.

ELPS 5.F

Support

Have students refer to Posters 4–7 for ideas for their illustrations.

Check for Understanding

Recall: What are the four main nutrients? *(water, proteins, carbohydrates, and fats)*

With your partner, discuss one thing you learned about the nutrients and how they keep a body healthy. Listen to your partner's statement, and then build on that statement to say something else about your partner's comment. For example, your partner might say, "Proteins repair cells." You could respond "Meat and fish are good sources of protein."

- Have students work independently to complete Activity Page 7.1. Explain that they should write three to four sentences about nutrients: one introductory sentence and two or three sentences about how nutrients help a body stay healthy.
- Have students add illustrations at the top of Activity Page 7.1 to support their writing. The illustrations should be examples of each of the four types of nutrients.
- Have several students share their journal entry with the class.
- Save the journal pages to assemble into individual student journals at the end of the domain, but consider making copies of the pages for inclusion in the students' writing portfolios.

SYNTACTIC AWARENESS ACTIVITY: ADVERBS (5 MIN.)

The purpose of these syntactic activities is to help students understand the direct connection between grammatical structures and the meaning of text. These syntactic activities should be used in conjunction with the complex text presented in the Read-Alouds.

- Explain that today you will practice using adverbs, which are words that describe action words or verbs.
- Remind students that they heard in the Read-Aloud, "Vitamin A . . . helps you see more clearly at night."
- Have students identify the verb in that sentence. *(see)*
- Have students identify the word in the sentence that describes the action. *(clearly)*
- Explain that the word *see* is an action word, and *clearly* is the adverb that is used to describe how Vitamin A helps you see at night
- In the following examples, have students repeat what you say and how you say it. Explain that the verb in each of the examples is *speaking*. Remind students that you can use adverbs to describe how we speak. Have them identify the adverb in each example.
  - I am speaking softly. [Use a lowered voice when speaking this sentence.] *(softly)*
  - I am speaking quickly. [Use a fast pace when speaking this sentence.] *(quickly)*
  - I am speaking loudly. [Use a loud voice when speaking this sentence.] *(loudly)*
  - I am speaking slowly. [Use a slow pace when speaking this sentence.] *(slowly)*
- Have students practice with a partner. First, have one partner clap in a certain way so that the other partner can repeat it. Then, have the partners work together to describe the way the first student clapped.
- Have students identify the part of speech practiced today, and the part of speech those words describe. *(adverbs; verbs)*

End of Lesson

Support

There may be variations in the sentences created by your class. Allow for these variations, and restate students' sentences so that they are grammatical.

Support

Have students explain what a verb is. Explain that some, but not all, verbs are action words.

Support

Remind students that words that describe action words or how we do something are called adverbs.

Support

Suggest students clap loudly, softly, quickly, slowly, etc.

LESSON

8

THE HUMAN BODY

A Well-Balanced Diet

PRIMARY FOCUS OF LESSON

Speaking and Listening

Students will review the importance of nutrients and give examples of each.

TEKS 2.1.A

Reading

Students will explain why the author says it makes sense to spend the most time in the produce section of the grocery store.

TEKS 2.6.G; TEKS 2.7.C

Language

Students will demonstrate an understanding of the Tier 2 word *variety*.

TEKS 2.3.B

Speaking and Listening

Students will describe a daily balanced diet and will use text evidence to support an appropriate response.

TEKS 2.1.D; TEKS 2.7.C

FORMATIVE ASSESSMENT

Exit Pass

A Well-Balanced Diet Students will describe a daily balanced diet.

TEKS 2.1.D; TEKS 2.7.C

TEKS 2.1.A Listen actively, ask relevant questions to clarify information, and answer questions using multi-word responses; **TEKS 2.6.G** Evaluate details read to determine key ideas; **TEKS 2.7.C** Use text evidence to support an appropriate response; **TEKS 2.3.B** Use context within and beyond a sentence to determine the meaning of unfamiliar words; **TEKS 2.1.D** Work collaboratively with others by following agreed-upon rules for discussion, including listening to others, speaking when recognized, making appropriate contributions, and building on the ideas of others.

LESSON AT A GLANCE

	Grouping	Time	Materials
Introducing the Read-Aloud (10 min.)			
What Have We Already Learned?	Whole Group	10 min.	❑ Posters 4–7 (Flip Book)
Read-Aloud (30 min.)			
Purpose for Listening	Whole Group	30 min.	❑ Flip Book: 8A-1–8A-12
"A Well-Balanced Diet"			
Comprehension Questions			
Word Work: *Variety*			
This is a good opportunity to take a break.			
Application (20 min.)			
A Well-Balanced Diet	Small Group/ Whole Group/ Partner	20 min.	❑ Poster 4M: Skip (Flip Book)
Multiple Meaning Word Activity: *Skip*			

CORE VOCABULARY

fiber, n. the part of plant foods that your body can't digest but that helps you digest other food
Example: A diet rich in fiber makes you feel fuller and is helpful for proper digestion.
Variations: none

moderation, n. the act of keeping things within a middle range, neither too great nor too little
Example: Keeping all things in moderation is a good rule to live by.
Variations: none

scan, v. to look around an area quickly
Example: Henry and Lucy decided to scan the parking lot to look for an empty parking space.
Variations: scans, scanned, scanning

variety, n. a range of different things
Example: My scout troop sells a wide variety of cookies every year.
Variation(s): varieties

well-balanced diet, n. a variety of healthy foods, eaten in proper proportions
Example: A well-balanced diet includes lots more vegetables than ice cream.
Variation(s): well-balanced diets

Vocabulary Chart for "A Well-Balanced Diet"

Type	Tier 3 Domain-Specific Words	Tier 2 General Academic Words	Tier 1 Everyday Speech Words
Vocabulary	well-balanced diet	moderation *(moderación)* scan variety *(variedad)*	
Multiple Meaning	fiber *(fibra)*		
Sayings and Phrases	variety is the spice of life needs a boost		

Start Lesson

Lesson 8: A Well-Balanced Diet

Introducing the Read-Aloud

10M

Speaking and Listening: Students will review the importance of nutrients and give examples of each.

TEKS 2.1.A

WHAT HAVE WE ALREADY LEARNED?

- Have students explain why nutrients are important. *(They nourish the body and allow it to grow and stay healthy.)*
- Have students identify the four basic nutrients needed by the human body. *(water, carbohydrates, protein, and fats)*
- Have students identify the two other nutrients that the body needs, but in smaller amounts, *(vitamins and minerals)*

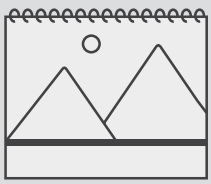
Check for Understanding

Pick a Poster: I am going to read several statements about the categories of nutrients represented by Posters 4–7. Identify the number of the poster the statement describes.

- These items all contain protein. *(Poster 5)* Give an example of a protein. *(Answers may vary.)*
- The nutrient shown in the items in this poster should be taken in small quantities, because too much of it might cause someone to gain too much weight. *(Poster 6)* Give an example of a fat. *(Answers may vary.)*
- The nutrients found in the foods on this poster give a person energy. *(Poster 4)* Give an example of a carbohydrate. *(Answers may vary.)*
- The nutrient found on this poster helps the body get rid of toxins. *(Poster 7)*

- Tell students that today they will learn more about each one of these nutrients so that they will be better able to plan and eat healthy meals.

Posters 4–7



Support

Place a number on the front of each poster, corresponding to the poster's number as it appears on the back.

TEKS 2.1.A Listen actively, ask relevant questions to clarify information, and answer questions using multi-word responses.

Lesson 8: A Well-Balanced Diet

Read-Aloud

30M

Reading: Students will explain why the author says it makes sense to spend the most time in the produce section of the grocery store.

TEKS 2.6.G; TEKS 2.7.C

Language: Students will demonstrate an understanding of the Tier 2 word *variety*.

TEKS 2.3.B

PURPOSE FOR LISTENING

- Tell students to listen carefully to find out why the author says it makes sense to spend the most time in the produce section of the grocery store.

"A WELL-BALANCED DIET" (15 MIN.)

Challenge

Have students explain what the produce section is. If they are not able to do so, tell them they will learn about the produce section in this Read-Aloud.

Show Image 8A-1: Favorite foods

If you could eat whatever you wanted, what would you choose? Would it be a breakfast meal of cereal, orange juice, and toast? Pancakes loaded with butter and syrup with a side of bacon or sausage? Perhaps you'd choose a juicy hamburger with French fries and slaw. What about pizza or shrimp lo mein? Maybe you'd favor enchiladas or souvlaki? Or would you choose a fish taco and tomato soup?

You each have different favorites, I'm sure. Hopefully, as you learn more about nutrition and the nutrients your body needs, you will begin to think more about what you eat, making wise choices so that you can maintain a healthy body throughout your life. *What are nutrients?* (nourishing substances that are necessary for growth and the maintenance of life)

Providing the body with the nutrients it needs is an essential part of staying healthy. *What does* essential *mean?* (necessary) Have you ever heard someone say "**Variety** is the spice of life?" That usually means that you should spend your time doing lots of different things, but it holds true for your diet as well. You've learned that the body needs variety *or a range of different things*—a variety of nutrients that come from a variety of foods. Your body makes most of its building blocks from proteins and carbohydrates,

TEKS 2.6.G Evaluate details read to determine key ideas; **TEKS 2.7.C** Use text evidence to support an appropriate response; **TEKS 2.3.B** Use context within and beyond a sentence to determine the meaning of unfamiliar words.

but it needs fats and lots of water, too. And don't forget about vitamins and minerals! They're nutrients, too.

The best way to make sure that you are getting all the nutrients you need is to eat a **well-balanced diet**. What do you suppose that means?

Show Image 8A-2: Pizza and fried chicken
Well, for one thing, it means you don't have to give up your favorite foods, even if they may not be the healthiest ones on the planet. Just don't eat pizza or fried chicken at every meal. My dad used to say, "Eat in **moderation**." He meant that I shouldn't eat too much or too little of any one thing. I love chocolate chip cookies so much that I could easily eat a whole batch, but I had to learn to eat slowly and be satisfied with one or two.

Balancing your diet with lots of different foods is important. Think about all of the different nutrients your body needs. These nutrients come from a variety of foods. A well-balanced diet includes grains, fruits, vegetables, dairy, meats and fish, and fats.

Show Image 8A-3: Grains
Do you remember which one of the four basic nutrients is contained in grains—carbohydrates or fats? Right—carbohydrates. Grains also contain small amounts of protein and fats, but carbohydrates make up the largest amount of nutrients in grains.

There is a lot of variety when it comes to choosing a grain for dinner. Grains include rice, pasta, bread, and cereal. Think of all the many types of pasta alone—spaghetti, macaroni, penne, rigatoni—the list goes on and on. If you have a choice between brown rice and white rice, brown contains more nutrients. The same is true of breads. Whole wheat bread is better for you than white bread. When choosing a cereal, find one that isn't loaded with extra sugar.

Support

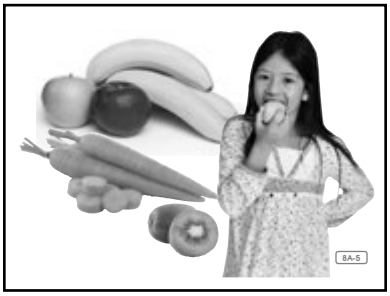
Have students review the six categories of nutrients and identify the four most important categories. *(Water, proteins, carbohydrates, and fats are the most important; vitamins and minerals are the other two categories.)*

Show Image 8A-4: Starch and sugar

You learned that the body needs energy and that most of its energy comes from carbohydrates. That's because the body breaks down large carbohydrates, like the starch in potatoes or spaghetti, into smaller carbohydrates like sugar, which contains a lot of energy that the body can use. Table sugar comes from the roots and stems of plants, like sugar beets and sugarcane, and will give you instant energy. But the kind of sugars found in potatoes and pasta are much better for you than digging into the sugar bowl or reaching for a candy bar. Both give you energy, but candy gives you a quick burst of energy that is soon gone, whereas the energy in potatoes and pasta lasts much longer because it is released into your body much more slowly. If you're hungry, a baked potato will satisfy your hunger much longer than a handful of chocolate candy.

Support

Have students review the difference between the energy they get from a candy bar and the energy they get from potatoes or spaghetti.



Show Image 8A-5: Other carbohydrates

What other foods are rich in carbohydrates? Yes, fruits and vegetables—apples, bananas, carrots, and broccoli. They all provide your body with energy. Just like grains, the natural breakdown of sugar from a fresh piece of fruit is far better for you than a hot-fudge sundae. Choose a naturally sweet-tasting beet or an ear of sweet corn over eating a teaspoonful of sugar from the sugar bowl. The next time you go to the grocery store, **scan**, or look quickly around, the produce section for some fruits and vegetables that you may not have tried. Have you ever tried kohlrabi or kiwi fruit? Remember, variety is the spice of life.

Support

Have students define the word *produce* based on the way it is used here.

Show Image 8A-6: Sources of fiber

In the lesson on the digestive system, you learned that the body was not able to process some foods and so they leave the body as waste. **Fiber**, a very important carbohydrate, is one kind of waste. Fiber is the part of plant foods that your body can't digest or absorb. Since your body cannot digest it, fiber is not a nutrient, but a good diet should include lots of fiber to help keep things moving along the digestive tract. Oranges, pears, berries, peas, and nuts will give you the fiber that you need.

Show Image 8A-7: Sources of protein

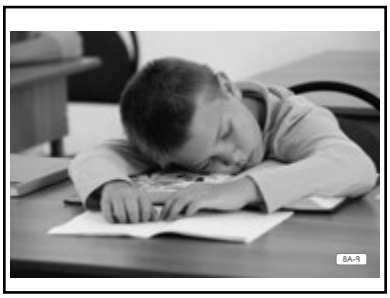
Meat, fish, eggs, and dairy are all good sources of protein, and they are all animal products. Some people are vegetarians, meaning that they do not eat meat. And some people are vegans, meaning they do not eat or use any animal products, such as eggs, cheese, milk, or meat. We know how important protein is for the growth and repair of our bodies, so are there other ways for vegetarians and vegans to get the protein they need? Yes, indeed! Certain combinations of grains, corn, and beans contain all the protein that your body needs. Good combinations include beans and brown rice, hummus and pita bread, or lentils with a green salad. Nuts are rich in protein, too, as are all soybean products, like tofu and soymilk. Yogurt is another good source of protein; just limit the sweetened, flavored varieties because of the added sugars.

Show Image 8A-8: Fats

Let's not forget the fats in your well-balanced diet. Meat and dairy products contain lots of fat, and butter and oils are nearly a hundred percent fat. They are the backup energy source when your body needs a boost, but most of the fat you need is already stored in your body. Each day, you only need the amount of fat contained in about one tablespoon of vegetable oil to keep your body healthy. Many of us eat much more than that. Fat is a little like sugar. It contains important nutrients, but they are very few compared to other foods. Foods rich in vitamins, like fresh fruits and vegetables, are a much better choice than greasy, fried foods made with lots of fat. Too much fat can make you overweight and cause damage to your heart and blood.

Support

Point out that the word *breakfast* is a compound word made up of two separate words. Have students identify the two words and what each means.



Show Image 8A-9: Breakfast, the most important meal of the day

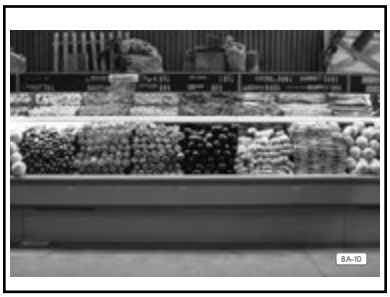
Have you ever heard that breakfast is the most important meal of the day? Do you know why?

The word *breakfast* means to *break the fast*. You fast, or don't eat, every night when you sleep. That's a long time to go without food. Both your body and your brain need to be recharged in the morning, so you need to break the fast with breakfast. Without food, you may feel tired and grumpy because you don't have all the energy you need to get going in the morning. You may stumble over math problems, thinking five plus seven equals twenty, or skip over a line in your reader so that your sentences are all mumbo-jumbo. *The word* skip *as used in this sentence means to miss something.*

Support

Point out that the word *skip* can also mean to move forward in a light or playful way by taking short, quick steps and jumps.

Think about starting every day with some healthy proteins and carbohydrates so that both your body and your brain are at their best.



Show Image 8A-10: The produce aisle

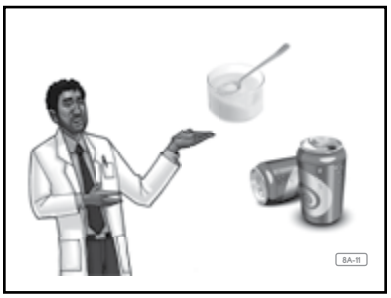
Generally speaking, the fresher the food, the better it is for you. That is why it makes sense to spend more time in the produce aisle of the grocery store. Processed foods often have lots of added salts and sugars and are stripped of the vitamins and minerals that your body needs.

If you do choose packaged foods, make a habit of checking the labels on the outside wrappers before adding them to your cart. Food labels tell how big a serving is, which essential nutrients are provided, and the quantities of each nutrient per serving.

Support

Review the meaning of the word *essential*.

It is important to limit the amount of food eaten that is high in sodium, sugar or fat.



Show Image 8A-11: Sugar

Check out the label from a can of soda. Did you know that there are ten teaspoons of sugar in one soda? Sodas have no nutritional value, cause tooth decay, and put on unhealthy pounds. What would be a better choice of beverage? Water is always best, but milk and fruit juices contain vitamins and minerals, so they are good choices, too, in small amounts.

Show Image 8A-12: Macaroni and cheese or a salad?

The next time you go to the grocery store, look in your grocery cart and see if the foods you've chosen are part of a well-balanced diet. Remember to eat a variety of foods with more fruits and vegetables than anything else. Next time you eat a big plate of macaroni and cheese, think about adding twice as many dark leafy greens to your plate!

COMPREHENSION QUESTIONS (10 MIN.)

Check for Understanding

Turn and Talk: Turn to your neighbor and discuss why the author of the Read-Aloud said *it makes sense to spend more time in the produce aisle of the grocery store.* What facts did the author use to support this statement?

[Have several students share their responses with the class. *(Answers may vary, but may include that produce, or fresh fruits and vegetables, are healthier options than processed foods; fresh fruits and vegetables provide things such as fiber, carbohydrates, and water; processed foods often have added salts and sugars, and are stripped of vitamins and minerals; etc.)*]

ENGLISH LANGUAGE LEARNERS

Speaking and Listening

Supporting Own Opinions

Beginning
Students will support their opinions by providing good reasons and some evidence from the Read-Aloud or relevant background knowledge.

Intermediate
Students will support their opinions by providing good reasons and increasingly detailed evidence from the Read-Aloud or relevant background knowledge.

Advanced/ Advanced High
Students will support their opinions by providing good reasons and detailed evidence from the Read-Aloud or relevant background knowledge.

ELPS 3.G; ELPS 4.J

1. **Inferential.** Pretend that you just ate a meal that consisted of fried fish, a baked potato and butter, green beans, and a glass of milk. Which of the four basic nutrients did you consume and from which foods? *(carbohydrates—potato and green beans; protein—fish and milk; fats—butter or oil used to fry the fish; water—milk, potatoes, and green beans)*
2. **Literal.** You learned that fiber—the part of fruits, vegetables, and grains that cannot be digested and becomes body waste—is an important carbohydrate. Why is fiber so important if the body cannot use it for nutrients? *(Fiber helps food move more quickly through the digestive tract.)*
3. **Literal.** Vegetarians do not eat meat, and vegans do not eat any animal products, including meat, fish, eggs, and dairy products. These foods are all rich sources of protein, so how do vegetarians or vegans get the protein they need? *(They combine grains and beans, nuts, and soy products to get all the protein they need.)*
4. **Inferential.** Athletes need lots of energy before sporting events. Which one of the four basic nutrients will provide them with most of the energy they need? *(carbohydrates)*
5. **Evaluative.** *Think-Pair-Share:* Pretend that for an after-school snack you are offered soda, a bag of chips, a cup of almonds, a strawberry-flavored carton of yogurt, and an apple. Which of these items is the healthiest for you, and why? *(the apple and almonds; The apple provides energy and fiber with natural sugars. The almonds are rich in protein and fiber.)* Which of these items is the least healthy for you, and why? *(The soda and yogurt have added sugars, and the chips have added salt and fats.)*

WORD WORK: VARIETY (5 MIN.)

1. In the Read-Aloud you heard, "You've learned that the body needs variety—a variety of nutrients that come from a variety of foods."
2. Say the word *variety* with me.
3. *Variety* means different types of the same general class of things.
4. The park has a variety of trees.
5. Think of things that come in a variety of different kinds. For example, grocery stores contain a variety of fruits, such as bananas, strawberries, oranges, and apples. Tell us what your favorite variety is and why. Use the word *variety* when you tell about it. [Ask two or three students. If necessary, guide and/or rephrase students' responses: "My favorite variety of fruit is . . . "]
6. What's the word we've been talking about?

Use a Making Choices activity for follow-up. I am going to group some items together that are all varieties of the same thing. You must name the group they have in common. For example, if I said, "peas, broccoli, and carrots," you would say, "That's a variety of vegetables." Remember to answer in complete sentences.

- almonds, pecans, walnuts *(That's a variety of nuts.)*
- apples, oranges, grapes *(That's a variety of fruits.)*
- yogurt, milk, cheese *(That's a variety of dairy products.)*
- fluoride, calcium, iron *(That's a variety of minerals.)*
- pork, beef, chicken *(That's a variety of meats.)*

Lesson 8: A Well-Balanced Diet

Application

20M

Speaking and Listening: Students will describe a daily balanced diet and will use text evidence to support an appropriate response.

TEKS 2.1.D; TEKS 2.7.C

A WELL-BALANCED DIET (15 MIN.)

- Divide students into small groups of three or four students each.
- Tell them they are going to plan three meals together: breakfast, lunch, and dinner.

Exit Pass

With a Group: With the members of your group, decide what you would cook or eat for three meals in one day to have a well-balanced diet. Use evidence from the text to support your response.

Discuss food choices with one another, and make reasonable group decisions for each meal; include a drink with each meal.

Choose one member of your group to be the spokesperson who will present your well-balanced diet to the class. TEKS 2.7.C

- Have a spokesperson from each group present to the class the well-balanced diet planned by the group. Encourage the spokesperson to also ask the audience questions about the topic.
- Have students in the audience ask questions of the spokesperson—and answer questions from the spokesperson—about what the speaker says about the group's well-balanced diet.
- If possible, create a video or audio tape of students' presentations to replay at a later time. As students watch or listen to the presentations a second time, have them identify elements that make a strong formal presentation.

Support

Review the meaning of the phrase *well-balanced diet*.

ENGLISH LANGUAGE LEARNERS

Speaking and Listening

Expressing Information in Formal Presentations

Beginning
Students will plan for a very brief presentation by listing one or two examples of healthy foods.

Intermediate
Students will plan for a brief presentation by listing three or four examples of healthy foods.

Advanced/ Advanced High
Students will plan for a longer presentation by listing five or more examples of healthy foods.

ELPS 1.G; ELPS 3.F; ELPS 3.I

TEKS 2.1.D Work collaboratively with others by following agreed-upon rules for discussion, including listening to others, speaking when recognized, making appropriate contributions, and building on the ideas of others; **TEKS 2.7.C** Use text evidence to support an appropriate response.

For example, have students note when the spokesperson was speaking at an appropriate pace, was responding to questions from the audience, and was presenting the information in complete sentences, using domain-related vocabulary.

MULTIPLE MEANING WORD ACTIVITY (5 MIN.)

Definition Detective: Skip

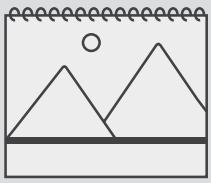
- Remind students that they heard in the Read-Aloud, "You may stumble over math problems, thinking five plus seven equals twenty, or skip over a line in your reader so that your sentences are all mumbo-jumbo."
- Have students work with a partner to think of as many meanings for the word *skip* as they can, or discuss ways they can use the word *skip*.

Show Poster 4M (Skip)

- Have students point to the image on the poster that shows how the word *skip* was used in the lesson. *(one)*
- *Skip* also means other things. *Skip* can mean to move forward in a light or playful way by taking short, quick steps and jumps. Have a student point to the image that represents this sense of the word. *(two)*
- *Skip* also means to throw a flat stone along the surface of water so that it bounces. Have a student point to the image that represents this sense of the word. *(three)*
- Have students share whether they or their partner thought of any of these definitions of the word *skip*.
- Have students work with a partner to quiz each other on the different meanings of *skip*.

End of Lesson

Poster 4M



Support

Provide the following example: "You could say, 'It's not a good idea to skip breakfast. Which *skip* am I?' And your neighbor would respond, 'That's one.'"

LESSON

9

THE HUMAN BODY

A Healthy Human Body

PRIMARY FOCUS OF LESSON

Speaking and Listening

Students will identify human body systems and how to keep the systems healthy.

TEKS 2.1.D

Reading

Students will identify the main purpose of "A Healthy Human Body."

TEKS 2.6.B; TEKS 2.9.D.i

Language

Students will demonstrate an understanding of the Tier 2 word *recovery*.

TEKS 2.3.B

Writing

Students will write a paragraph in the *My Human Body Journal* describing a day in which they practice many healthy habits.

TEKS 2.7.B; TEKS 2.7.E; TEKS 2.12.B

FORMATIVE ASSESSMENT

Activity Page 9.2

My Human Body Journal Students will write a paragraph in the *My Human Body Journal* describing a day in which they practice many healthy habits.

TEKS 2.7.B; TEKS 2.12.B

TEKS 2.1.D Work collaboratively with others by following agreed-upon rules for discussion, including listening to others, speaking when recognized, making appropriate contributions, and building on the ideas of others; **TEKS 2.6.B** Generate questions about text before, during, and after reading to deepen understanding and gain information; **TEKS 2.9.D.i** Recognize characteristics and structures of informational text, including the central idea and supporting evidence with adult assistance; **TEKS 2.3.B** Use context within and beyond a sentence to determine the meaning of unfamiliar words; **TEKS 2.7.B** Write brief comments on literary or informational texts that demonstrate an understanding of the text; **TEKS 2.7.E** Interact with sources in meaningful ways such as illustrating or writing; **TEKS 2.12.B** Compose informational texts, including procedural texts and reports.

LESSON AT A GLANCE

	Grouping	Time	Materials
Introducing the Read-Aloud (10 min.)			
What Have We Already Learned?	Whole Group	10 min.	❑ Posters 2, 4–7 (Flip Book)
Read-Aloud (30 min.)			
Purpose for Listening	Whole Group	30 min.	❑ Posters 2, 3 (Flip Book) ❑ Flip Book: 9A-1–9A-12
"A Healthy Human Body"			
Comprehension Questions			
Word Work: *Recovery*			
This is a good opportunity to take a break.			
Application (20 min.)			
Healthy Habits	Independent/ Whole Group	20 min.	❑ Activity Pages 9.1, 9.2
My Human Body Journal			
Sayings and Phrases: "Get Up on the Wrong Side of the Bed"			

CORE VOCABULARY

calories, n. units used to measure the amount of energy in foods
Example: The calories in the foods we eat provide energy to fuel our bodies.
Variation(s): calorie

network, n. a group of things that are connected to one another
Example: The human body is a network of complicated systems working together.
Variation(s): networks

recovery, n. a return to good health
Example: Marie made a quick recovery from the flu.
Variation(s): recoveries

terms, n. words or phrases used to describe a thing or an idea
Example: The terms *sweat* and *perspiration* mean the same thing.
Variation(s): term

windpipe, n. the passage in the throat that carries air to the lungs
Example: The windpipe and the esophagus are located next to each other, but serve very different functions.
Variation(s): windpipes

Vocabulary Chart for "A Healthy Human Body"

Type	Tier 3 Domain-Specific Words	Tier 2 General Academic Words	Tier 1 Everyday Speech Words
Vocabulary	calories *(calorías)* windpipe	recovery	
Multiple Meaning		network terms	
Sayings and Phrases	covers a lot of territory get up on the wrong side of the bed		

Start Lesson

Lesson 9: A Healthy Human Body

Introducing the Read-Aloud

10M

Speaking and Listening: Students will identify human body systems and how to keep the systems healthy. **TEKS 2.1.D**

WHAT HAVE WE ALREADY LEARNED?

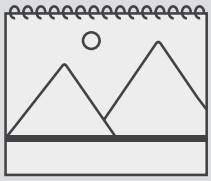
- Have students identify the connection between cells, tissues, organs, and systems. *(Cells are the smallest units of living things; cells with similar functions together form tissues; tissues form organs; and organs make up the different systems in the body.)*

Check for Understanding

Recall: Point to the following systems on Poster 2 and explain the function of the system:

- Which is the skeletal system? *(fifth from the left; made up of the bones and gives the body shape)*
- Which is the respiratory system? *(third from the left; takes in air to the body)*
- Which is the muscular system? *(last one on the right; allows the body to move and gives it strength)*
- Which shows both the digestive and excretory systems? *(fourth from the left; turns food into useful nutrients and excretes waste)*
- Which is the nervous system? *(second from the left; controls communication between the brain and the rest of the body)*
- Which is the circulatory system? (*first on the left; keeps blood flowing through the body)*
- **Turn and Talk:** Talk with your partner about ways you can keep these systems healthy. [Have several students share their responses with the class. *(Answers may vary, but may include that they could eat healthy food, have a well-balanced diet, drink plenty of water, etc.)*]

Posters 2, 4–7



Support

Review the meaning of the word *function*.

TEKS 2.1.D Work collaboratively with others by following agreed-upon rules for discussion, including listening to others, speaking when recognized, making appropriate contributions, and building on the ideas of others.

Lesson 9: A Healthy Human Body

Read-Aloud

30M

Reading: Students will identify the main purpose of "A Healthy Human Body."

TEKS 2.6.B; TEKS 2.9.D.i

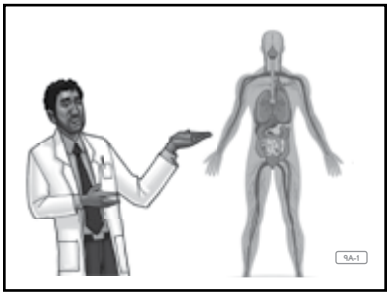
Language: Students will demonstrate an understanding of the Tier 2 word *recovery*.

TEKS 2.3.B

PURPOSE FOR LISTENING

- Tell students to listen carefully to determine the main purpose of the Read-Aloud, or what the author wants to explain.

"A HEALTHY HUMAN BODY" (15 MIN.)



Show Image 9A-1: Nick Nutri pointing at a diagram of a human body

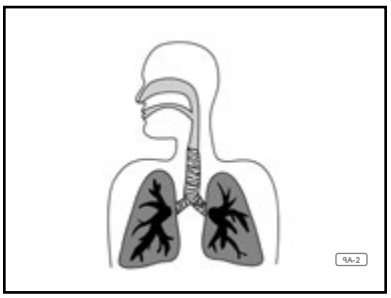
Take a look at this, boys and girls. What are you looking at? Yes, you're looking inside a human body with all of its many complicated parts. Can you find the stomach and the intestines? Who sees the kidneys and the bladder? *[Have students identify the various organs in the image.]*

Today, we are going to review some of the things that you've learned about the human body and its **network** of important systems. *A network is a group of things connected to each other.* Let's start with the system you learned about last. Which system helps you sweat and pee? Yes, the excretory system. And, who remembers other **terms**, or words, for sweat and pee? Yes, *perspiration* and *urine*. Have you tried using those terms with your family and friends?

Support

Review the fact that the stomach, intestines, kidneys, and bladder are part of the digestive and excretory systems.

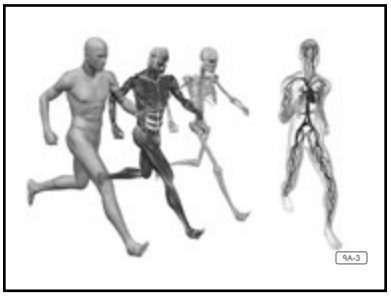
TEKS 2.6.B Generate questions about text before, during, and after reading to deepen understanding and gain information; **TEKS 2.9.D.i** Recognize characteristics and structures of informational text, including the central idea and supporting evidence with adult assistance; **TEKS 2.3.B** Use context within and beyond a sentence to determine the meaning of unfamiliar words.



Show Image 9A-2: Lung and windpipe
Which system is responsible for processing your food into nutrients that your body can use and getting rid of waste that it doesn't need?

Yes, the digestive system. Raise your hand if you can tell me the name of the tube that carries food from the mouth to the stomach.

Great job—the esophagus is your food tube. We didn't talk about it, but there is another tube right beside it called the **windpipe**. The windpipe leads to your lungs. Can anyone guess what travels through your windpipe from your mouth to your lungs? It's something else that the body needs to live. Right—air! *[Explain that the esophagus is not shown in this image. Explain that air travels down the windpipe through the nose or through the mouth.]*



Show Image 9A-3: Muscular, skeletal, and circulatory systems
Look at the picture of the human body in this image. Look at all the bones that make up the skeleton. What's that system called? Oh, that was an easy one, wasn't it? The skeleton is part of the skeletal system.

Here's another easy one. What system do muscles belong to? Yes, the muscular system. The skeletal and muscular systems work together to help you move.

Nerves are part of your nervous system. Look at Poster 2 (Human Body Systems). Which one is the nervous system? Do you see the nerves running like highways across every part of the body, traveling up the spinal column, all the way to the brain?

Find the circulatory system on Poster 2. Don't confuse the nerves with veins and arteries, the tubes that carry blood through the body. The nervous system and the circulatory system look similar in the pictures. That's because blood covers a lot of territory, too. We've talked about nutrients and the way they travel through your blood to support your body systems. Without blood, these important substances would have no way to nourish your body. The circulatory system circulates, or moves, your blood.

Support

Review the meaning of the term *nutrients*.

Support

Review the meaning of the term *nourish*.

Support

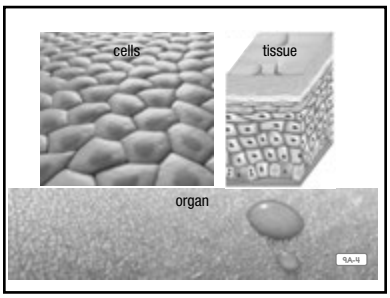
Review the meaning of the term *function*.

Support

Review Poster 3 (Cells, Tissues, Organs, and Systems) about the progression from cells to systems.

Challenge

Have students identify the largest organ in the body. *(the skin)*



Show Image 9A-4: Cells, tissue, and organ
You know that each body system performs a separate function, and that each system is made up of organs.

[Point to the skin, then the tissue, and finally the cells as you read the following.]

Organs are made up of tissues, and tissues are made up of cells. From largest to smallest, the order is organs, tissues, then cells, which are the smallest.

Let's think about skin as an example. Moving from the smallest part to the largest, skin cells combine to form skin tissues, and those tissues combine to form the skin as we see it. That's the way the human body works. *[Encourage students to touch the skin of their arms and face.] The skin is an interesting organ because it covers the entire body, and it is the largest organ in the human body!*

It is important to keep your cells, tissues, organs, and body systems all running smoothly. You can do that in many different ways.

Show Image 9A-5: Baked potatoes and French fries
We've talked about the importance of making healthy food choices. Food gives you energy to grow, breathe, move, fight germs, and heal. Some foods have more nutrients in them than others. Choose a variety of foods, especially those high in nutrients.

Challenge

Review the six categories of nutrients. *(water, proteins, carbohydrates, fats, vitamins, and minerals)*

Balance your daily diet with several servings of grains, fruits, and vegetables, and smaller portions of dairy, meat, and eggs.

Show Image 9A-6: Produce
Remember to eat only a few sweets and fats. And don't forget that fresh food will give you lots more vitamins and minerals than packaged ones. So, head for the produce aisle or a local farmers' market and stock up on fresh fruits and vegetables. *Look at all the healthy fruits and vegetables in Nick Nutri's basket. Which is your favorite?*

Besides eating a well-balanced diet, what other ways can you keep your body healthy? *[Pause for suggestions.]* Great suggestions!

Show Image 9A-7: Exercise

Exercise, or staying active, can help you maintain a healthy body weight. When you exercise, your body uses energy from the food you eat. The amount of energy that food provides to the human body is measured by **calories**. Food labels list the number of calories, or the amount of energy, in packaged foods, telling you how much energy is stored in them. You should eat enough food each day to provide your body with about the same amount of energy that it uses up during the day. If you eat too much and don't exercise, your body will store the extra food energy as fat. If you don't eat enough to satisfy your body's needs, your body will use its stored energy and you may lose weight.

You are burning energy all the time, even when you are sleeping, but your body uses much more energy to exercise than it does to sleep. If you weighed a hundred pounds, you would burn about forty calories just by standing still for thirty minutes, but if you walked for thirty minutes, you would burn about 120 calories. You would use up three times more energy by walking as you would by standing still for the same amount of time.

Here's a puzzle for you to solve. There are about 160 calories in a snack-size bag of potato chips. If you burn 120 calories by walking for thirty minutes, about how much longer would you need to walk to burn up all the calories in that bag of chips?

(You would have to walk another ten minutes—forty minutes in all—to burn the additional forty calories in the bag of chips. 120/30=4 calories per minute) What type of exercise do you think might burn the calories even faster than walking?

Support

Record the numbers on the board/chart paper and have students try to find the solution.

Show Image 9A-8: More exercise

Exercise keeps your heart and lungs working well, fights off illness and disease, and builds strong bones. Make exercise a daily part of your life. Whenever possible, walk and cycle instead of getting in a car. Climb stairs instead of taking an elevator. Swim, play soccer, take karate, or gymnastics lessons, or shoot hoops with your buddies. All of these are good forms of exercise. Choose what you enjoy and have fun! *What kinds of exercise do you enjoy?*

Show Image 9A-9: Good hygiene

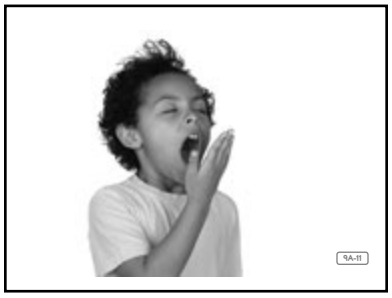
Keeping clean is another important part of staying healthy. There are many types of germs that can make you sick. Bacteria, the tiny, one-celled creatures that Anton van Leeuwenhoek studied, are one of the most common types of germs. Bacteria are everywhere. They are an important part of nature, and most bacteria are not your enemies. In fact, many bacteria live in your gut and help you digest your food.

But, millions more live on your skin, and some of them may be harmful. That's why it is important to wash your hands often and well. Wash them throughout the day, especially before eating. Besides hand washing, make sure that you clean every other part of your body, too. Take frequent showers and baths, shampoo often, and keep your fingernails short and clean. Brush your teeth regularly to get rid of old food and germs that feed on it. Use floss to keep your gums healthy and get rid of food stuck between your teeth.

Show Image 9A-10: Regular habits

Regular toilet habits are signs of good health. Most of the time you don't have to think too hard about these daily habits, but sometimes your body reacts and lets you know that you need to take extra care. Sometimes feces become hard and dry, making them difficult to pass. That is called constipation. With diarrhea, the opposite thing happens. Feces become loose and runny and may signal an infection in the intestines. When waste systems do not

function well, drinking lots of water usually helps. Make sure to listen to your body and the nerve signals that it sends to your brain. Don't put off using the bathroom when you need to go.



Show Image 9A-11: Sleep

How many of you wake up feeling tired in the morning? Has anyone ever asked you, "Did you get up on the wrong side of the bed?"

If you're tired or grouchy when you wake up, that may mean that you are not getting all of the rest that your body needs. Most seven- or eight-year-olds need about ten or eleven hours of sleep each night. As you sleep, damaged body cells and tissues are repaired and replaced. If you are sick, sleep will help speed your **recovery**, or return to good health.

Eating well, exercising, keeping clean, and getting enough rest are all good ways to keep your millions and billions and trillions of tiny cells working properly. You should also make sure to have regular checkups with a doctor or other health care professional.

I have loved sharing my knowledge of health and nutrition with you. Your body is yours alone, and you alone have the power to take care of it your whole life. Now that you know what to do to keep it in good condition, I hope you will treat it as well as you would any one of your favorite machines.

Show Image 9A-12: The amazing human body

I'm sure you'll agree that you'll never find another machine quite as amazing as the human body!

Challenge

Have students explain the meaning of "get up on the wrong side of bed."

Challenge

Remind students that in the first lesson in this domain, they heard the body referred to as the "human machine." Have students explain what is meant by this phrase. *(Like a machine, a human body is made up of many parts that must work together.)*

COMPREHENSION QUESTIONS (10 MIN.)

Check for Understanding

Evaluate: What is the main purpose of "A Healthy Human Body," or what did the author want to explain? *(The main purpose was to explain how to keep the body healthy.)*

ENGLISH LANGUAGE LEARNERS

Speaking and Listening

Exchanging Information and Ideas

Beginning
Reframe open-ended questions as simple *yes/no* questions (e.g., "Do both the esophagus and the windpipe start at the same place in the body?").

Intermediate
Provide students with a specific sentence frame (e.g., "The esophagus and the windpipe are similar because . . .").

Advanced/ Advanced High
Encourage students to use key details from the text in complete sentences when responding to a question.

ELPS 2.G; ELPS 3.F

1. **Literal.** What are some ways Nick Nutri said you can keep your body healthy? *(eat a well-balanced diet; exercise; keep clean; and get enough rest)*
2. **Literal.** What happens if someone eats more calories than they burn up in exercise? *(They gain weight.)* What happens if someone eats fewer calories than they burn up in exercise? *(They lose weight.)*
   - **Literal.** What are calories? (*units of measuring the amount of energy in foods*)
3. **Literal.** What are some ways you can prevent germs from entering the body? (*wash hands often, especially before eating; practice general good hygiene by bathing regularly and brushing and flossing teeth*)
4. **Inferential.** In what ways are the windpipe and the esophagus similar, and in what way are they different? (*They are similar in that they are both tubes that lead from the mouth to another part of the body. They are different in that the esophagus leads to the stomach, whereas the windpipe leads to the lungs.*)
5. **Evaluative.** *What? Pair-Share:* Asking questions after a Read-Aloud is one way to see how much everyone has learned. Think of a question you can ask your neighbor about the Read-Aloud that starts with the word *what*. For example, you could ask, "What is one way to prevent germs from entering the body?" Turn to your neighbor and ask your *what* question. Listen to your neighbor's response. Then your neighbor will ask a new *what* question, and you will get a chance to respond. I will call on several of you to share your questions with the class.

WORD WORK: RECOVERY (5 MIN.)

1. In the Read-Aloud you heard, "If you are sick, sleep will help speed your recovery."
2. Say the word *recovery* with me.
3. *Recovery* means a return to good health from an illness or injury.
4. Will made a complete recovery after breaking his leg.
5. Think of a time you made a recovery, and use the word *recovery* when you tell us about it. [Ask two or three students. If necessary, guide and/or rephrase students' responses: "With rest and time I made a recovery from . . . "]
6. What's the word we've been talking about?

Use a Making Choices activity for follow-up. I am going to read some statements. If the statement describes a recovery, say, "That is a recovery." If it does not describe a recovery, say, "That is not a recovery." Remember to answer in complete sentences.

- Keisha missed several days of school, but she still had a fever when she woke up this morning so she missed another day. *(That is not a recovery.)*
- Felicity caught the chicken pox, was home for a week, and when she went back to school she was completely healed. *(That is a recovery.)*
- Even after seeing the physical therapist twice a week for a month, Pierre's elbow still ached. *(That is not a recovery.)*
- After a long night at the hospital, Dr. Simon took a nap and felt as good as new. *(That is a recovery.)*

Activity Page 9.1

Support

Review which healthy habit is represented by each image on Activity Page 9.1.

Activity Page 9.2

ENGLISH LANGUAGE LEARNERS

Writing

Writing Informational Text

Beginning
Allow students to dictate their journal entries to an adult.

Intermediate
Allow students to collaborate with a peer to write their journal entries.

Advanced/ Advanced High
Have students work independently to write their journal entries.

ELPS 5.F

Lesson 9: A Healthy Human Body

Application

20M

Writing: Students will write a paragraph in the *My Human Body Journal* describing a day in which they practice many healthy habits. **TEKS 2.7.B; TEKS 2.7.E; TEKS 2.12.B**

HEALTHY HABITS (5 MIN.)

- Have students turn to Activity Page 9.1.
- Explain that they will complete this activity page individually to see what healthy habits they currently practice.
- Have students place a checkmark next to each healthy habit they practice, and then write a sentence describing how they practice that habit.
- For healthy habits that have not been checked off, encourage students to consider how they could practice those healthy habits.

MY HUMAN BODY JOURNAL (10 MIN.)

- Tell students that they are going to write a paragraph for the *My Human Body Journal* describing a day in which they practice many healthy habits.
- Explain that students will use Activity Page 9.2 to write this journal entry.

Check for Understanding

Turn and Talk: With your partner, discuss some habits that will keep your body healthy.

[Have several students share their responses with the class.]

- Have students work independently to complete Activity Page 9.2. Explain that they should write one paragraph describing a day in which they practice many healthy habits. Prompt students with the following questions:
  - How would you begin the day?

TEKS 2.7.B Write brief comments on literary or informational texts that demonstrate an understanding of the text; **TEKS 2.7.E** Interact with sources in meaningful ways such as illustrating or writing; **TEKS 2.12.B** Compose informational texts, including procedural texts and reports.

- What would you do to keep your body healthy during the day?
- How would you end the day?

- Have students add an illustration at the top of Activity Page 9.2 to support their writing.
- Have several students share their journal entry with the class.
- Collect all the journal pages to assemble into individual student journals, but consider making copies of the pages for inclusion in the students' writing portfolios.
- Explore with students various digital tools to publish their journals. Such tools include various student-publishing software and web-based publishing programs.

SAYINGS AND PHRASES: "GET UP ON THE WRONG SIDE OF THE BED" (5 MIN.)

- Explain that sayings are literary devices that usually express general truths based on experiences and observations of everyday life. While some sayings do have literal meanings—that is, they mean exactly what they say—many have a richer meaning beyond the literal level.
- Ask students if they have ever heard anyone say "She got up on the wrong side of the bed" or "Did he get up on the wrong side of the bed?"
- Have students repeat the saying "get up on the wrong side of the bed."
- Explain that this saying is another way of saying that someone woke up in a bad mood and is acting grouchy or mean.
- Ask students if they have ever woken up in a bad mood and stayed grouchy for a while. Explain that instead of saying "I'm in a really bad mood," they could say "I got up on the wrong side of the bed."
- Give students the opportunity to recount an experience with in which they "got up on the wrong side of the bed." Remind them to use appropriate facts and relevant, descriptive details, and to speak audibly in coherent sentences.
- Look for more opportunities to use this saying in the classroom.

End of Lesson

Support

Encourage students to use Activity Page 9.1 to remind them of some healthy habits. Encourage them to include sentences in their paragraph that they wrote on Activity Page 9.1.

Support

Be sure students understand the difference between the literal meanings of the words and their implied or figurative meanings.

Challenge

Remind students that in today's Read-Aloud, one possible reason was given for why someone might get up on the wrong side of the bed. Have them explain that reason. *(Someone might be said to have gotten up on the wrong side of the bed because he or she did not get enough sleep and woke up grumpy.)*

Grade 2 | Knowledge 9

Domain Review

NOTE TO TEACHER

You should spend two days reviewing and reinforcing the material in this domain. You may have students do any combination of the activities provided, in either whole-group or small-group settings.

CORE CONTENT OBJECTIVES ADDRESSED IN THIS DOMAIN

Students will:

- Identify the five senses and associated body parts
- Identify the skeletal, muscular, circulatory, nervous, digestive, and excretory systems as important systems in the human body
- Describe the significant contributions of Anton van Leeuwenhoek
- Explain that all living things are made of microscopic cells
- Describe the relationship between cells, tissues, organs, and systems
- Identify important components of the digestive system and their functions
- Describe the process of nourishing the body from the time food is taken into the mouth until waste is removed from the body
- Identify important components of the excretory system and their functions
- Describe how the digestive and excretory systems work together
- Explain the importance of vitamins and minerals to the body
- Explain the importance of eating a balanced diet
- Plan a daily balanced diet

REVIEW ACTIVITIES

Riddles for Core Content

- Ask students riddles such as the following to review core content:
  - Many human organs are inside the body, but all of your sense organs (that's us) are visible. What are we? *(eyes, ears, nose, tongue, skin)*
  - I lived many hundreds of years ago in a small Dutch village. My curiosity led me to the naming of microscopic cells. Who am I? *(Anton van Leeuwenhoek)*
  - The urethra and two ureters carry urine out of your body. These three tubes are all part of my system. What am I? *(the excretory system)*
  - What is the name of the tube, located near the windpipe, that takes food from the throat to the stomach? *(esophagus)*
  - I am a particularly important nutrient in the first two years of life, but after that you need to limit how much of me you consume. What am I? *(fats)*
  - We are two nutrients that are important to the body, but we are needed in smaller quantities than proteins, fats, and carbohydrates. What are we? *(vitamins and minerals)*
  - I am a liquid that is vitally important to all life on Earth. What am I? *(water)*
  - I am a favorite snack food made from potatoes and fried in oil. I am sold at many fast food restaurants, but it would be unhealthy to eat me every day. What am I? *(French fries)*
  - We are made up of cells and tissues and work within body systems. We include both the heart and the brain. What are we? *(organs)*

Image Review

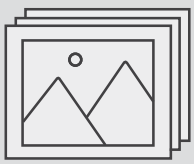
- You may show the Flip Book images from any Read-Aloud again and have students retell the Read-Aloud using the images.

Image Card Review

Materials: Image Cards 8–13

- Hold Image Cards 8–13 in your hand, fanned out like a deck of cards.
- Hand one card to each of six students.
- Students must then look at their cards and figure out the correct sequence for the digestive process.
- Ask them to stand in the proper order, facing the others so that they may give their input as well.

Image Cards 8–13



Domain-Related Trade Book or Student Choice

Materials: Trade book

- Read a trade book to review a particular domain-related topic.
- You may also choose to have students select a Read-Aloud to be heard again.

Key Vocabulary Brainstorming

Materials: Chart paper, chalkboard, or whiteboard

- Give students a key vocabulary word such as *fats*.
- Have them brainstorm everything that comes to mind when they hear the word, such as, "Too many fats will make you gain weight."
- Record their responses on chart paper, a chalkboard, or a whiteboard for easy reference.

Class Book: Eating Our Way to Health—What Foods a Healthy Body Needs

Materials: Drawing paper, drawing tools

- Tell the class or a group of students that they are going to make a class book to help them remember important nutritional information that they have learned in this domain.
- Have students brainstorm which nutrients humans need and which foods supply those nutrients.
- Have each student choose one food to draw a picture of and then write a caption for the picture, including which important nutrients that food supplies for the growth of a healthy human body.
- Bind the pages to make a book to put in the class library for students to read again and again.

Challenge

Those students who are ready to do so may contribute multiple illustrations and captions, or they may plan an organized structure for the book (e.g., categorized by food group, color, or important nutrients).

Grade 2 | Knowledge 9

Domain Assessment

This domain assessment evaluates each student's retention of domain and academic vocabulary words and the core content targeted in *The Human Body: Building Blocks and Nutrition*. The results should guide review and remediation the following day.

There are four parts to this assessment. You may choose to do the parts in more than one sitting if you feel this is more appropriate for your students. Part I (vocabulary assessment) is divided into two sections: the first assesses domain-related vocabulary, and the second assesses academic vocabulary. Parts II, III, and IV of the assessment address the core content targeted in *The Human Body: Building Blocks and Nutrition*.

PART I TEKS 2.7.F

Activity Page DA.1

Directions: I am going to ask a question using a word you have heard in the Read-Alouds. If the answer to the question is yes, circle thumbs-up. If the answer is no, circle thumbs-down. I will ask each question two times. Let's do number one together.

Note: For students who will be using the Editable PDF Activity Page, please have them answer by typing "yes" if the sentence is correct, and "no" if the sentence is incorrect.

1. **Liver:** Is the liver located in your throat and one of your least important organs? *(thumbs-down)*
2. **Saliva:** Is saliva the fluid that leaves your body through the urethra? *(thumbs-down)*
3. **Cells:** Is your body made up of cells that are so small that they must be viewed through a microscope? *(thumbs-up)*
4. **Intestines:** Are your large and small intestines both part of the same long tube? *(thumbs-up)*
5. **Bladder:** Is the bladder where feces stay until they are ready to leave the body? *(thumbs-down)*
6. **Nutrition:** Can people get all the nutrition they need from candy and soda? *(thumbs-down)*
7. **Carbohydrates:** Are carbohydrates the main energy source for the body? *(thumbs-up)*

8. **Minerals:** Does milk provide calcium, an important mineral for the body? *(thumbs-up)*
9. **Nutritionist:** Do nutritionists believe it's ok to eat lots of fats and sugar instead of fruits, vegetables, and protein? *(thumbs-down)*
10. **Kidney:** Do kidneys work within the excretory system to balance the amount of water in the body? *(thumbs-up)*

Directions: I am going to ask more questions using other words you have heard in the Read-Alouds. If the answer is yes, circle thumbs-up. If the answer is no, circle thumbs-down. I will ask each question two times.

11. **Systems:** Are the digestive and excretory systems two of the human body's systems? *(thumbs-up)*
12. **Absorb:** Do the villi inside the small intestine absorb nutrients into the body? *(thumbs-up)*
13. **Moderation:** Are starving yourself and overeating examples of moderation? *(thumbs-down)*
14. **Nourish:** Do foods such as fast food burgers, fries, candy, and cookies nourish the body? *(thumbs-down)*
15. **Essential:** Are a well-balanced diet, plenty of rest, and regular exercise essential to good health? *(thumbs-up)*

PART II TEKS 2.6.G

Activity Page DA.2

Directions: For each row of pictures, you will be asked to look for specific things. Follow my directions carefully. In some instances there may be more than one right answer and you may circle more than one picture. We will do the first one together.

Note: If students will be using the Editable PDF Activity Page, please have them type the answer(s) inside the boxes.

1. Look at the pictures in the first row. How are these pictures alike? *(They are all pictures of tools with lenses that magnify objects.)* The first picture is a picture of a telescope. The next picture is a picture of a modern microscope. The third picture shows a hand lens or magnifying glass, and the fourth picture shows an early microscope. Anton van Leeuwenhoek made many microscopes to study living cells. Circle the picture that looks most like the microscopes he made over 400 years ago. Which picture should you circle? Draw a circle around the fourth picture, the simplest microscope shown. *(4)*
2. Van Leeuwenhoek described bacteria, tiny one-celled organisms that sometimes cause disease. Circle the picture(s) of places where bacteria live. You may circle more than one. *(1, 2, 3, 4)*

3. Human body systems are made up of organs. All organs have important functions, but we can live without some of our organs. Circle the organ pictured that, although very important, is not vital to life. You will not die if you lose this organ. *(4)*

4. The digestion of your food involves different organs. Circle the sense organ that is responsible for helping food begin its journey through your body. *(3)*

5. Food passes from the mouth to the esophagus. Circle the organ that receives the food when it leaves the esophagus. *(4)*

6. Both the digestive system and the excretory system have places to hold waste before it leaves the body. Solid waste is held in the rectum. Circle the organ that holds liquid waste. *(1)*

7. If you eat a healthy diet, you will get most of the nutrients that your body needs, including vitamins and minerals. Circle the most healthy, nutritious food choice(s). You may circle more than one. *(2, 4)*

8. Your doctor has told you to eat fewer fats and less sugar. Which of the following meals should you choose in order to follow the doctor's advice? You may circle more than one. *(2, 3)*

9. Small, finger-like villi absorb nutrients. Circle the digestive organ in which villi are found. *(3)*

10. Your liver cleans your blood. Circle the picture of a common household object that functions most like your liver. *(1)*

PART III

TEKS 2.6.G; TEKS 2.7.F

Directions: Choose the correct term from the word bank that describes what the images are, and write the term in the blank provided for each set of images.

Activity Page DA.3

1. These are _____. *(systems)*
2. These are _____. *(tissues)*
3. These are _____. *(cells)*
4. These are _____. *(organs)*

Activity Page DA.4

PART IV TEKS 2.12.B

Directions: Write a few words, phrases, or sentences to answer each question or statement.

Note: You may need to have some students respond orally if they are not able to respond in writing.

1. Explain what the digestive system does, and what some of the organs in the digestive system do.
2. Explain what the excretory system does, and what some of the organs in the excretory system do.
3. What should you eat to keep a well-balanced diet?
4. What are some things you can do to stay healthy?

Grade 2 | Knowledge 9

Culminating Activities

NOTE TO TEACHER

Please use this final day to address class results of the Domain Assessment. Based on the results of the Domain Assessment, you may wish to use this class time to provide remediation opportunities that target specific areas of weakness for individual students, small groups, or the whole class.

Alternatively, you may also choose to use this class time to extend or enrich students' experience with domain knowledge. A number of enrichment activities are provided in this section in order to provide students with opportunities to enliven their experiences with domain concepts.

REMEDIATION

- You may choose to regroup students according to particular areas of weakness, as indicated by Formative and Domain Assessment results.
- Remediation opportunities include:
  - targeting Review Activities
  - revisiting lesson Applications
  - rereading and discussing select Read-Alouds
  - using the corresponding activities in the Language Studio

ENRICHMENT

Guest Presenter

- Invite a nutritionist to come talk to the class about healthy foods and healthy eating habits.

Making a Simple Magnifying Glass

Materials: Clear plastic bottle; dry marker pen; scissors; water

- **Directions**:
  - Draw a circle shape at the neck of the bottle. It is important that it is at the neck so that it creates a disc shape.
  - Cut out the circle.
  - Pour a drop of water into the disc.
  - Hold it over a book and watch the letters get bigger.
  - The science simply explained:
  - The disc shape curves outward, forming a convex shape. By adding the water, the light that passes through it is refracted, or bent inwards, creating a lens effect and enlarging the size of the letters.

Reading Food Labels

- Collect or have students bring packaged food labels to class.
- Divide students into groups, and give each group a handful of labels.
- Ask them to plan a well-balanced meal from the foods they are given.
- Have them record various findings: sodium content, added sugars, vitamins, calories, etc., and hold a discussion to see if they are indeed able to put together a well-balanced meal from packaged food.

Round-Robin Storytelling of Food's Journey

- Display a chart or image of the digestive system.
- Have students sit in a circle, and tell them that they are going to make up the tale of a piece of food on its journey through the digestive tract.
- Ask for a volunteer to begin the tale, for example, "I opened my mouth and put a cube of cheese into its opening".
- Proceed around the circle, having each student add a sentence: "My teeth crushed the cheese . . . Saliva swirled around my mouth and softened the cheese . . . As I chewed, the cheese formed a lump of food," and so on.
- You may want to hand out random cue cards with words written on them (saliva, esophagus, etc.) rather than going in order around the circle. This will facilitate the telling of the story—making sure every step in the process is included—and keep students more involved, awaiting their turns.

Teacher Resources

Grade 2	Knowledge 9

Teacher Guide

Teacher Resources

In this section you will find:

- Activity Book Answer Key
- Texas Essential Knowledge and Skills Correlation Chart
- English Language Proficiency Standards Correlation Chart

ACTIVITY BOOK ANSWER KEY

NAME: _____
DATE: _____

2.2 **Activity Page**

Using a Magnifying Glass

Directions: Look at the fabric swatch you have been given without using the magnifying glass. Draw what you see under the heading "What I See With My Eyes Alone." Then, look at the fabric swatch using the magnifying glass, and draw what you see under the heading "What I See Through the Magnifying Glass."

What I See With My Eyes Alone

Answers may vary, but should reflect what is seen by the naked eye.

What I See Through the Magnifying Glass

Answers may vary, but should reflect what is seen through the magnifying glass.

Knowledge 9

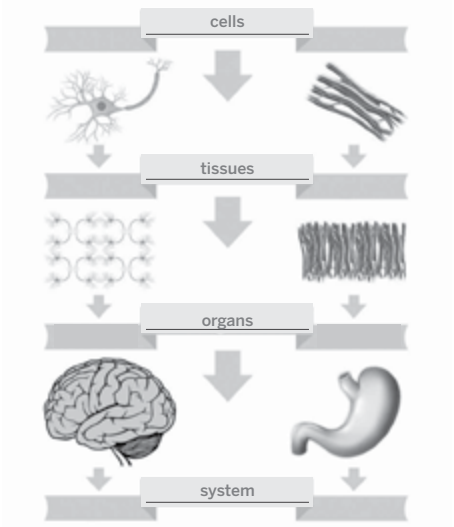
NAME: _____
DATE: _____

4.1 **Activity Page**

What's the Connection?

systems	**cells**
tissues	**organs**

Directions: Choose the correct word from the word bank to write in each blank, starting with the smallest unit and building up to the largest.



Knowledge 9

NAME: _____
DATE: _____

PP.1 **Assessment**

Part I:
Anton van Leeuwenhoek

Directions: Read the statements and put an X beside the statement that best describes Anton's contribution to the world.

_____ He invented the microscope.
_____ He wrote a book called *Micrographia*.
__X__ He was the first person to describe bacteria.
_____ He made cloth from tiny animal hairs.

Knowledge 9

Part II:
Cells, Tissues, Organs, Systems

cells	**tissues**	**organs**	**systems**	
function	**connective**	**muscle**	**epithelial**	**nervous**

Directions: Choose the word from the word bank that goes with the sentence, and write it in the blank. Not all words in the word bank are used; some are used more than once.

1. The smallest units of human life are called _____cells_____.
2. Tissues are made up of similar _____cells_____.
3. Organs are made up of _____tissues_____.
4. Your heart is one of your most important _____organs_____.
5. The tissue that forms protective barriers is called _____epithelial_____ tissue.
6. Blood, bone, and fat are all _____connective_____ tissues.

NAME: _____

DATE: _____

PP.1 CONTINUED **Assessment**

7. Body systems are made up of different _____organs_____.

8. Every organ in the body has a special job, or _____function_____.

9. The digestive and excretory _____systems_____ process your food and waste.

Knowledge 9

NAME: _____

DATE: _____

5.1 **Activity Page**

Directions: The following pictures show the different steps in the process of digestion. Number each one in the correct order from 1–6, following food from the mouth to the anus.

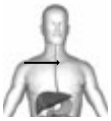
1 Teeth crush the food, and saliva softens it into a mashed up lump of food.

6 Feces, or waste, is stored in the rectum until it is ready to be passed out of the body through the anus.

5 Food enters the large intestine, where water is absorbed from the waste and passed into the blood-stream.

4 Food enters the small intestine, where millions of tiny villi absorb its nutrients.

3 Food enters the stomach, where it is broken down by gastric juices into a paste-like substance.



2 The lump of food travels down a stretchy tube called the esophagus.

Knowledge 9

NAME: _____

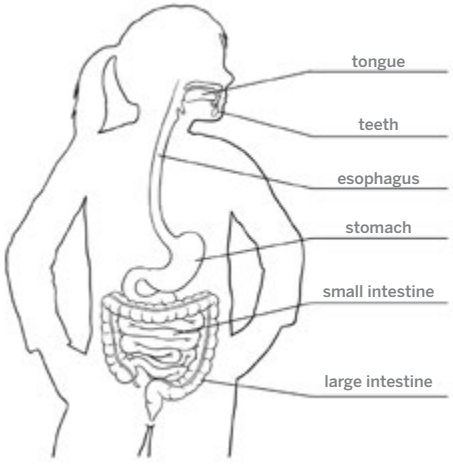
DATE: _____

6.1 **Activity Page**

Digestive System Matchup

stomach	**large intestine**	**esophagus**
tongue	**small intestine**	**teeth**

Directions: Label the parts of the digestive system using the terms provided in the word bank.



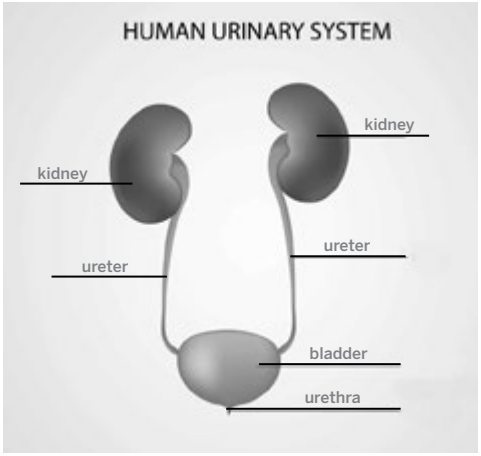
Knowledge 9

NAME: _____

DATE: _____

6.2 **Activity Page**

Excretory System Matchup



Directions: Use the words at the bottom of the page to label each part correctly. The words kidney and ureter are each used twice.

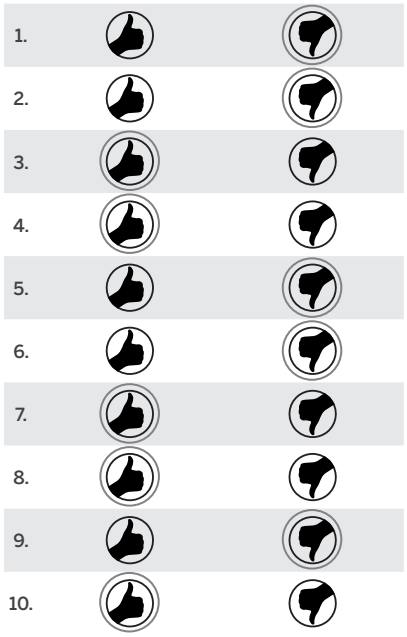
ureter	**bladder**
kidney	**urethra**

Knowledge 9

NAME: _____

DATE: _____

DA.1 **Assessment**



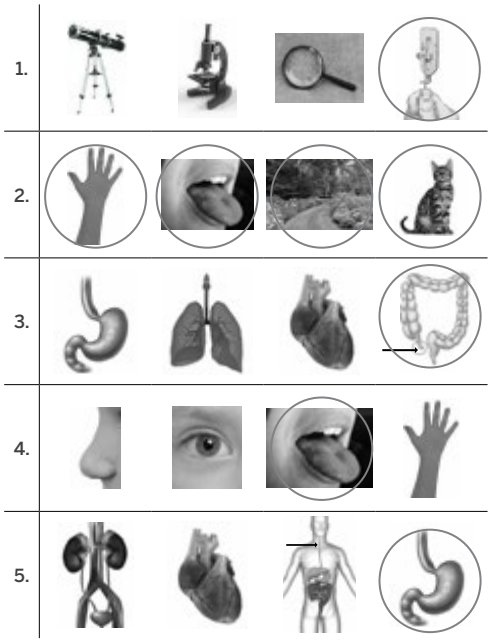
Directions: Listen to your teacher's instructions.

Knowledge 9

NAME: _____

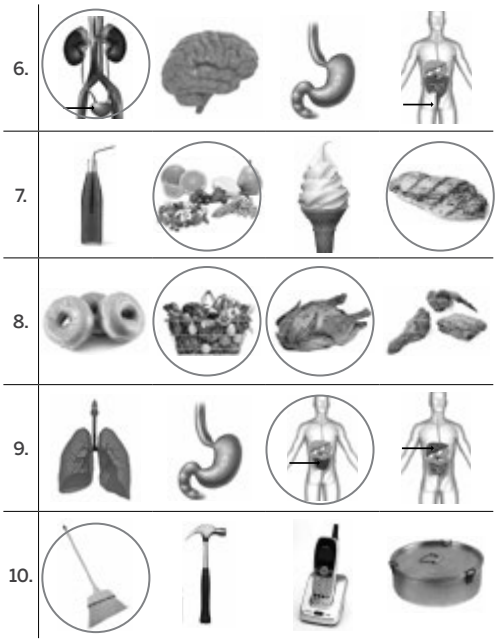
DATE: _____

DA.2 **Assessment**



Directions: Listen to your teacher's instructions.

Knowledge 9



NAME: _____

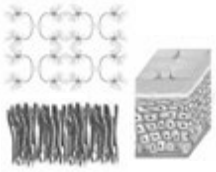
DATE: _____

DA.3 **Assessment**

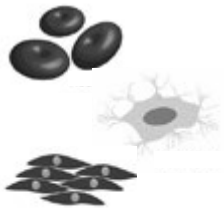
Directions: Choose the correct term from the word bank that describes what the images are, and write the term in the blank provided for each set of images.

cells	**tissues**
organs	**systems**

1. These are ___systems___.



2. These are ___tissues___.



3. These are ___cells___.

4. These are ___organs___.

Knowledge 9

NAME: _____

DATE: _____

DA.4 **Assessment**

Directions: Listen to your teacher's instructions.

1. Explain what the digestive system does, and what some of the organs in the digestive system do.

Answers may vary, but should include accurate information from the text.

2. Explain what the excretory system does, and what some of the organs in the excretory system do.

Answers may vary, but should include accurate information from the text.

Knowledge 9

3. What should you eat to keep a well-balanced diet?

Answers may vary, but should include accurate information from the text.

4. What are some things you can do to stay healthy?

Answers may vary, but should include accurate information from the text.

TEXAS ESSENTIAL KNOWLEDGE AND SKILLS - GRADE 2

Knowledge 9		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 2.1.A	listen actively, ask relevant questions to clarify information, and answer questions using multi-word responses	D9: p. 34, D9: p. 37, D9: p. 47, D9: p. 50, D9: p. 90, D9: p. 93, D9: p. 106, D9: p. 109
TEKS 2.1.B	follow, restate, and give oral instructions that involve a short, related sequence of actions	
TEKS 2.1.C	share information and ideas that focus on the topic under discussion, speaking clearly at an appropriate pace and using the conventions of language.	D9: p. 5, D9: p. 8
TEKS 2.1.D	work collaboratively with others by following agreed-upon rules for discussion, including listening to others, speaking when recognized, making appropriate contributions, and building on the ideas of others;	D9: p. 5, D9: p. 9, D9: p. 16, D9: p. 20, D9: p. 23, D9: p. 64, D9: p. 67, D9: p. 68, D9: p. 73, D9: p. 78, D9: p. 81, D9: p. 106, D9: p. 118, D9: p. 120, D9: p. 123
TEKS 2.1.E	develop social communication such as distinguishing between asking and telling	
(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 phonological awareness by:		
TEKS 2.2.A.i	producing a series of rhyming words;	
TEKS 2.2.A.ii	distinguishing between long and short vowel sounds in one-syllable and multi-syllable words	
TEKS 2.2.A.iii	recognizing the change in spoken word when a specified phoneme is added, changed, or removed; and	
TEKS 2.2.A.iv	manipulating phonemes within base words	
(B) demonstrate and apply phonetic knowledge by:		
TEKS 2.2.B.i	decoding words with short, long, or varient vowels, trigraphs and blends	
TEKS 2.2.B.ii	decoding words with silent letters such as knife and gnat;	
TEKS 2.2.B.iii	decoding multisyllabic words with closed syllables; open syllables; VCe syllables; vowel teams, including digraphs and diphthongs; r-controlled syllables; and final stable syllables;	
TEKS 2.2.B.iv	decoding compound words, contractions, and common abbreviations	
TEKS 2.2.B.v	decoding words using knowledge of syllable division patterns such as VCCV, VCV, and VCCCV;	
TEKS 2.2.B.vi	decoding words with prefixes including *un-, re-*, and *dis-*, and inflectional endings, including *-s, -es, -ed, -ing, -er*, and *-est*	
TEKS 2.2.B.vii	identifying and reading high-frequency words from a research-based list	
(C) demonstrate and apply spelling knowledge by:		
TEKS 2.2.C.i	spelling one-syllable and 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 2

Knowledge 9		Correlation—Teacher's Guide
TEKS 2.2.C.ii	spelling words with silent letters such as *knife* and *gnat*;	
TEKS 2.2.C.iii	spelling compound words, contractions, and common abbreviations;	
TEKS 2.2.C.iv	spelling multisyllabic words with multiple sound-spelling patterns;	
TEKS 2.2.C.v	spelling words using knowledge of syllable division patterns, including words with double consonants in the middle of the word; and	
TEKS 2.2.C.vi	spelling words with prefixes, including *un-, re-*, and *dis-*, and inflectional endings, including *-s, -es, -ed, -ing, -er,* and *-est*	
TEKS 2.2.D	alphabetize a series of words and use a dictionary or glossary to find words;	
TEKS 2.2.E	develop handwriting by accurately forming all cursive letters using appropriate strokes when connecting letters	
(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 2.3.A	use print or digital resources to determine meaning and pronunciation of unknown words;	
TEKS 2.3.B	use context within and beyond a sentence to determine the meaning of unfamiliar words	D9: p. 5, D9: p. 9, D9: p. 20, D9: p. 24, D9: p. 34, D9: p. 38, D9: p. 47, D9: p. 51, D9: p. 64, D9: p. 68, D9: p. 78, D9: p. 82, D9: p. 90, D9: p. 95, D9: p. 106, D9: p. 110, D9: p. 120, D9: p. 124
TEKS 2.3.C	identify the meaning of and use words with affixes *un-, re-, -ly, -er,* and *-est* (comparative and superlative), and -ion/tion/sion	
TEKS 2.3.D	identify, use, and explain the meaning of antonyms, synonyms, idioms, and homographs in context.	
(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 2.4	use appropriate fluency (rate, accuracy, and prosody) when reading grade-level text	
(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 2.5	self-select text and read independently for a sustained period of time.	
(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 2.6.A	establish purpose for reading assigned and self-selected texts;	
TEKS 2.6.B	generate questions about text before, during, and after reading to deepen understanding and gain information	D9: p. 64, D9: p. 68, D9: p. 120, D9: p. 124

TEXAS ESSENTIAL KNOWLEDGE AND SKILLS - GRADE 2

Knowledge 9		Correlation—Teacher's Guide
TEKS 2.6.C	make and correct or confirm predictions using text features, characteristics of genre, and structures	D9: p. 47, D9: p. 51
TEKS 2.6.D	create mental images to deepen understanding	D9: p. 34, D9: p. 45, D9: p. 46
TEKS 2.6.E	make connections to personal experiences, ideas in other texts, and society	D9: p. 5, D9: p. 8, D9: p. 20, D9: p. 24
TEKS 2.6.F	make inferences and use evidence to support understanding	D9: p. 20, D9: p. 24, D9: p. 30, D9: p. 78, D9: p. 82
TEKS 2.6.G	evaluate details read to determine key ideas	D9: p. 5, D9: p. 9, D9: p. 20, D9: p. 24, D9: p. 34, D9: p. 38, D9: p. 47, D9: p. 51, D9: p. 90, D9: p. 95, D9: p. 106, D9: p. 110
TEKS 2.6.H	synthesize information to create new understanding	D9: p. 47, D9: p. 59
TEKS 2.6.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 2.7.A	describe personal connections to a variety of sources	
TEKS 2.7.B	write brief comments on literary or informational texts that demonstrate an understanding of the text	D9: p. 5, D9: p. 17, D9: p. 20, D9: p. 32, D9: p. 78, D9: p. 88, D9: p. 120, D9: p. 132
TEKS 2.7.C	use text evidence to support an appropriate response	D9: p. 106, D9: p. 110, D9: p. 118
TEKS 2.7.D	retell and paraphrase texts in ways that maintain meaning and logical order	
TEKS 2.7.E	interact with sources in meaningful ways such as illustrating or writing	D9: p. 34, D9: p. 45, D9: p. 64, D9: p. 75, D9: p. 90, D9: p. 103, D9: p. 120, D9: p. 132
TEKS 2.7.F	respond using newly acquired vocabulary as appropriate	
(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 2.8.A	discuss topics and determine theme using text evidence with adult assistance	
TEKS 2.8.B	describe the main character's (characters') internal and external traits	
TEKS 2.8.C	describe and understand plot elements, including the main events, the conflict, and the resolution, for texts read aloud and independently	
TEKS 2.8.D	describe the importance of the setting	
(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 2.9.A	demonstrate knowledge of distinguishing characteristics of well-known children's literature such as folktales, fables, and fairy tales	

TEXAS ESSENTIAL KNOWLEDGE AND SKILLS - GRADE 2

Knowledge 9		Correlation—Teacher's Guide
TEKS 2.9.B	explain visual patterns and structures in a variety of poems	
TEKS 2.9.C	discuss elements of drama such as characters, dialogue, and setting	
(D) recognize characteristics and structures of informational text, including:		
TEKS 2.9.D.i	the central idea and supporting evidence with adult assistance	D9: p. 120, D9: p. 124
TEKS 2.9.D.ii	features and graphics to locate and gain information	
TEKS 2.9.D.iii	organizational patterns such as chronological order and cause and effect stated explicitly	
(E) recognize characteristics of persuasive text, including:		
TEKS 2.9.E.i	the central idea and supporting evidence with adult assistance	
TEKS 2.9.E.ii	distinguishing facts from opinion	
TEKS 2.9.F	recognize characteristics of multimodal and digital texts	
(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 2.10.A	discuss the author's purpose for writing text	
TEKS 2.10.B	discuss how the use of text structure contributes to the author's purpose	
TEKS 2.10.C	discuss the author's use of print and graphic features to achieve specific purposes	
TEKS 2.10.D	discuss the use of descriptive, literal, and figurative language	
TEKS 2.10.E	identify the use of first or third person in a text	
TEKS 2.10.F	identify and explain the use of repetition	
(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 2.11.A	plan a first draft by generating ideas for writing such as drawing and brainstorming	
(B) develop drafts into a focused, structured, and coherent piece of writing by:		
TEKS 2.11.B.i	organizing with structure; and	
TEKS 2.11.B.ii	developing an idea with specific and relevant details	
TEKS 2.11.C	revise drafts by adding, deleting, or rearranging words, phrases or sentences	
(D) edit drafts using standard English conventions, including:		
TEKS 2.11.D	edit drafts using standard English conventions	
TEKS 2.11.D.i	complete sentences with subject-verb agreement.	
TEKS 2.11.D.ii	past, present, and future verb tense	
TEKS 2.11.D.iii	singular, plural, common, and proper nouns	
TEKS 2.11.D.iv	adjectives, including articles	

TEXAS ESSENTIAL KNOWLEDGE AND SKILLS - GRADE 2

Knowledge 9		Correlation—Teacher's Guide
TEKS 2.11.D.v	adverbs that convey time and adverbs that convey place;	D9: p. 90, D9: p. 103
TEKS 2.11.D.vi	prepositions and prepositional phrases	
TEKS 2.11.D.vii	pronouns, including subjective, objective, and possessive cases	
TEKS 2.11.D.viii	coordinating conjunctions to form compound subjects and predicates	
TEKS 2.11.D.ix	capitalization of months, days of the week, and the salutation and conclusion of a letter;	
TEKS 2.11.D.x	end punctuation, apostrophes in contractions, and commas with items in a series and in dates;	
TEKS 2.11.D.xi	correct spelling of words with gradeappropriate orthographic patterns and rules and high-frequency words;	
TEKS 2.11.E	publish and share writing	
(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 2.12.A	compose literary texts, including personal narratives and poetry	
TEKS 2.12.B	compose informational texts, including procedural texts and reports; and	D9: p. 120, D9: p. 132
TEKS 2.12.C	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 2.13.A	generate questions for formal and informal inquiry with adult assistance	
TEKS 2.13.B	develop and follow a research plan with adult assistance	
TEKS 2.13.C	identify and gather relevant sources and information to answer the questions	
TEKS 2.13.D	identify primary and secondary sources	
TEKS 2.13.E	demonstrate understanding of information gathered	
TEKS 2.13.F	cite sources appropriately	
TEKS 2.13.G	use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.	

ENGLISH LANGUAGE PROFICIENCY STANDARDS - GRADE 2

Knowledge 9		Correlation—Teacher's Guide
(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:		
ELPS 1.A	use prior knowledge and experiences to understand meanings in English	
ELPS 1.B	monitor oral and written language production and employ self-corrective techniques or other resources	
ELPS 1.C	use strategic learning techniques such as concept mapping, drawing, memorizing, comparing, contrasting, and reviewing to acquire basic and grade-level vocabulary	
ELPS 1.D	speak using learning strategies such as requesting assistance, employing nonverbal cues, and using synonyms and circumlocution (conveying ideas by defining or describing when exact English words are not known)	
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	D9: p. 59, D9: p. 67
ELPS 1.F	use accessible language and learn new and essential language in the process	
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	D9: p. 118
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	
(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:		
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	
ELPS 2.D	monitor understanding of spoken language during classroom instruction and interactions and seek clarification as needed	

ENGLISH LANGUAGE PROFICIENCY STANDARDS - GRADE 2

Knowledge 9		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	
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 point, and important details of spoken language ranging from situations in which topics, language, and contexts are familiar to unfamiliar	D9: p. 23, D9: p. 57, D9: p. 73, D9: p. 130
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 note	D9: p. 23
(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:		
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 highfrequency 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	
ELPS 3.D	speak using grade-level content area vocabulary in context to internalize new English words and build academic language proficiency	D9: p. 59, D9: p. 67
ELPS 3.E	share information in cooperative learning interactions	
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 contentbased vocabulary during extended speaking assignments	D9: p. 57, D9: p. 73, D9: p. 118, D9: p. 130

ENGLISH LANGUAGE PROFICIENCY STANDARDS - GRADE 2

Knowledge 9		Correlation—Teacher's Guide
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 gradeappropriate academic topics	D9: p. 16, D9: p. 30, D9: p. 86, D9: p. 101, D9: p. 116
ELPS 3.H	narrate, describe, and explain with increasing specificity and detail as more English is acquired	
ELPS 3.I	adapt spoken language appropriately for formal and informal purposes	D9: p. 118
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	
(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:		
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	
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	
ELPS 4.D	use prereading supports such as graphic organizers, illustrations, and pretaught topicrelated vocabulary and other prereading activities to enhance comprehension of written text	
ELPS 4.E	read linguistically accommodated content area material with a decreasing need for linguistic accommodations as more English is learned	
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	
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	
ELPS 4.H	read silently with increasing ease and comprehension for longer periods	

ENGLISH LANGUAGE PROFICIENCY STANDARDS - GRADE 2

Knowledge 9		Correlation—Teacher's Guide
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	
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	D9: p. 16, D9: p. 30, D9: p. 86, D9: p. 101, D9: p. 116
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	
(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:		
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	
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	
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	
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	D9: p. 17, D9: p. 32, D9: p. 45, D9: p. 76, D9: p. 88, D9: p. 104, D9: p. 132
ELPS 5.G	narrate, describe, and explain with increasing specificity and detail to fulfill content area writing needs as more English is acquired	

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The Human Body: Building Blocks and Nutrition

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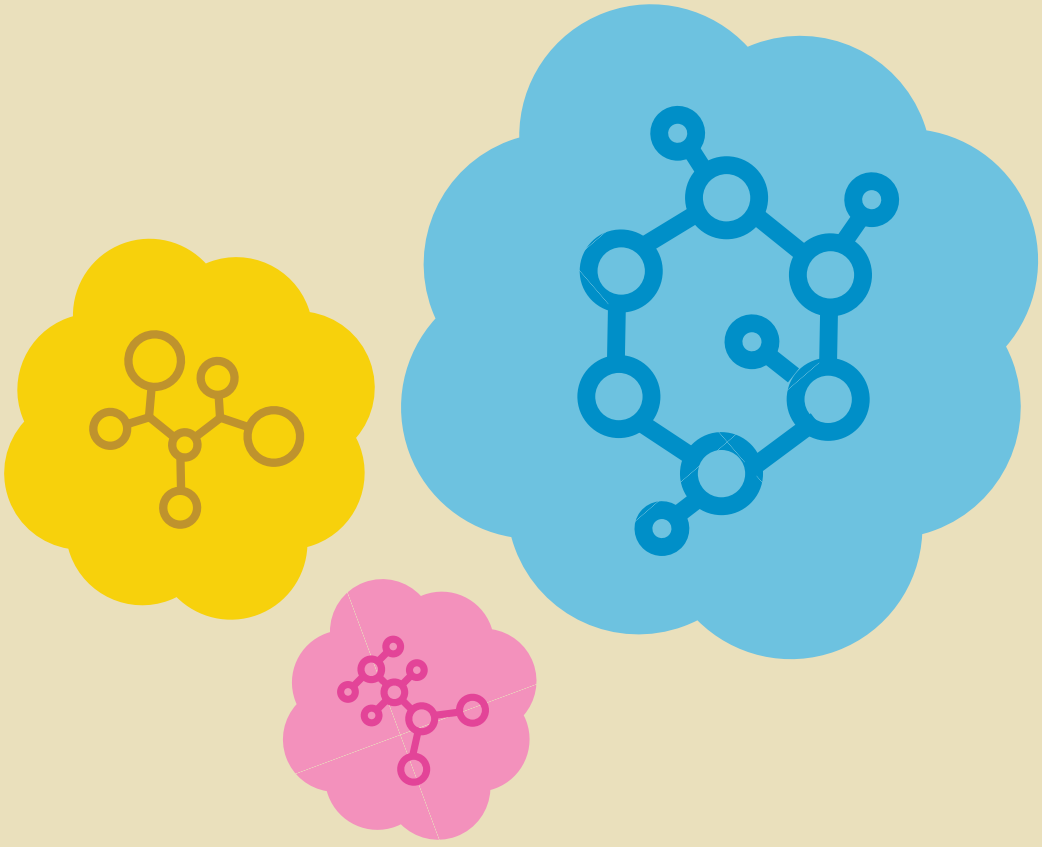

Grade 2

Knowledge 9 | Activity Book

The Human Body: Building Blocks and Nutrition

Grade 2 | Knowledge 9

The Human Body:
Building Blocks and Nutrition

Activity Book

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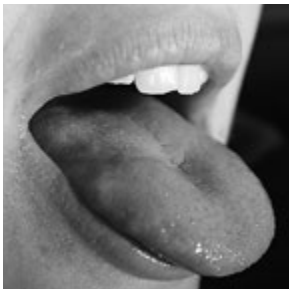


NAME: _____

DATE: _____

Dear Family Member,

Over the next few days, your student will be learning about the human body systems and their important parts—organs, tissues, and cells. They will learn about the discovery of human cells. Below are some suggestions for home activities to reinforce your student's own observations and discoveries.

1. Sense Organs

Reinforce your student's previous knowledge of the five senses by talking about the organs responsible for each one: eyes, nose, tongue, ears, and skin. Ask your student to tell you which organ is the largest body organ (skin).

2. Examining Objects Closely

If possible, provide your student with a magnifying glass. Encourage them to examine, draw, and label common objects in the environment.

3. Words to Use

Below is a list of some of the words that your student will be using at school. Try to use these words as they come up in everyday speech with your student.

- *nutrition*—Reading nutrition labels can help you select the right foods to eat.
- *magnify*—Microscopes magnify, or enlarge, microscopic organisms.
- *stomach*—When the digestive system is upset, your stomach may ache.
- *vaccinations*—Vaccinations prevent many children from getting once-common diseases.

4. Finding Everyday Lenses

Talk about the everyday use of lenses, and look for different kinds of lenses together: eyeglasses, contact lenses, telescopes, microscopes, binoculars, cell phone/cameras, digital cameras, and car headlights.

5. Read Aloud Each Day

It is very important that you read to your student each day. The local library has numerous books on the human body and nutrition that you may share with your student.

Be sure to let your student know how much you enjoy hearing about what they have learned at school.

NAME: _____

DATE: _____

Anton van Leeuwenhoek _____

NAME: _____

DATE: _____

Using a Magnifying Glass

Directions: Look at the fabric swatch you have been given without using the magnifying glass. Draw what you see under the heading "What I See With My Eyes Alone." Then, look at the fabric swatch using the magnifying glass, and draw what you see under the heading "What I See Through the Magnifying Glass."

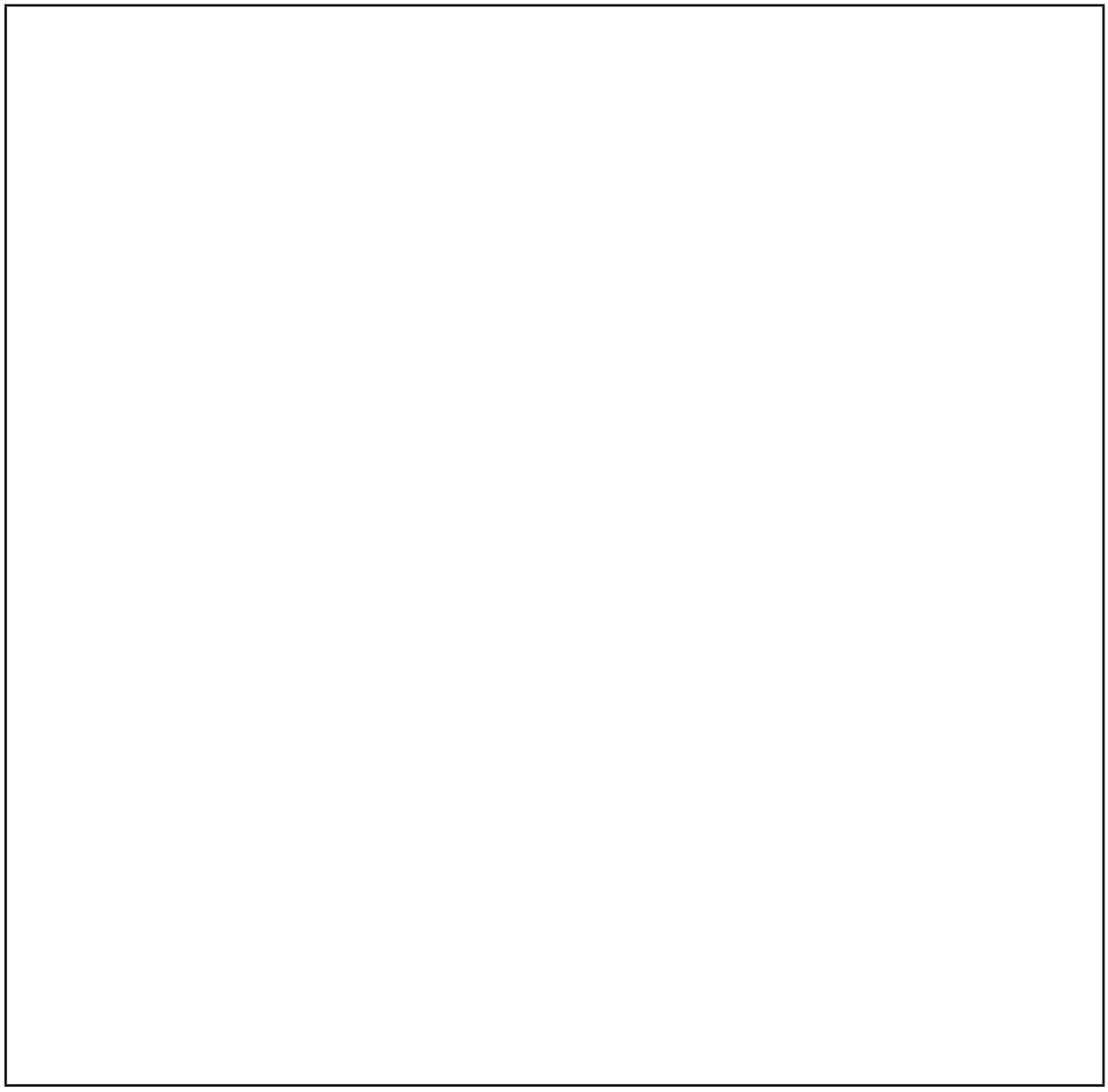
What I See With My Eyes Alone

What I See Through the Magnifying Glass

NAME: _____

DATE: _____

Cells and Tissue



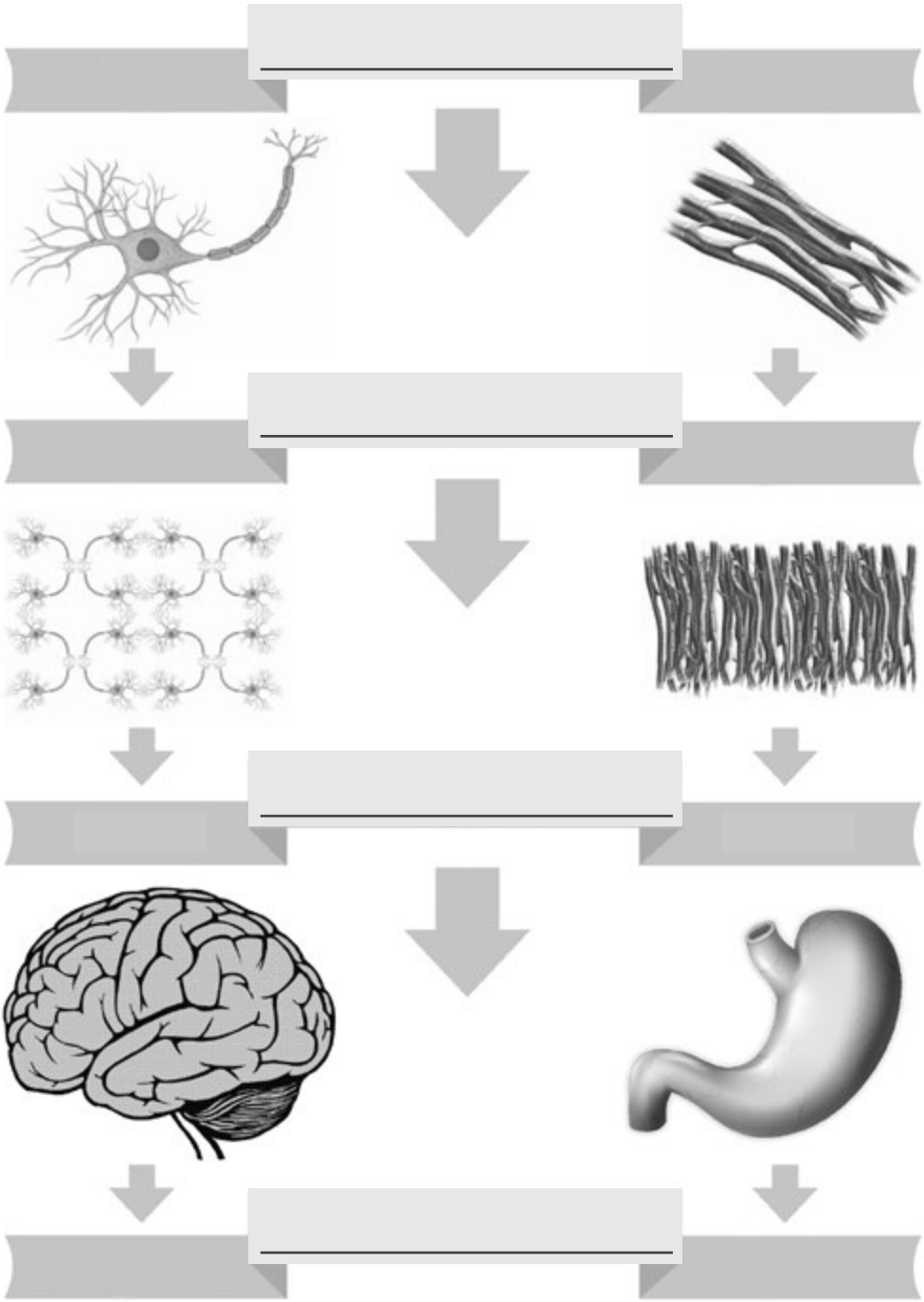
NAME: _____

DATE: _____

What's the Connection?

Directions: Choose the correct word from the word blank to write in each bank, starting with the smallest unit and building up to the largest.

systems	**cells**
tissues	**organs**



NAME: _____

DATE: _____

Directions: Read the statements below and put an X beside the statement that best describes Anton's contribution to the world.

Part I: Anton van Leeuwenhoek

_____ He invented the microscope.

_____ He wrote a book called *Micrographia*.

_____ He was the first person to describe bacteria.

_____ He made cloth from tiny animal hairs.

Part II:
Cells, Tissues, Organs, Systems

cells	**tissues**	**organs**	**systems**	
function	**connective**	**muscle**	**epithelial**	**nervous**

1. The smallest units of human life are called _____.

2. Tissues are made up of similar _____.

3. Organs are made up of _____.

4. Your heart is one of your most important _____.

5. The tissue that forms protective barriers is called _____ tissue.

6. Blood, bone, and fat are all _____ tissues.

Directions: Choose the word from the word bank that goes with the sentence, and write it in the blank. Not all words in the word bank are used; some are used more than once.

7. Body systems are made up of different _____.

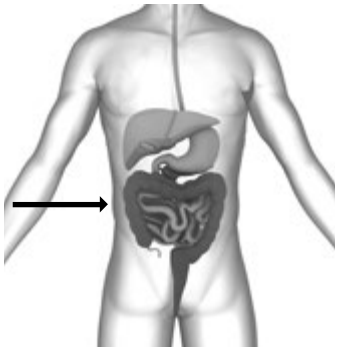
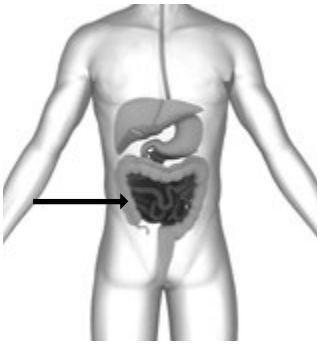
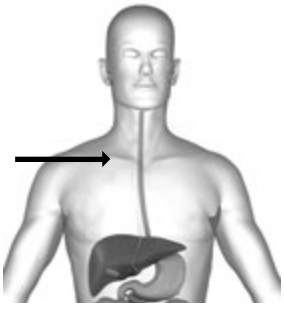
8. Every organ in the body has a special job, or _____.

9. The digestive and excretory _____ process your food and waste.

NAME: _____

DATE: _____

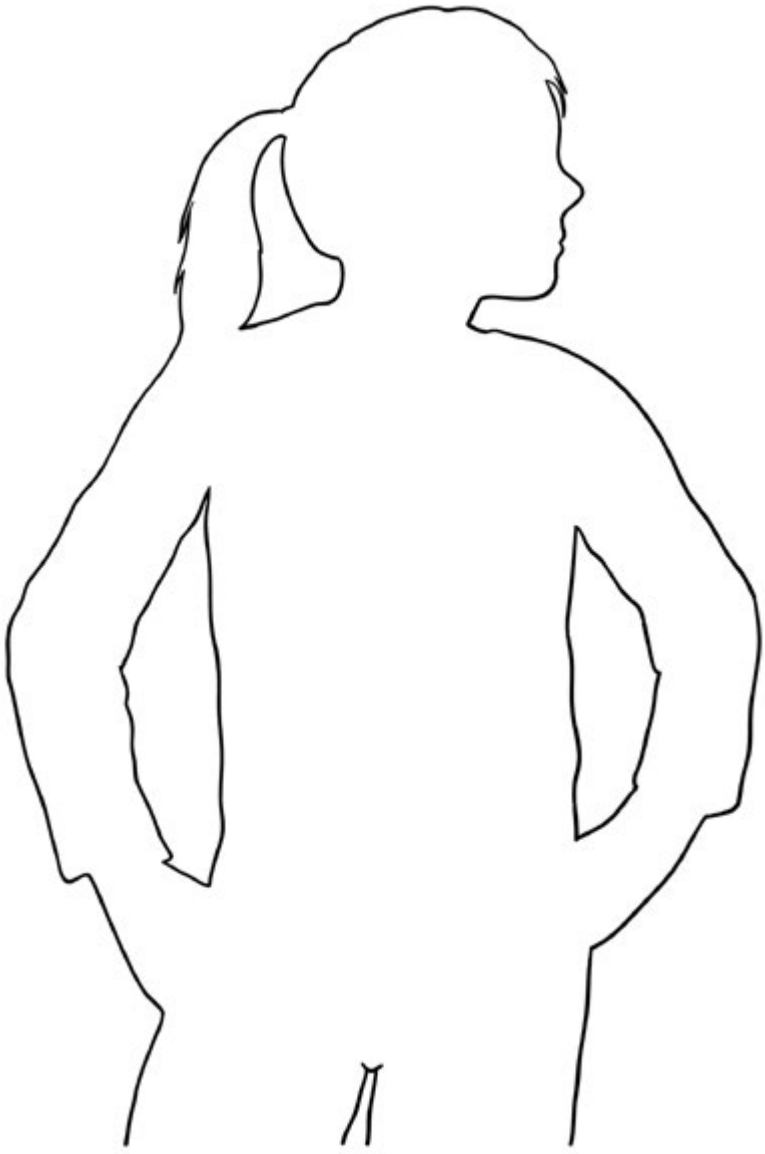
Directions: The following pictures show the different steps in the process of digestion. Number each one in the correct order from 1–6, following food from the mouth to the anus.

 ☐ Teeth crush the food, and saliva softens it into a mashed up lump of food.	 ☐ Feces, or waste, is stored in the rectum until it is ready to be passed out of the body through the anus.
 ☐ Food enters the large intestine, where water is absorbed from the waste and passed into the blood-stream.	 ☐ Food enters the small intestine, where millions of tiny villi absorb its nutrients.
 ☐ Food enters the stomach, where it is broken down by gastric juices into a paste-like substance.	 ☐ The lump of food travels down a stretchy tube called the esophagus.

NAME: _____

DATE: _____

The Digestive System



NAME: _____

DATE: _____

Dear Family Member,

Your student is learning about the digestive system and the excretory system, the two body systems that process our food and help us get rid of wastes. Over the next few days they will learn the importance of keeping bodies healthy by eating nutritional foods. Below are some suggestions for activities that you can do at home to reinforce your student's learning about these important systems and the foods that supply our bodies with the most nutrients.

1. How Long Are My Intestines?

The large and small intestines combined are about 25 feet long. Using a tape measure, help your student find objects or measure distances that are of a similar length. This will reinforce an incredible fact about this lengthy digestive organ!

2. A Fact-Finding Trip to the Grocery Store

Spend additional time in the produce section during a regular visit to the grocery store. Ask your student to find a fruit or vegetable that is unfamiliar to them. Identify the item, and, if it is not too expensive, buy one to try. Find out more about its origins and nutritional value by looking it up in a book or online. Another fun and informative grocery store activity for you and your student is to read package labels, making healthy meal selections based on good nutritional content—those foods that are low in sodium, sugars, and fats.

3. Words to Use

Your student has learned technical terms for discussing the body. Try to use these words as they come up in everyday speech with your student.

- *excrete*—One way our bodies excrete, or get rid of, waste is through our skin.
- *digest*—It is important to eat slowly in order to digest our food well.
- *perspire/perspiration*—I perspire, or sweat, on a hot day.
- *urine/urination*—Urine is made up largely of water.

4. Read Aloud Each Day

It is very important that you read to your student each day. The local library has numerous books on nutrition that you may share with your student.

Be sure to let your student know how much you enjoy hearing about what they have learned at school.

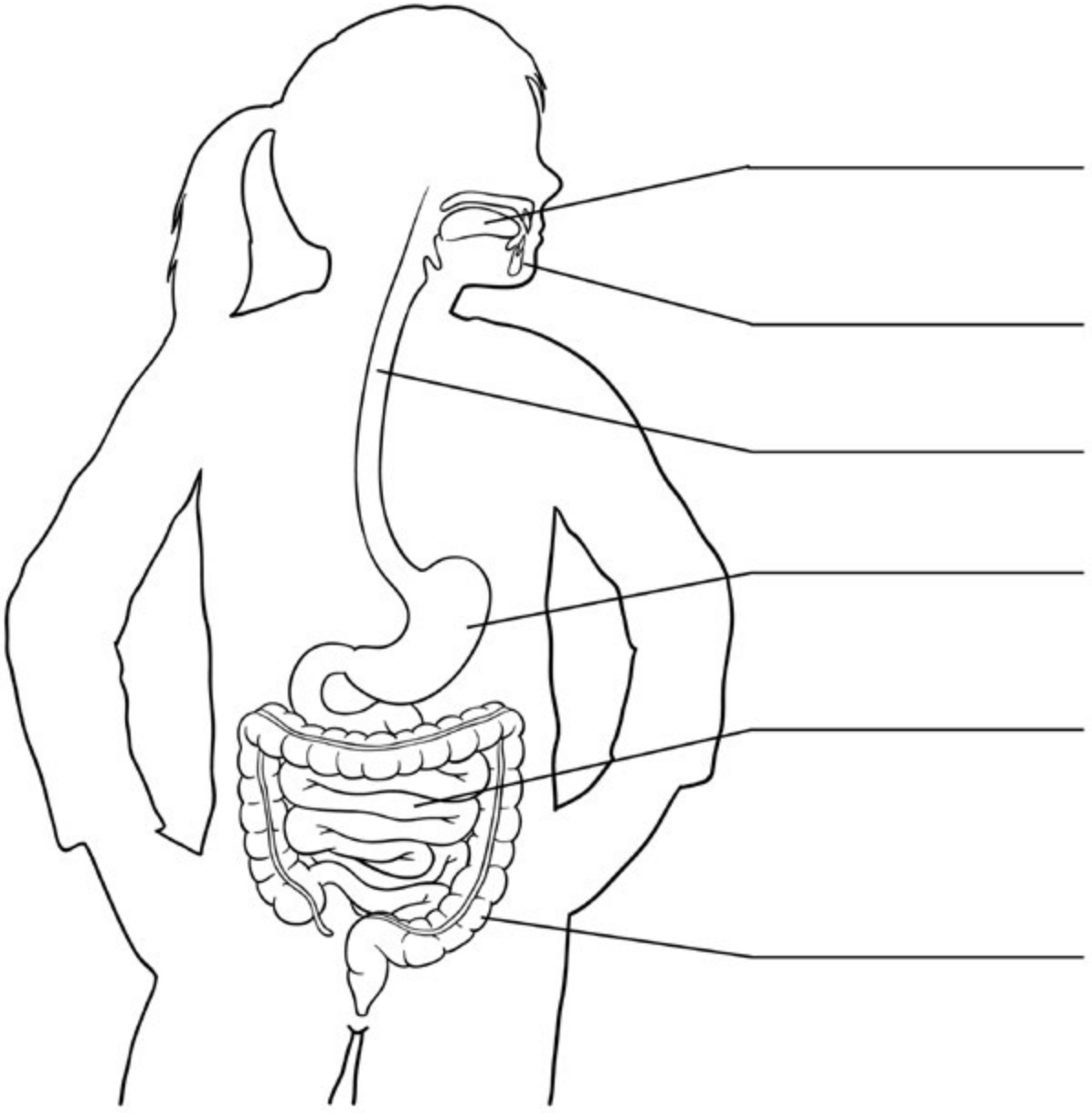
NAME: _____

DATE: _____

Digestive System Matchup

stomach	**large intestine**	**esophagus**
tongue	**small intestine**	**teeth**

Directions: Label the parts of the digestive system using the terms provided in the word bank.

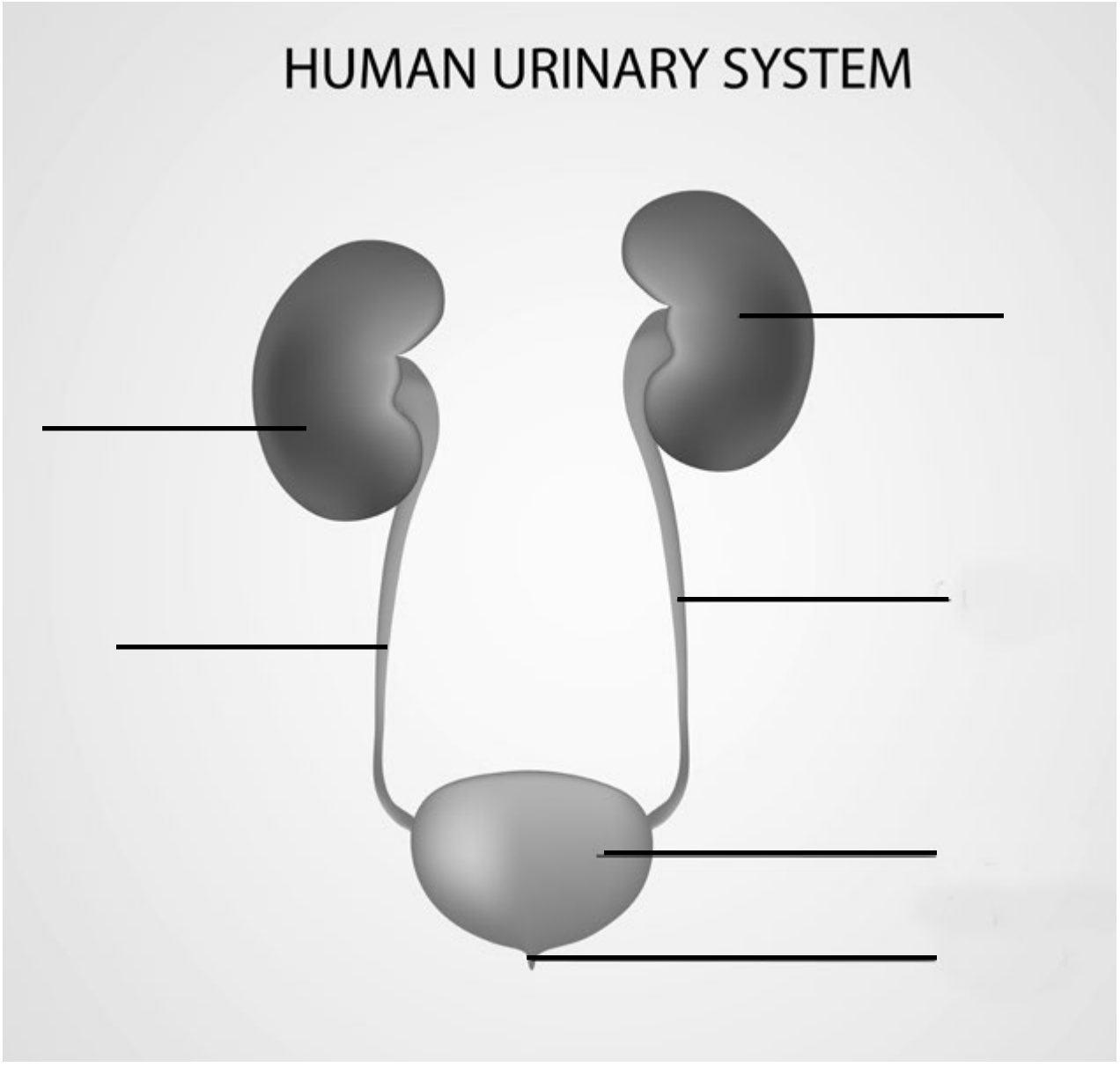


NAME: _____

DATE: _____

Directions: Use the words at the bottom of the page to label each part correctly. The words kidney and ureter are each used twice.

Excretory System Matchup

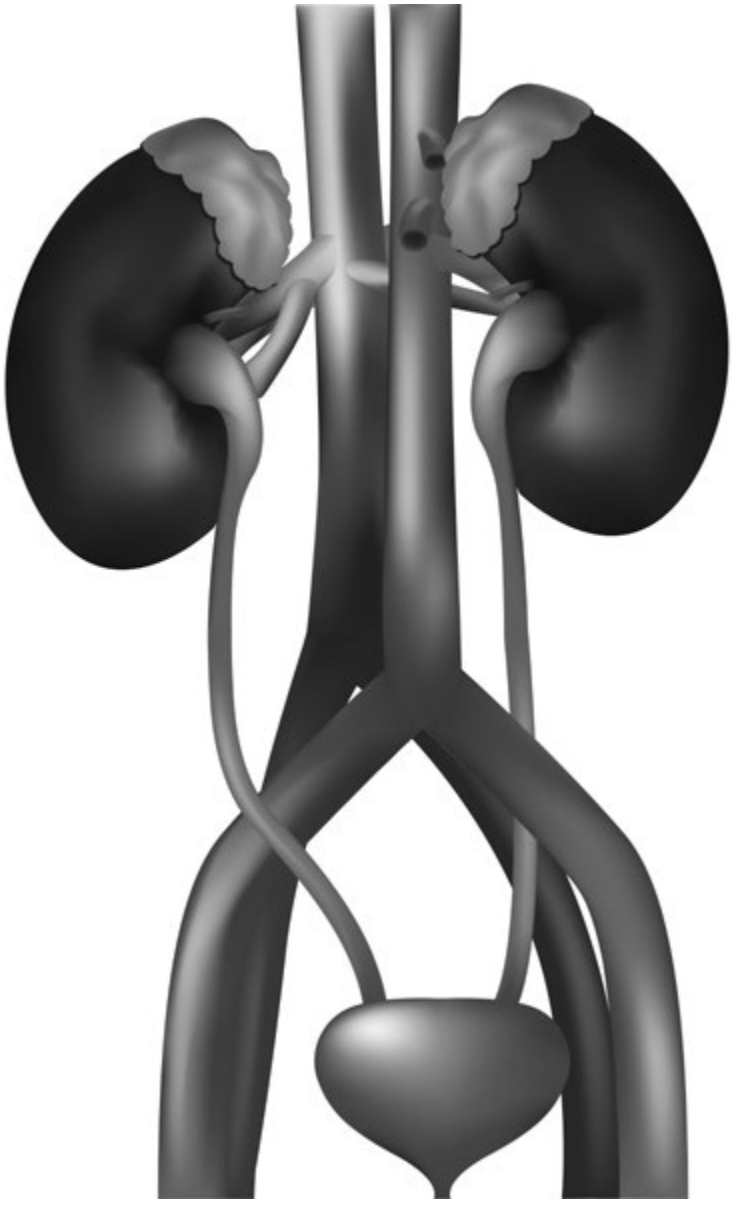


ureter	**bladder**
kidney	**urethra**

NAME: _____

DATE: _____

The Excretory System



NAME: _____

DATE: _____

water	**proteins**
carbohydrates	**fats**

_____

_____

_____

_____

NAME: _____

DATE: _____

Directions: Place a checkmark next to the picture of each healthy habit you practice. Then write a sentence next to each picture you checked describing what you do to practice that healthy habit.

☐ 

_____

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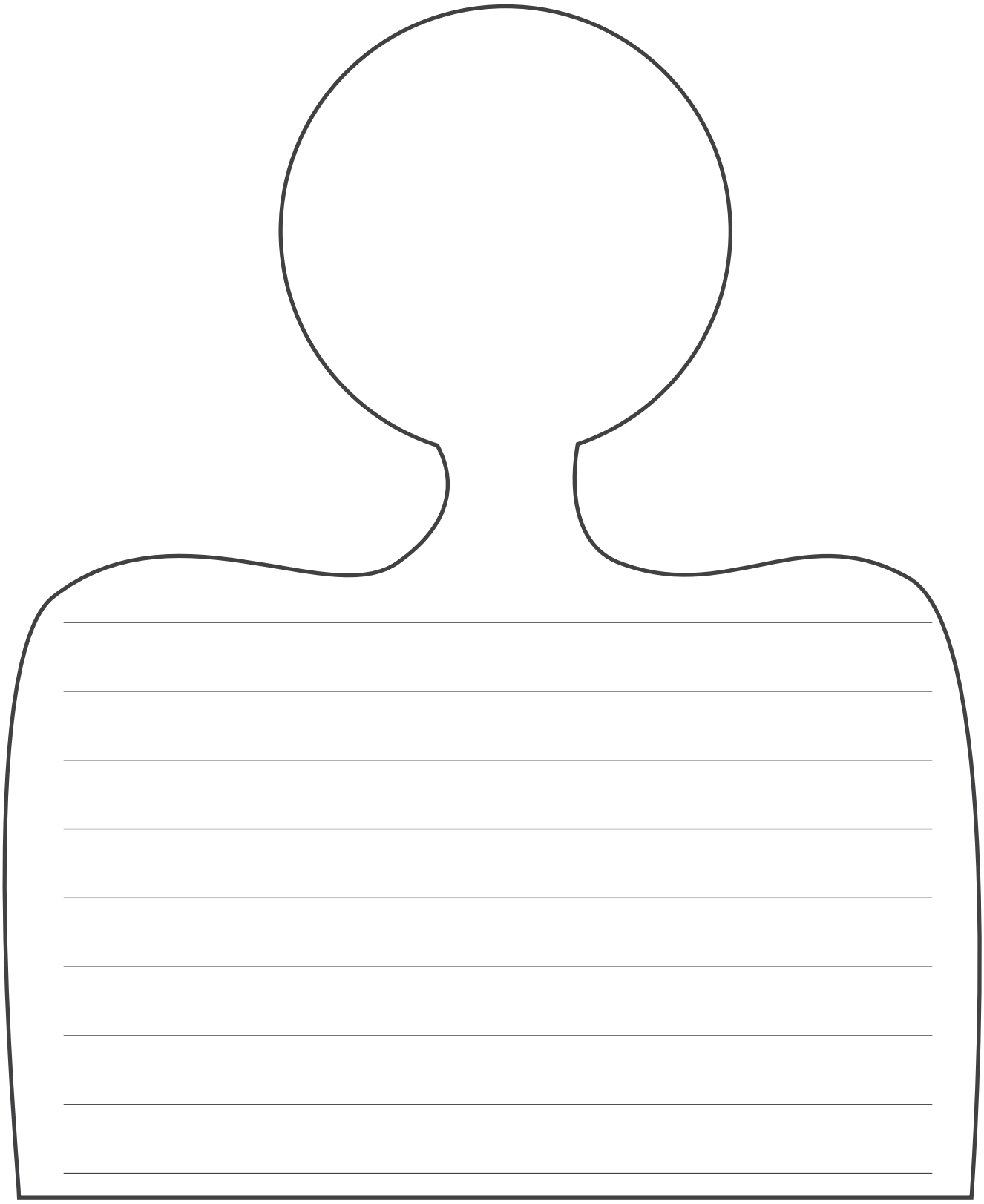
NAME: _____

DATE: _____

9.2 **Activity Page**



NAME: _____

DATE: _____

DA.1 **Assessment**

1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

Directions: Listen to your teacher's instructions.

Knowledge 9

11.		
12.		
13.		
14.		
15.		

NAME: _____

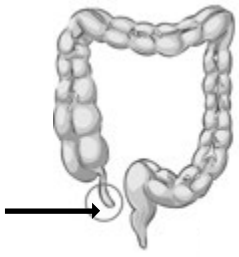
DATE: _____

DA.2 **Assessment**

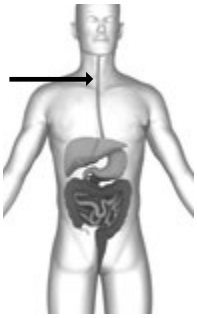
Directions: Listen to your teacher's instructions.

1.    

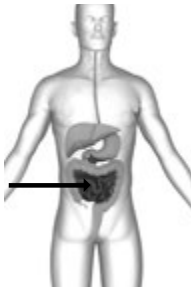
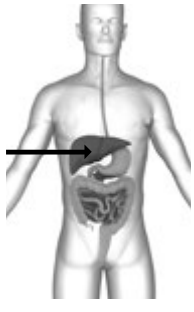
2.    

3.    

4.    

5.    

Knowledge 9

6.				
7.				
8.				
9.				
10.				

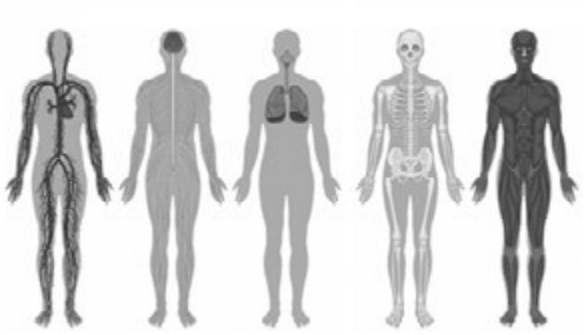
NAME: _____

DATE: _____

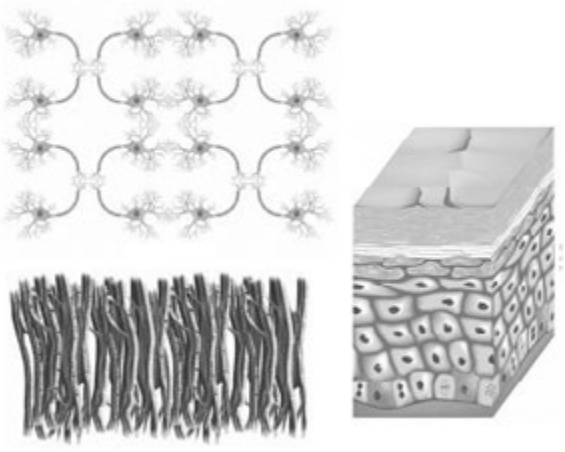
DA.3 Assessment

Directions: Choose the correct term from the word bank below that describes what the images are, and write the term in the blank provided for each set of images.

cells	**tissues**
organs	**systems**

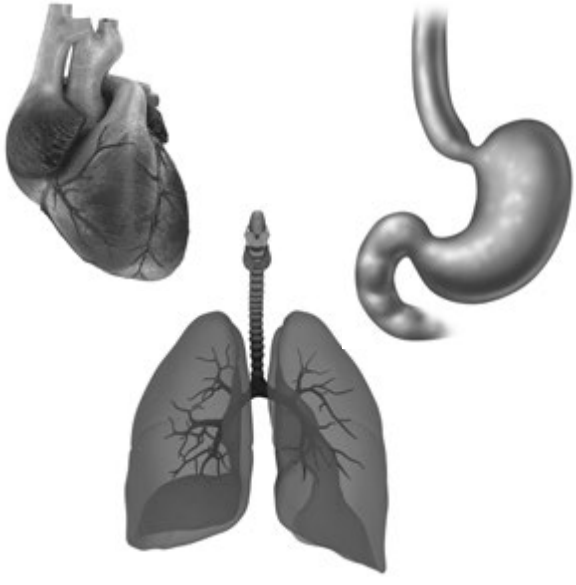


1. These are _____.



2. These are _____.

3. These are _____.



4. These are _____.

NAME: _____

DATE: _____

DA.4 **Assessment**

1. Explain what the digestive system does, and what some of the organs in the digestive system do.

2. Explain what the excretory system does, and what some of the organs in the excretory system do.

Directions: Listen to your teacher's instructions.

3. What should you eat to keep a well-balanced diet?

4. What are some things you can do to stay healthy?

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The Human Body: Building Blocks and Nutrition

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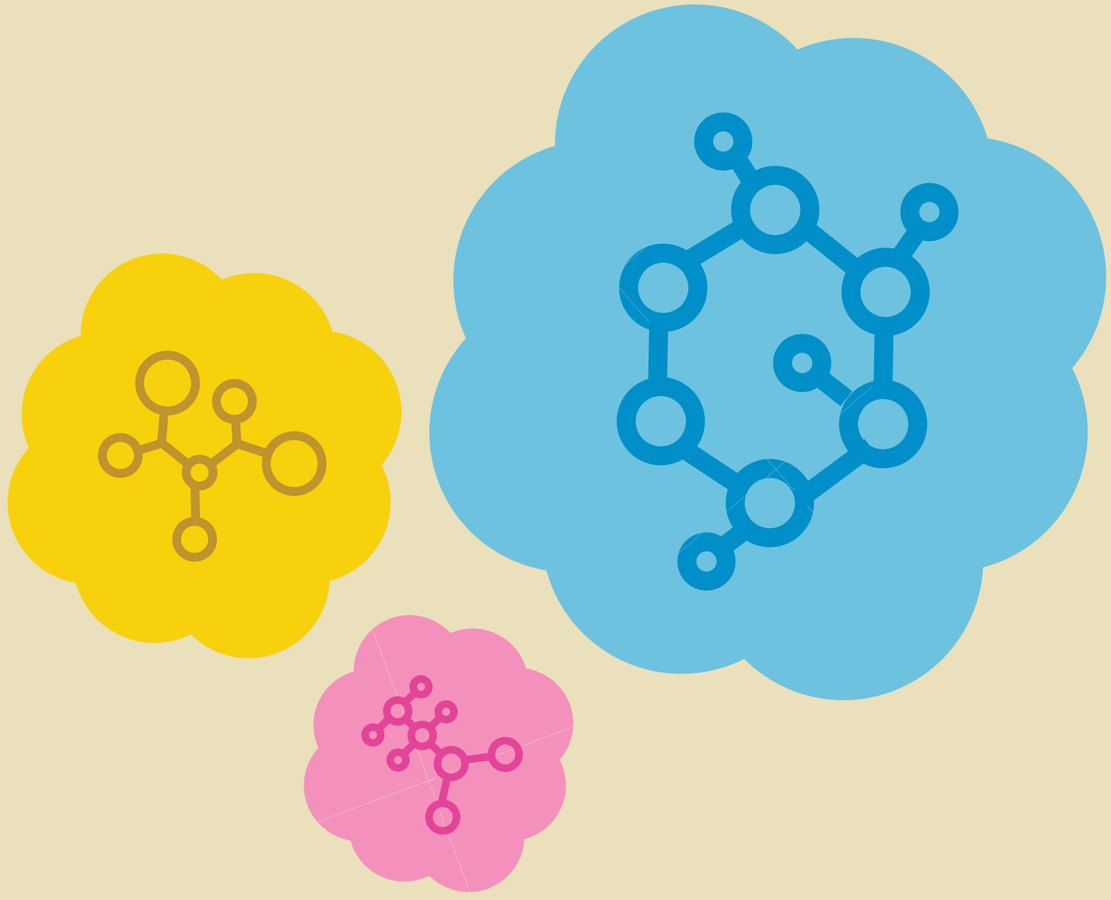

Grade 2

Knowledge 9 | Flip Book

The Human Body: Building Blocks and Nutrition

Grade 2 | Knowledge 9

The Human Body:
Building Blocks and Nutrition

Flip Book

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Catherine S. Whittington

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ELEMENTARY LITERACY PROGRAM
LECTOESCRITURA EN ESPAÑOL

Flip Book Introduction

This Flip Book contains images that accompany the Teacher Guide for *The Human Body: Building Blocks and Nutrition*. The images are in sequential order. Each image is identified by its lesson number, Read-Aloud letter (A or B), and the number of the image within the particular Read-Aloud. For example, the first image in Read-Aloud 1A is numbered 1A-1. Once you have worked your way through the book to the last page, you will flip the entire book over to view the second half of the images.

Depending on your classroom configuration, you may need to have students sit closer to the flip book in order to see the images clearly.

1A-1

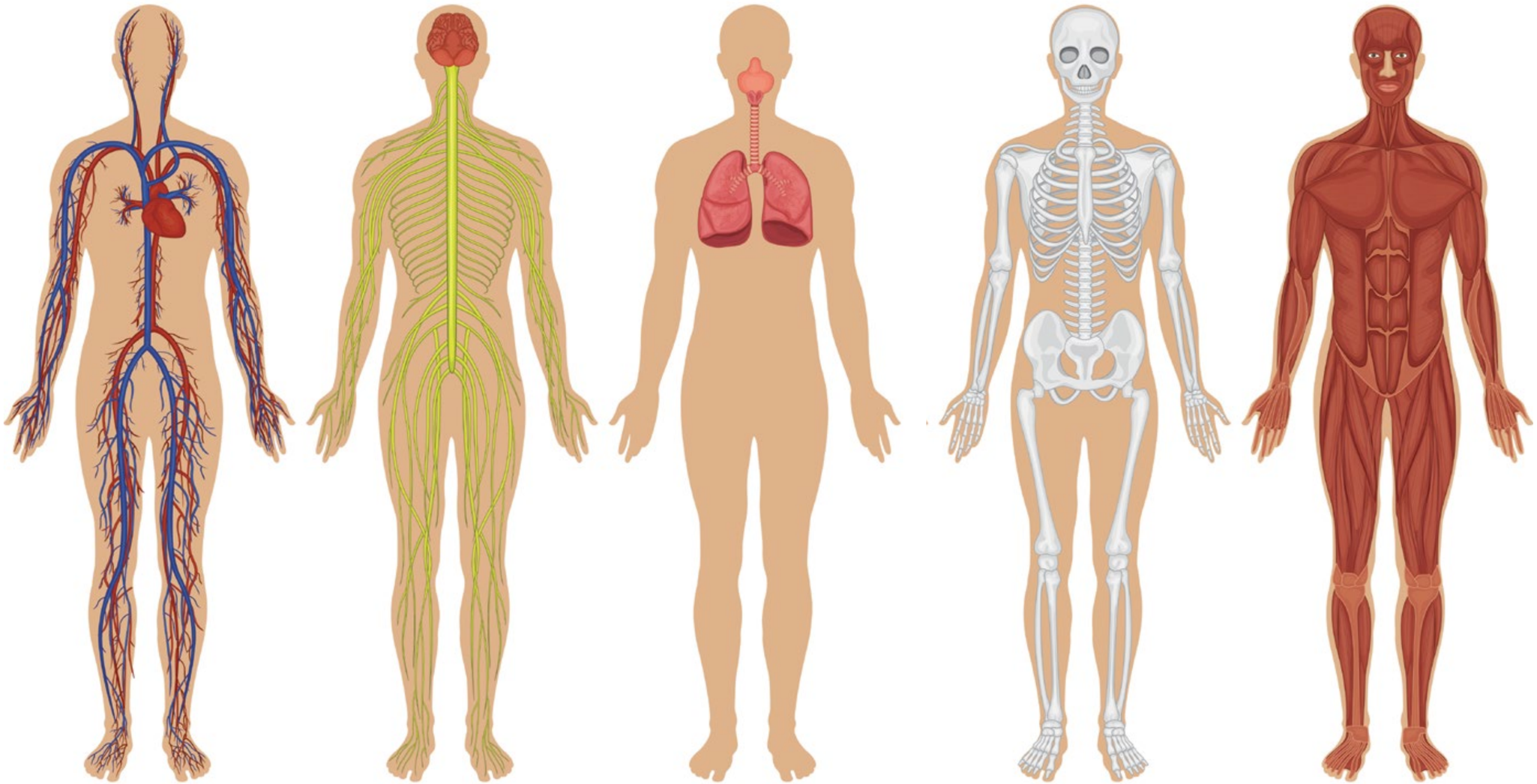
1A-2

1A-3

1A-4

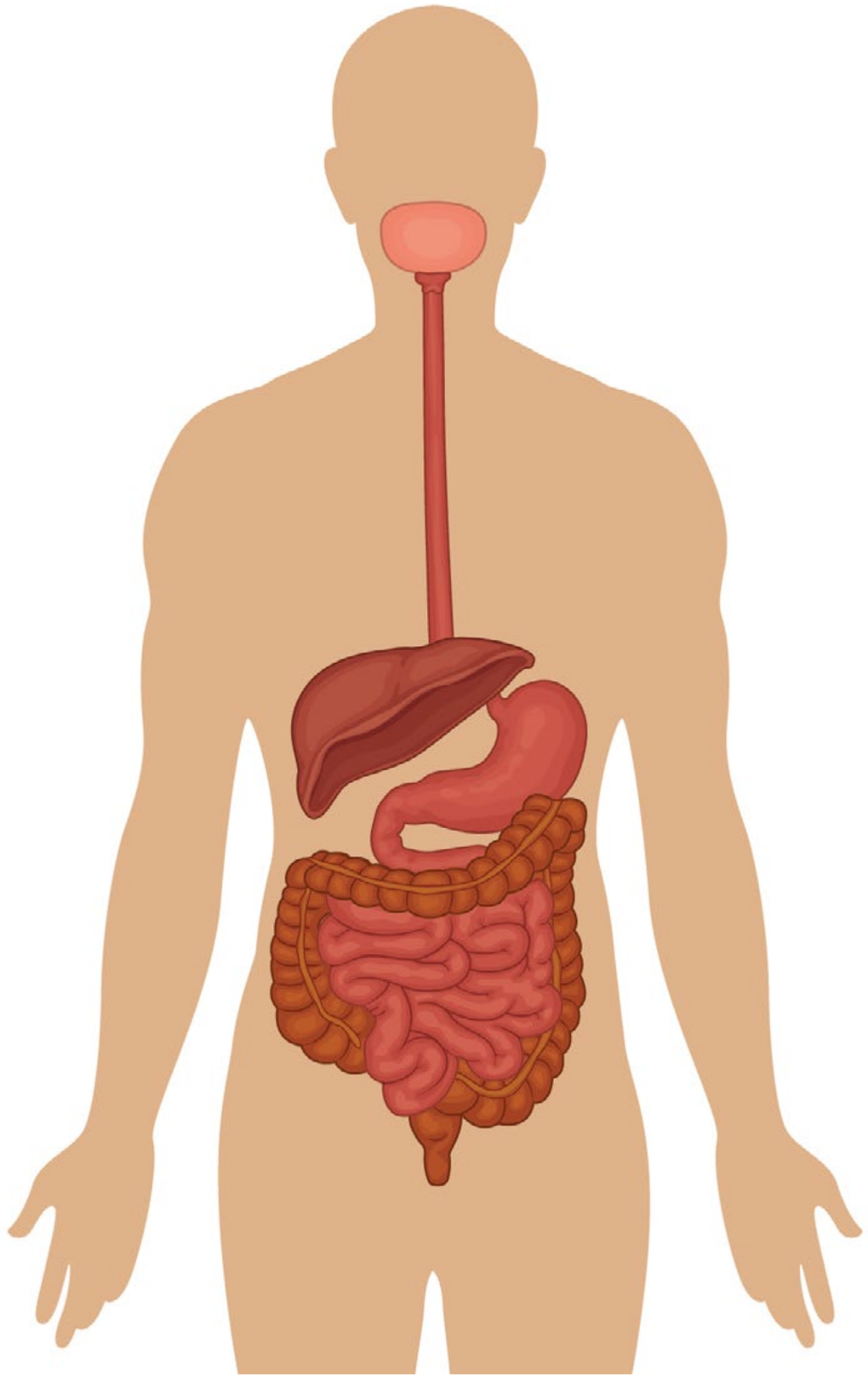
1A-5

Human Body Systems



Circulatory System | Nervous System | Respiratory System | Skeletal System | Muscular System

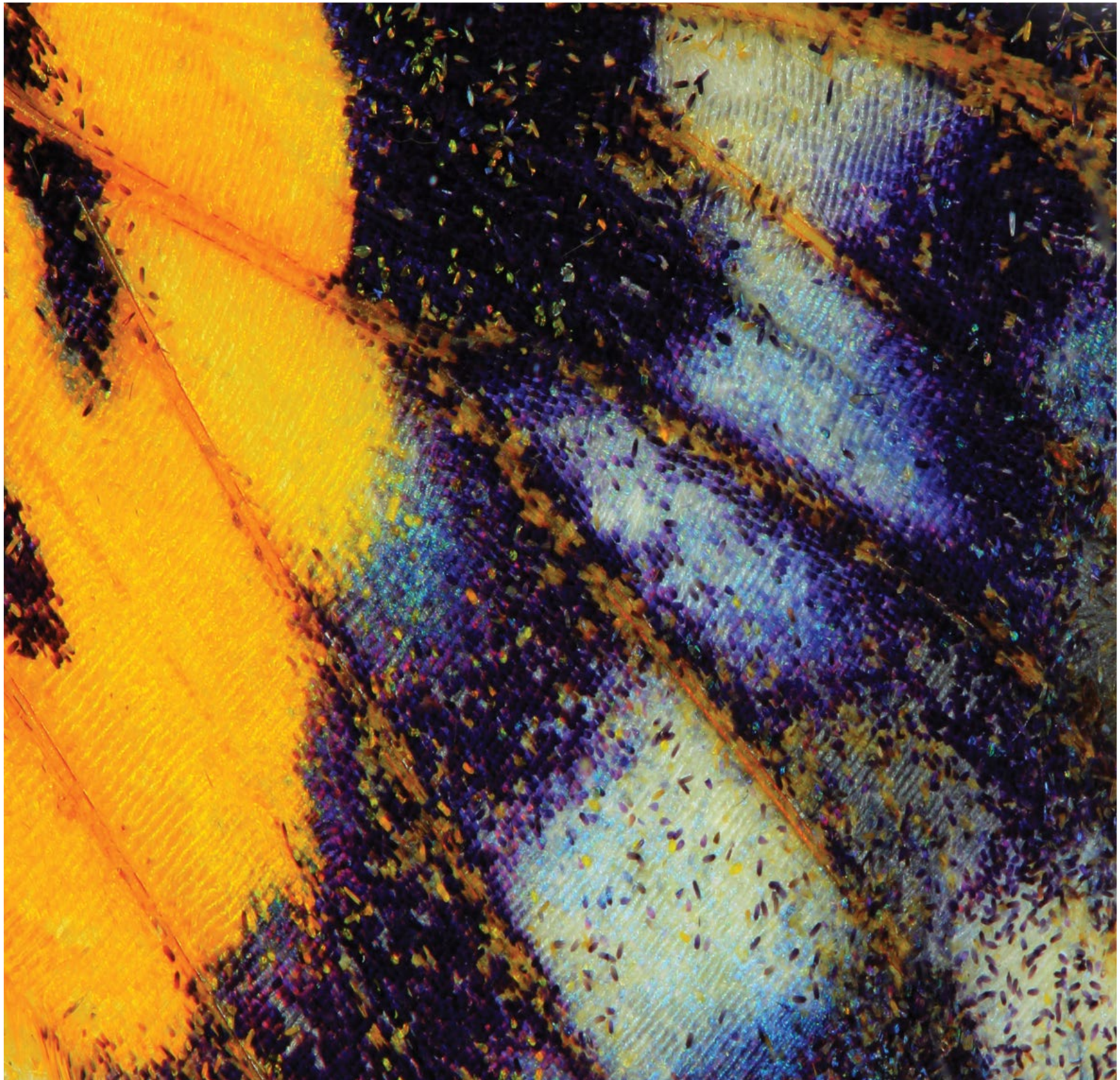
1A-7



1A-10

1A-12

2A-1



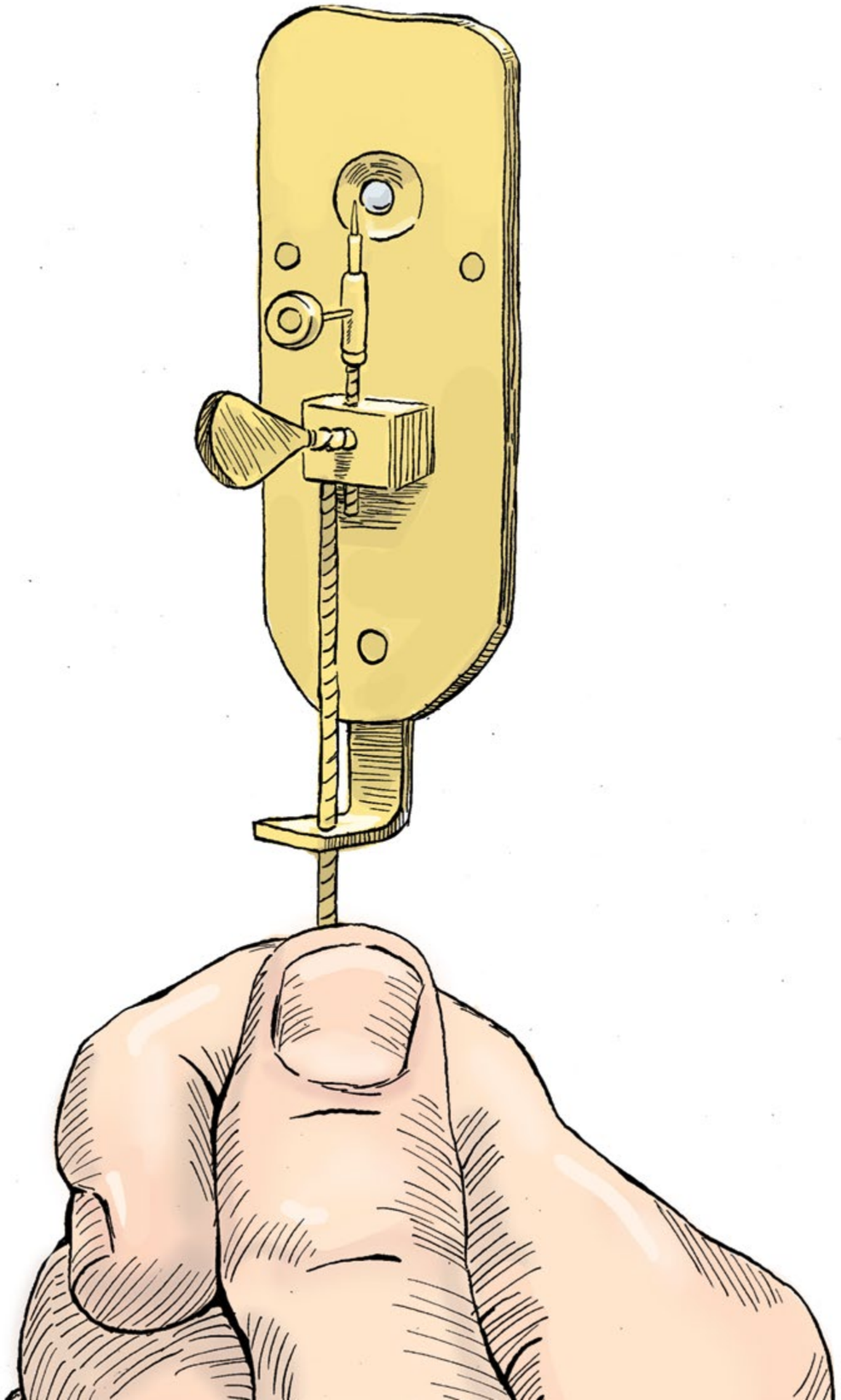
2A-3

2A-4

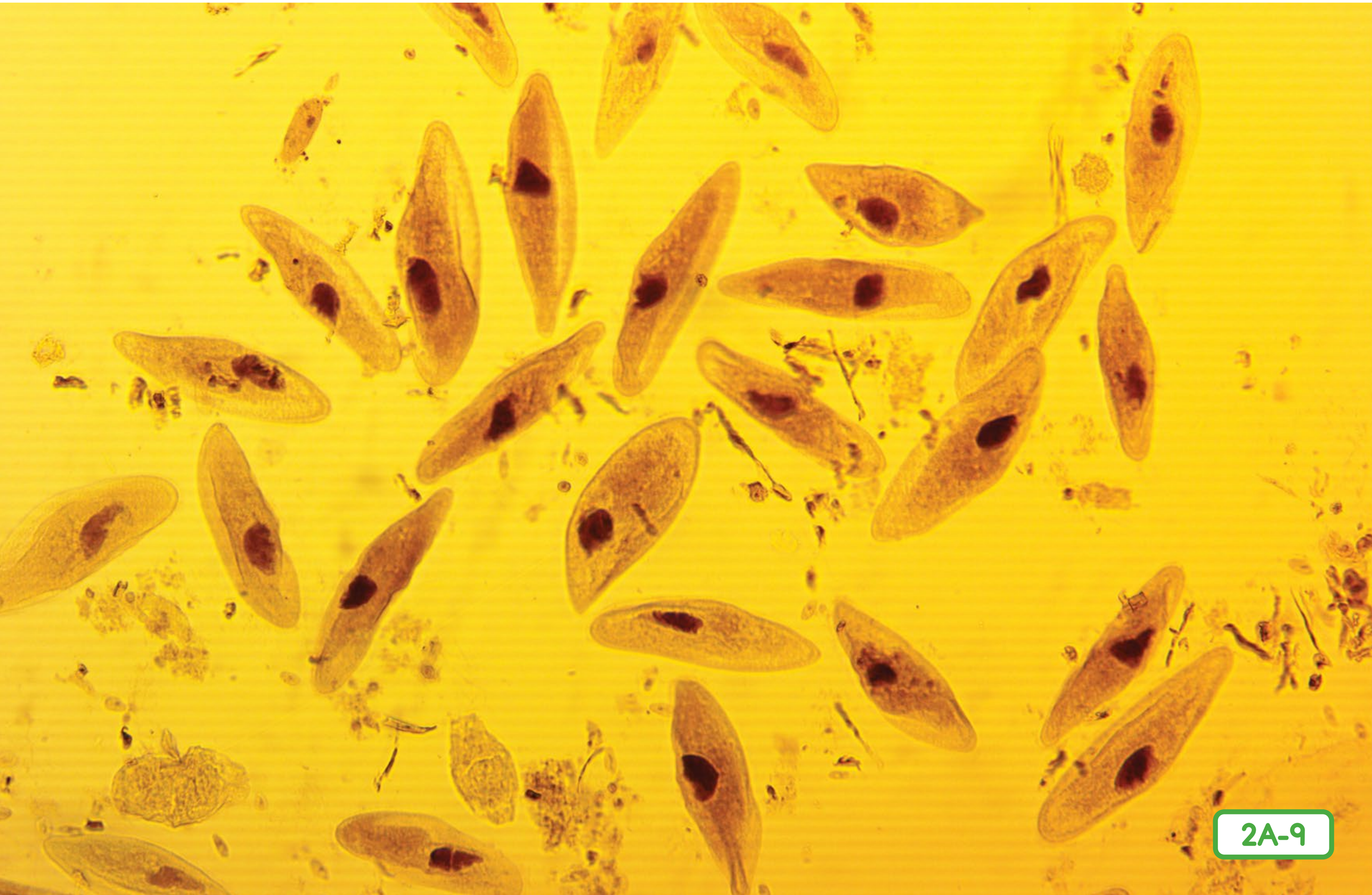
2A-5


210
MICROGRAPHIA.
Observ. LIII. Of a Flea.
The strength and beauty of this small creature, had it no other relation at all to man, would deserve a description.
For its strength, the Microscope is able to make no greater discoveries of it then the naked eye, but onely the curious contrivance of its leggs and joints, for the exerting that strength, is very plainly manifested, such as no other creature, I have yet observ'd, has any thing like it; for the joints of it are so adapted, that he can, as 'twere, fold them short one within another, and suddenly stretch, or spring them out to their whole length, that is, of the fore-leggs, the part A, of the 34. Scheme, lies within B, and B within C, parallel to, or side by side each other; but the parts of the two next, lie quite contrary, that is, D without E, and E without F, but parallel also; but the parts of the hinder leggs, G, H and I, bend one within another, like the parts of a double jointed Ruler, or like the foot, legg and thigh of a man; these six leggs he clitches up altogether, and when he leaps, springs them all out, and thereby exerts his whole strength at once.
But, as for the beauty of it, the Microscope manifests it to be all over adorn'd with a curiously polish'd suit of sable Armour, neatly jointed, and beset with multitudes of sharp pinns, shap'd almost like Porcupine's Quills, or bright conical Steel-bodkins; the head is on either side beautify'd with a quick and round black eye K, behind each of which also appears a small cavity, L, in which he seems to move to and fro a certain thin film beset with many small transparent hairs, which probably may be his ears; in the forepart of his head, between the two fore-leggs, he has two small long jointed feelers, or rather smellers, M M, which have four joints, and are hairy, like those of several other creatures; between these, it has a small proboscis, or probe, NNO, that seems to consist of a tube,
Schem. XXXIV
ANTONII a LEEUWENHOEK. 357
primo prodeuntem vermem ope fortis alicujus gummi particulæ cuidam æris agglutinavi, atque ita eum microscopio opposui & pictori tradidi, ut quantum pote accurate vermem quem videret, delinearet, vermis enim vehementissime sese movebat.
Fig. 1. ABC. repræsentat vermem supinum æri agglutinatum, & ita etiam hic delineatum. A. est caput, in quo duæ partes instar cornuum prominent, ex quibus adhuc tam exiguæ prominebant partes, ut pictor eas non nisi monitus videret, inter hæc cornua duæ aliæ breviores apparent partes prominentes, quæ non in capite sunt, sed in ejus parte inferiori, ubi os est; his vero partibus in progressu utitur vermis, & similiter etiam partibus in parte postica corporis C. delineatis.
Postquam hic vermis erat depictus, tam vehementer laborabat, ut e gummi decideret, tum eum iterum ope gummi partis æreæ cuspidi agglutinaui, quod tamen tam leviter agere non potui, quin aliqua gummi parte attingerem vermis caput, quod maxime ei nocere vidi, & quando ei parti per 6. horas fuerat agglutinatus, moriebatur; paulo post vidi omnem humorem ita ex corpore ejus exhalare, ut vario modo contraheretur, & post viginti quatuor horas hujus vermis corpus præ ariditate ita erat contractum, ut vermem non amplius referret, ubi e contra alius vermis, qui duas horas post priorem ex ovo erat exclusus, & per duas tantum horas minus, ope gummi glutinosi, microscopio fuerat oppositus, non solum viveret, sed & ejus corpus tam stricte manebat expansum, acsi recens ex ovo fuisset exclusus.
Quando vermis 30. horas microscopio fuerat oppositus, & adhuc admodum erat vividus, mihi videre persuasi ejus corpus non tam rigide esse expansum, & consequenter aliquantulum humoris ex corpore ejus exhalatum esse.
Hunc vermem postea sæpe inspexi, & cum per 64. horas microscopio
Yy 3

2A-6

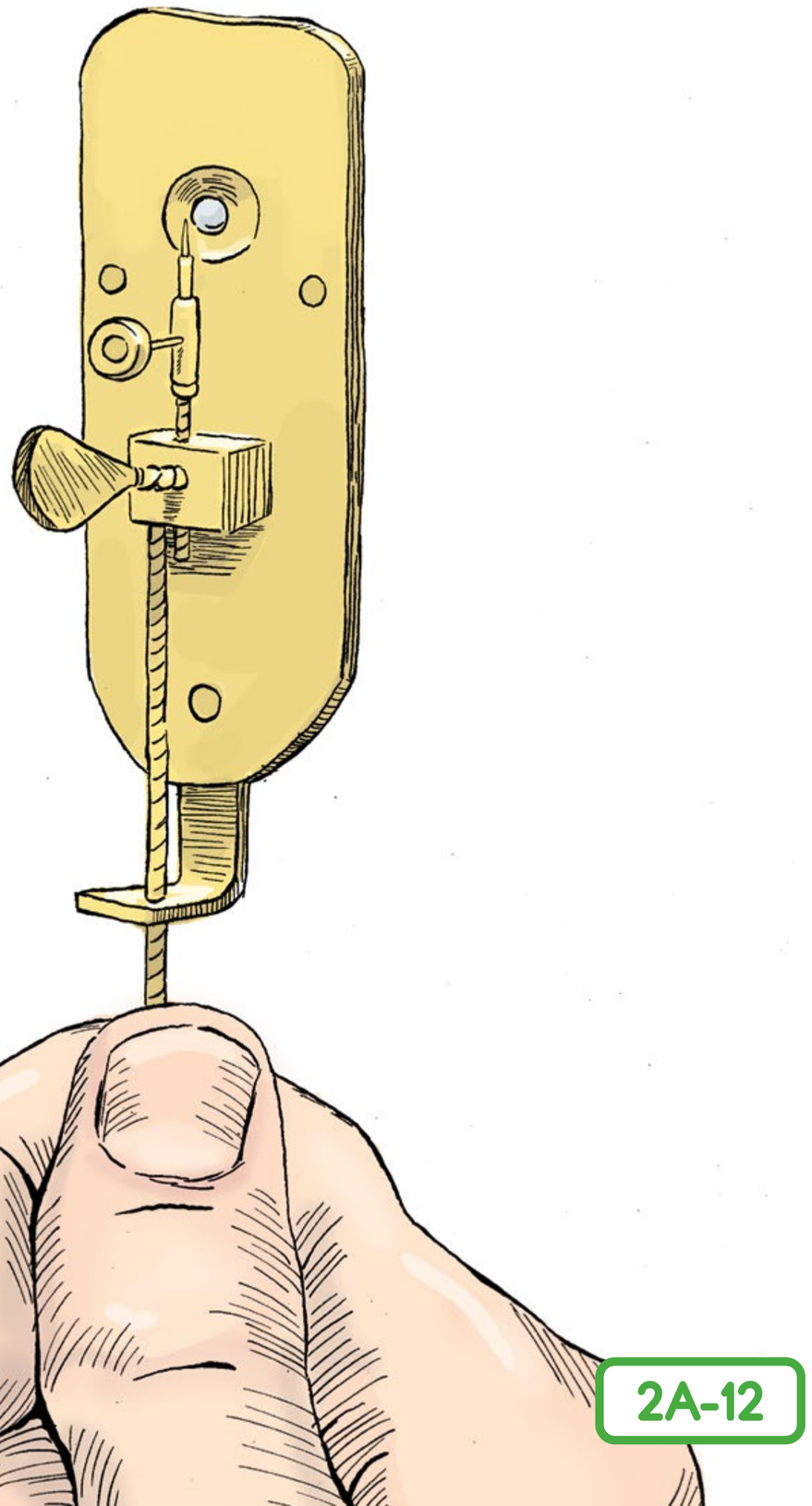


2A-8



2A-9

2A-11



2A-12

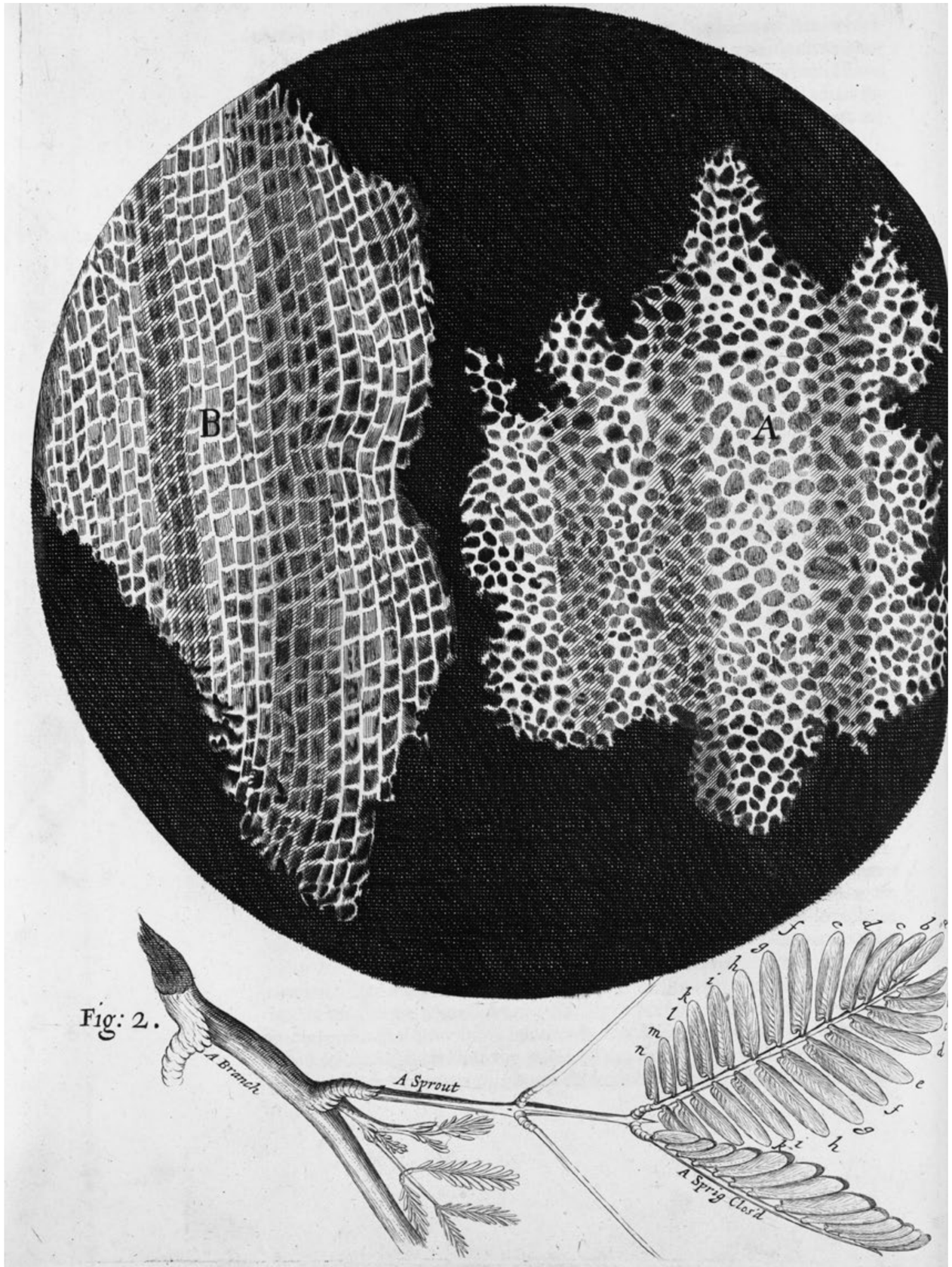
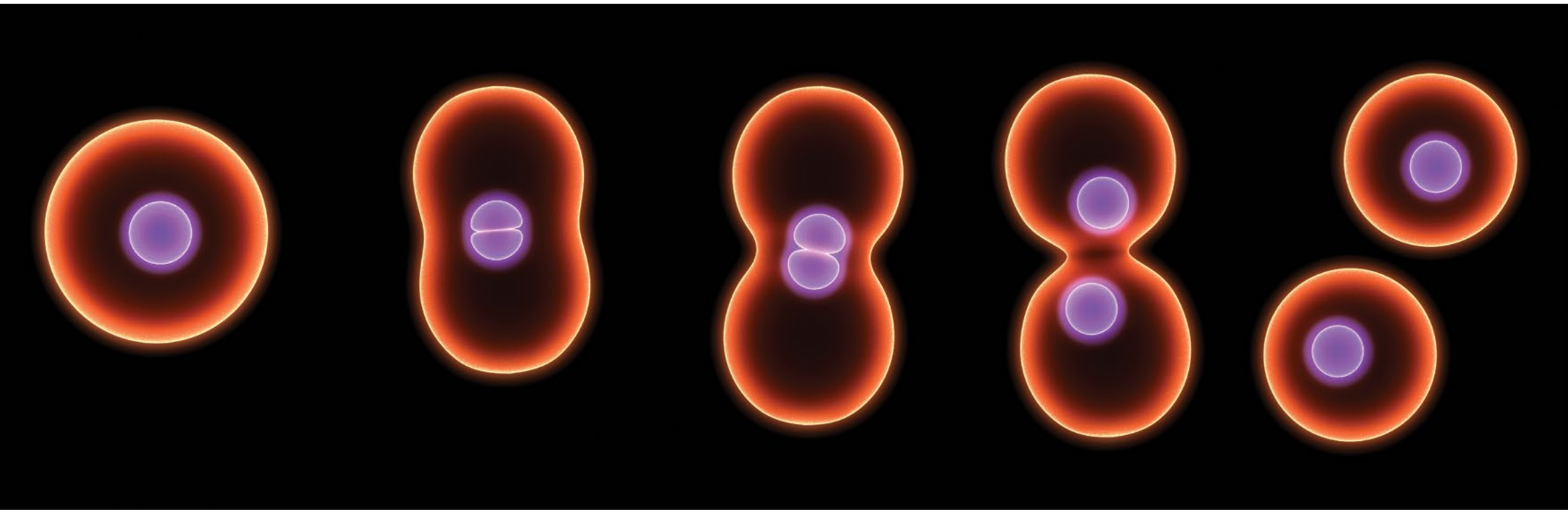
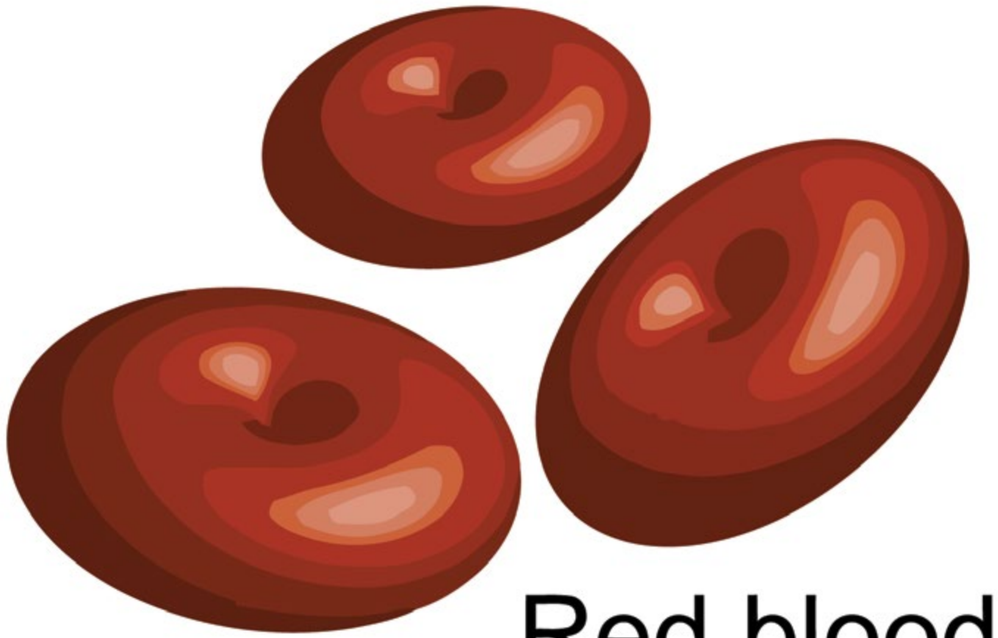


Fig: 2.

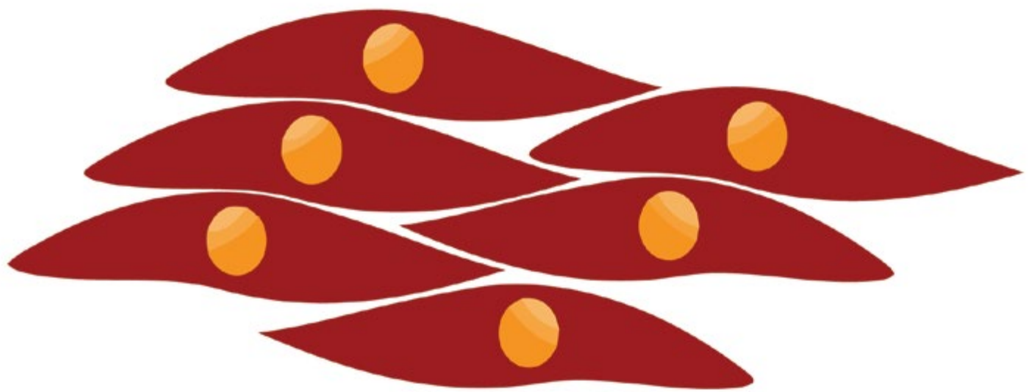
3A-2

3A-3



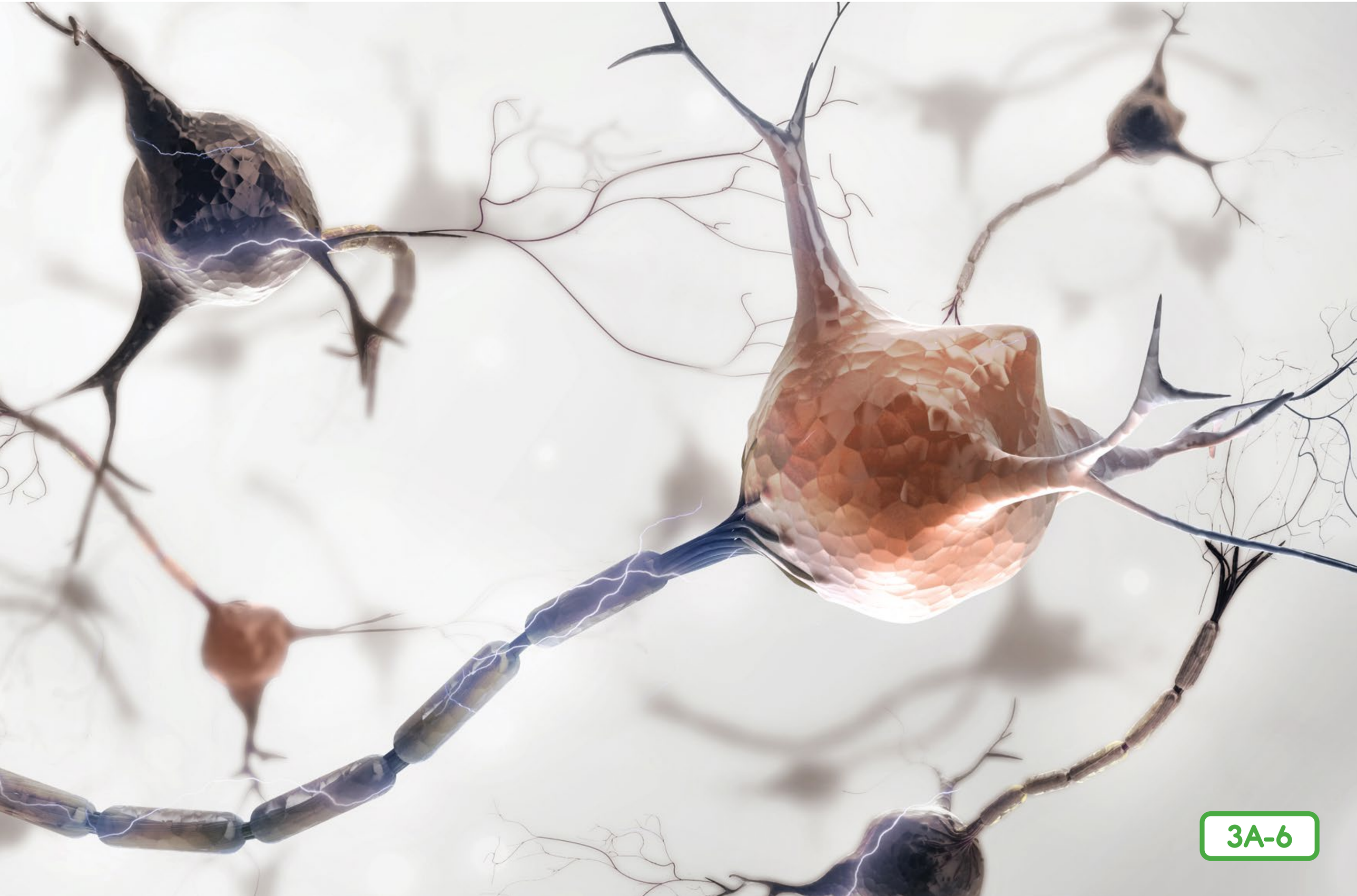


Red blood cells



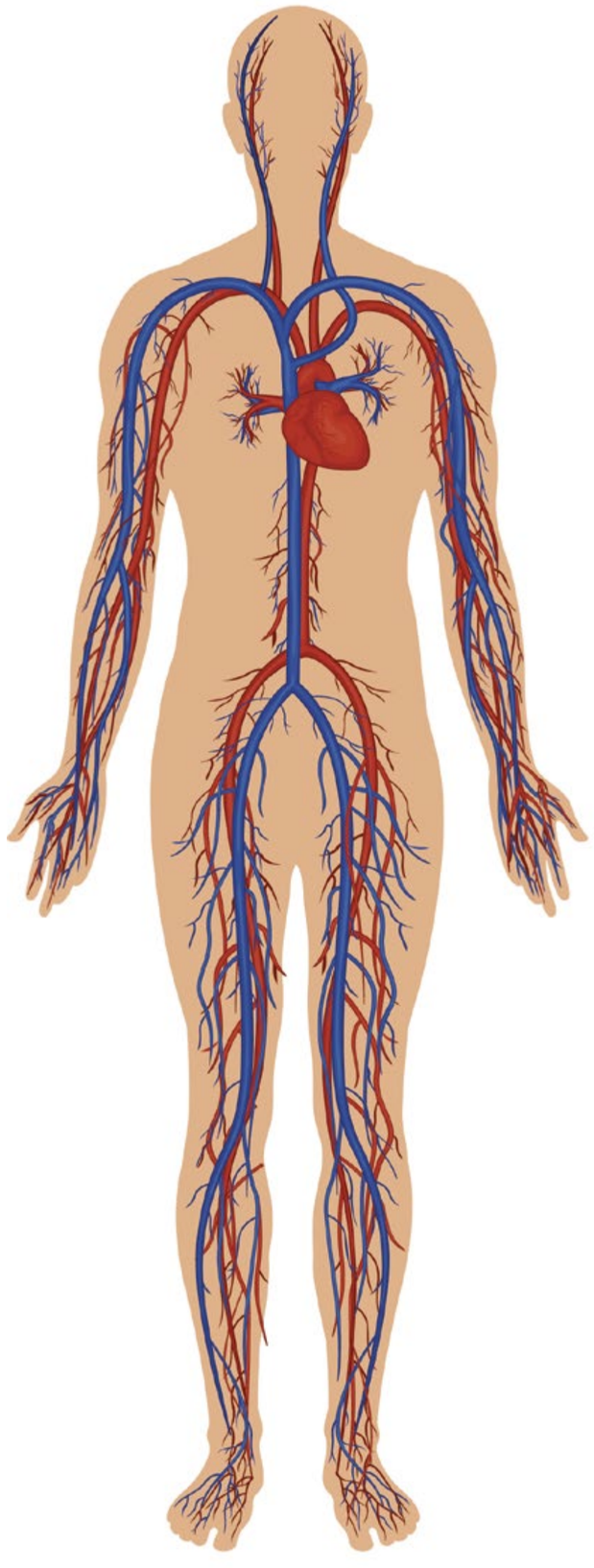
Smooth muscle cells

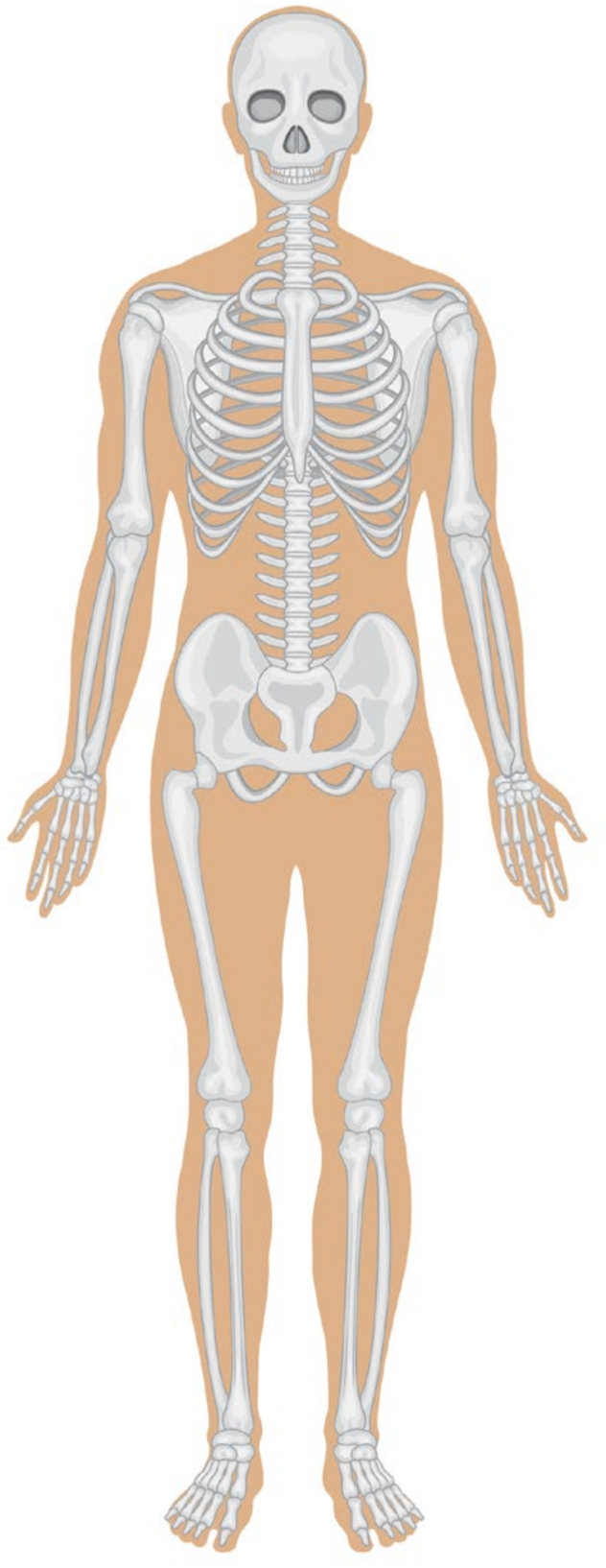
Bone cell



3A-6

3A-7





3A-9

3A-10

tissue damage

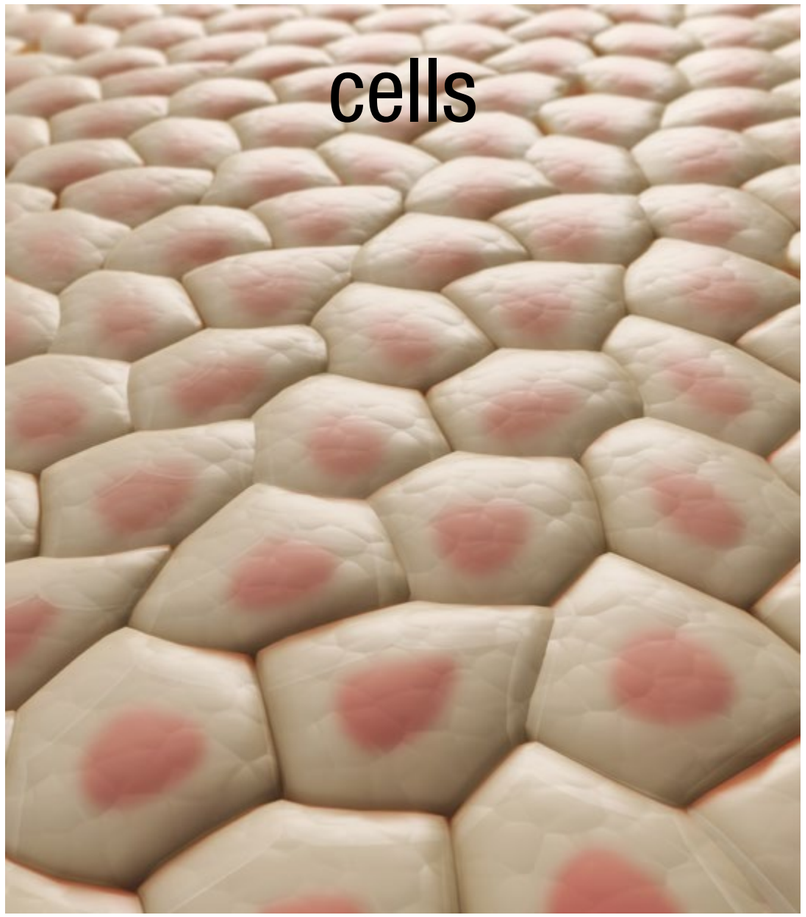
cell signals

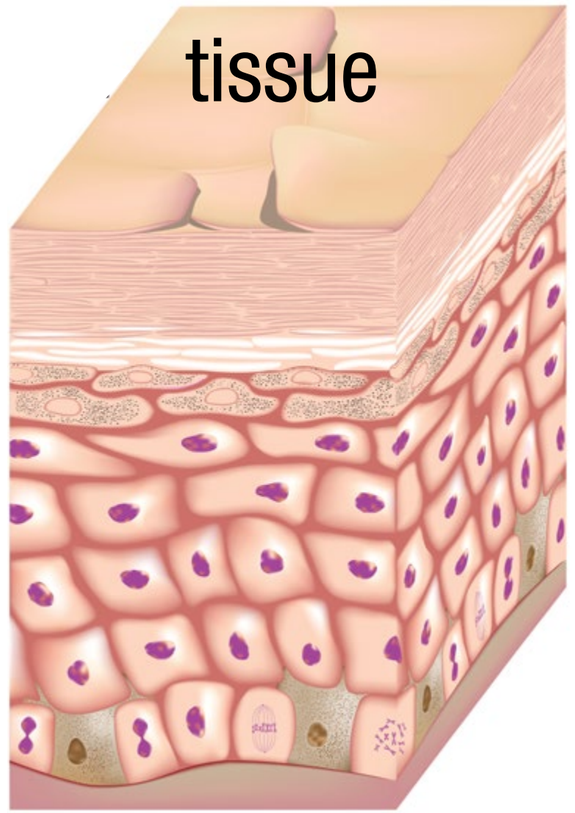
epithelial tissue

cells

germs

3A-11





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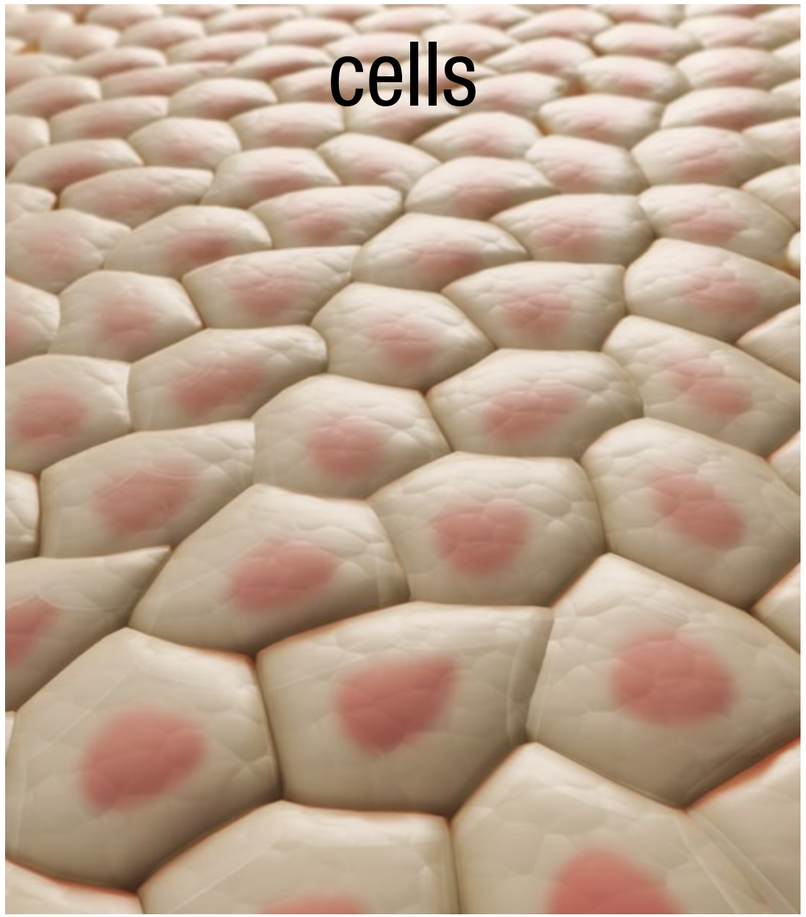
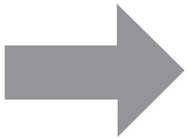
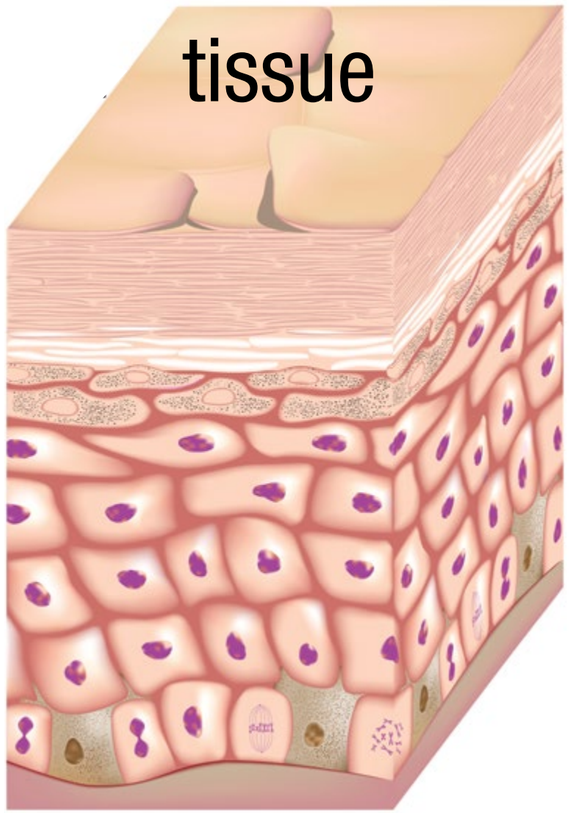
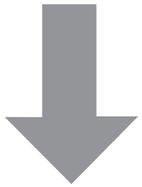
3A-12









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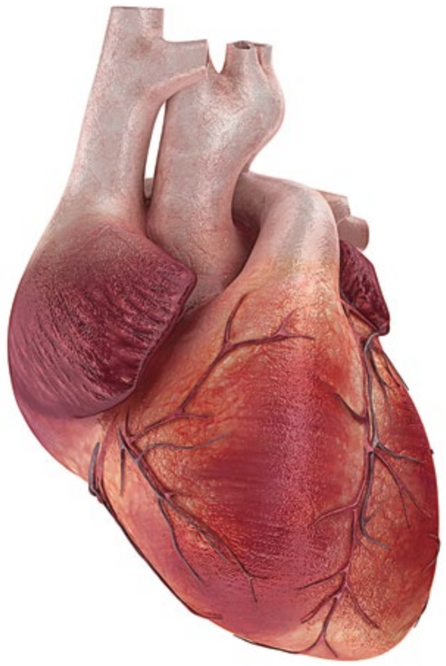
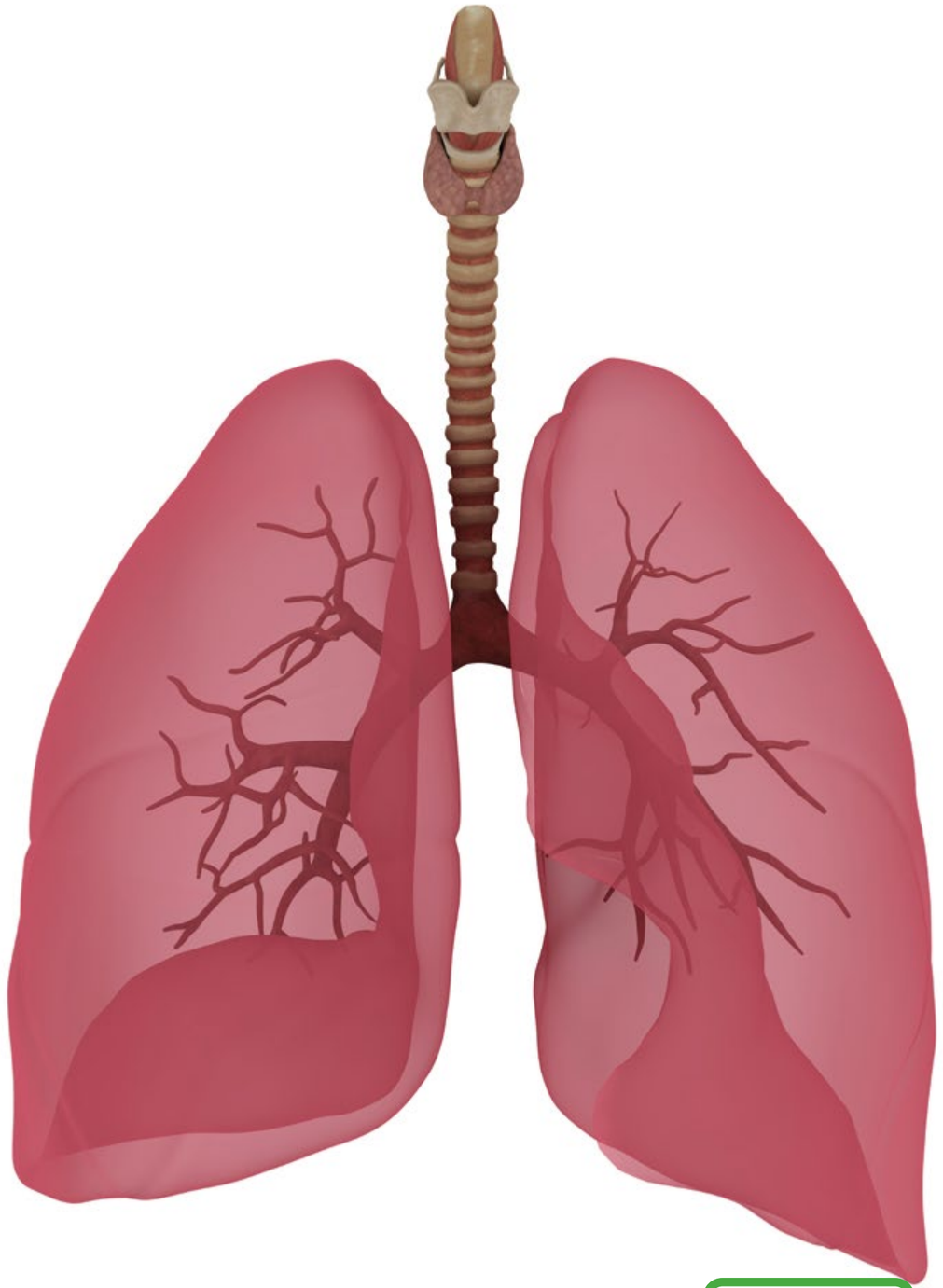
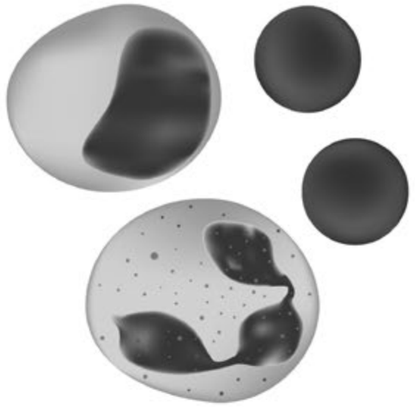
ЧА-1



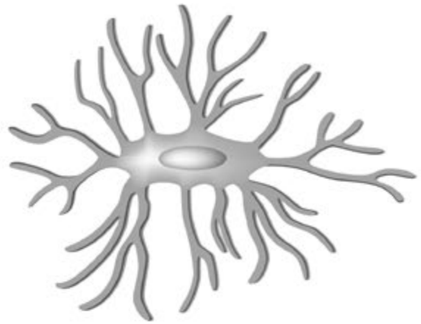


ЧА-2

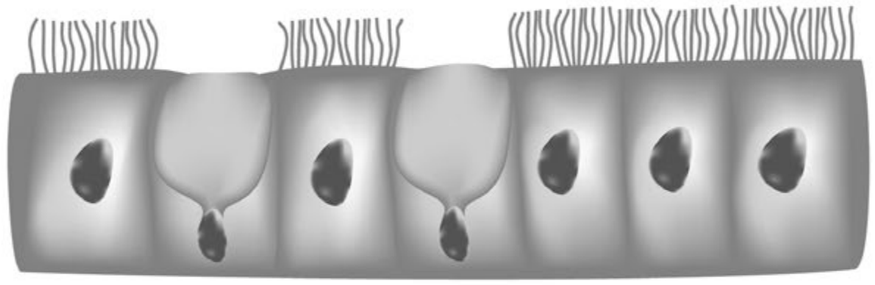


Blood cells

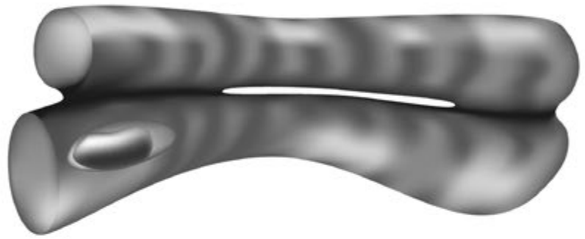
Surface skin cells



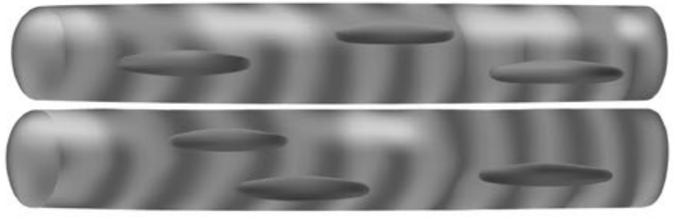
Bone cell



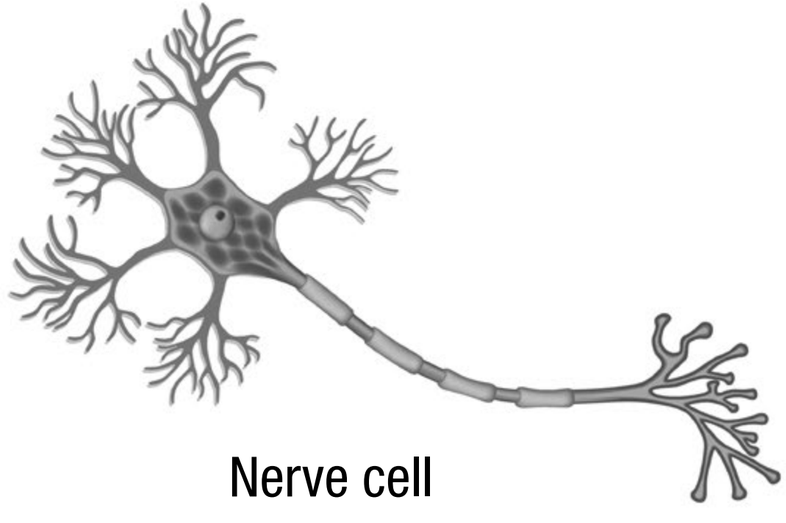
Epithelial cells



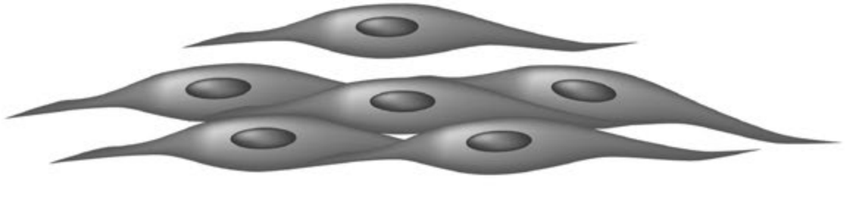
Cardiac muscle cell



Skeletal muscle cells

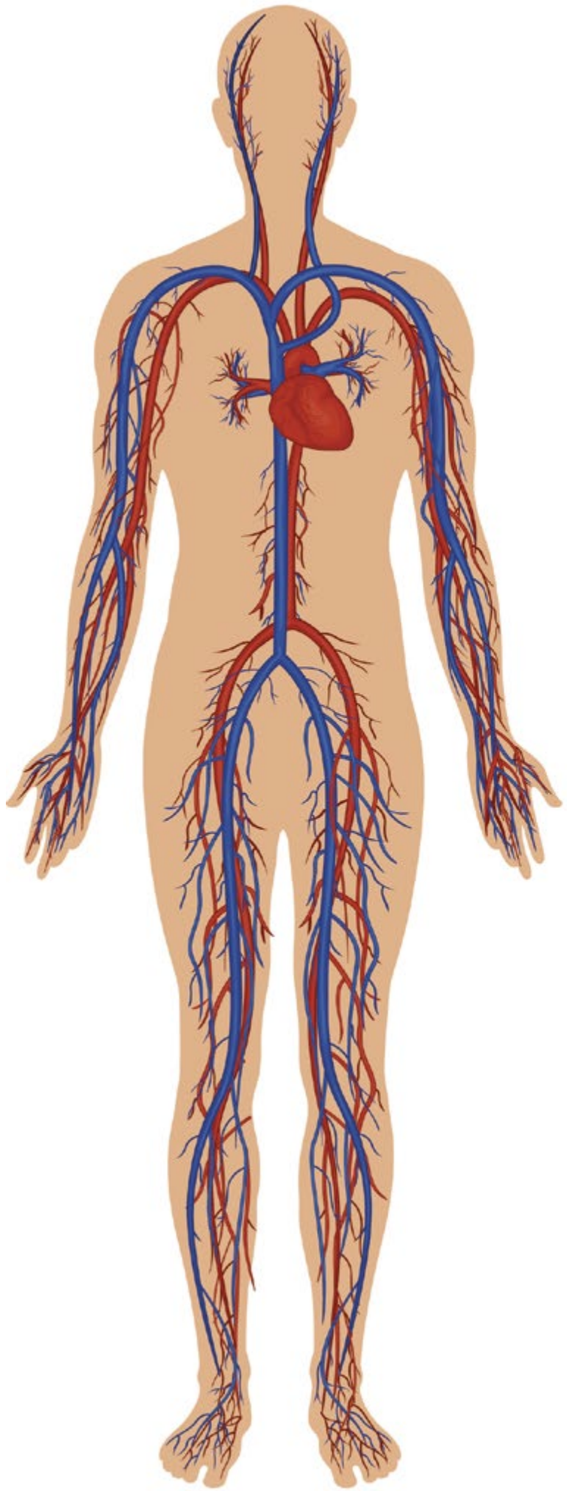


Nerve cell

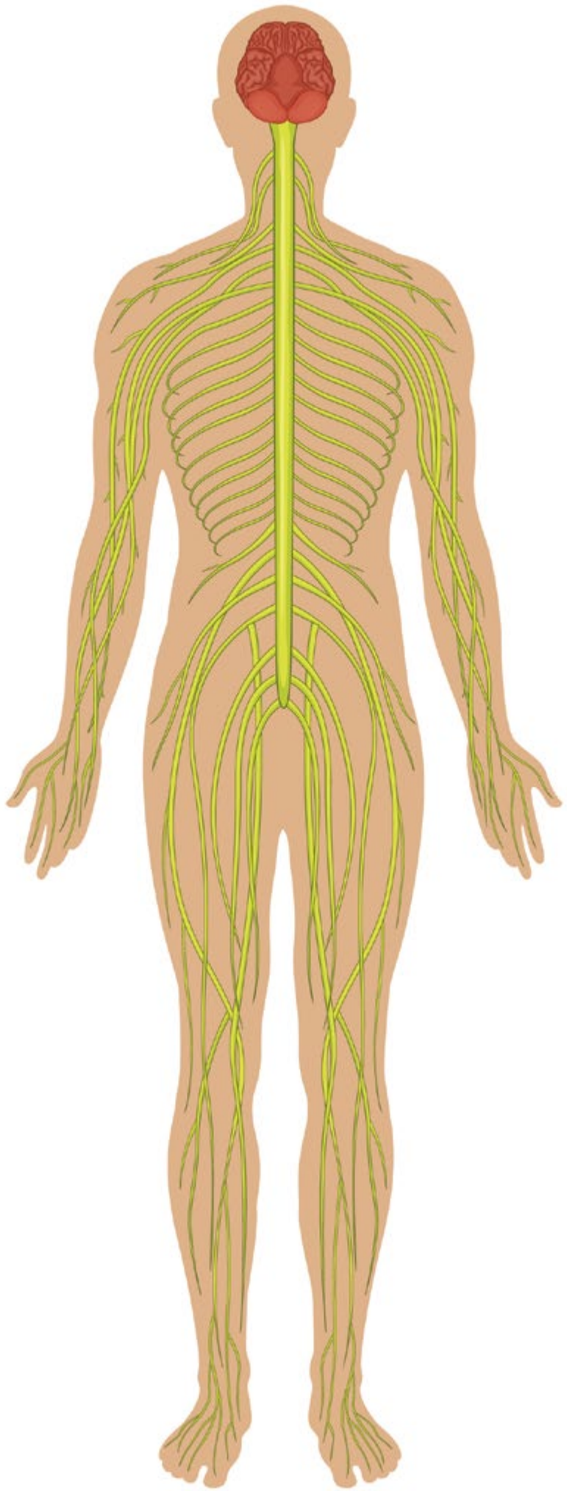


Smooth muscle cells

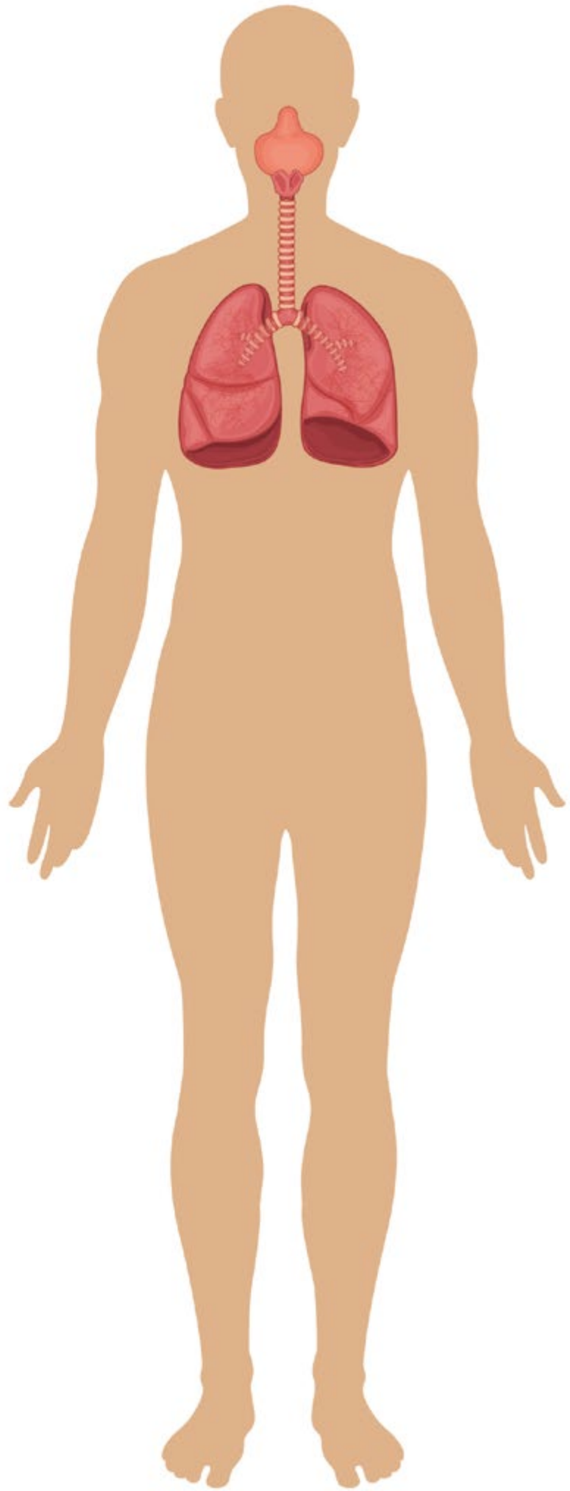
ЧА-4



Circulatory System

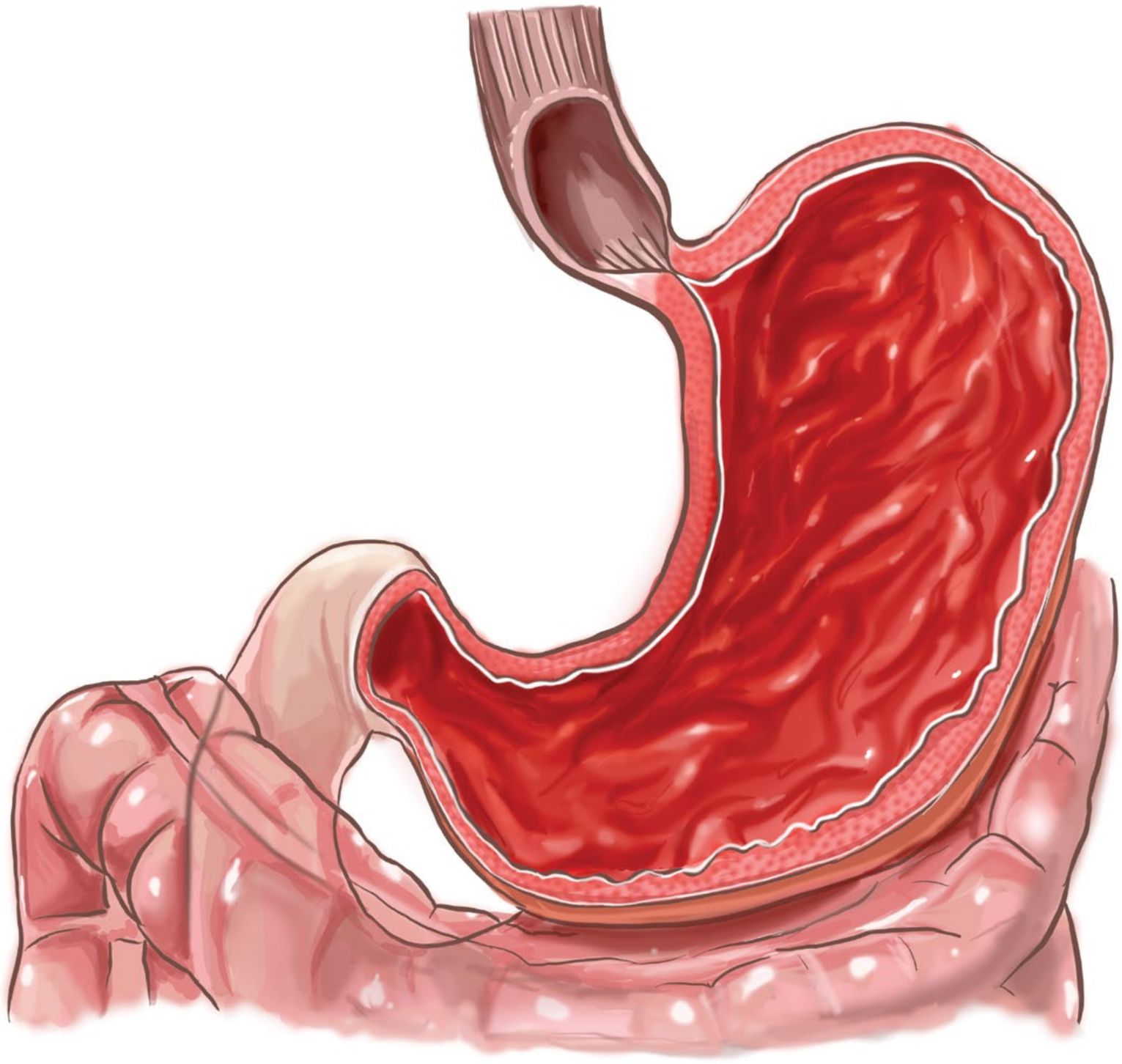


Nervous System

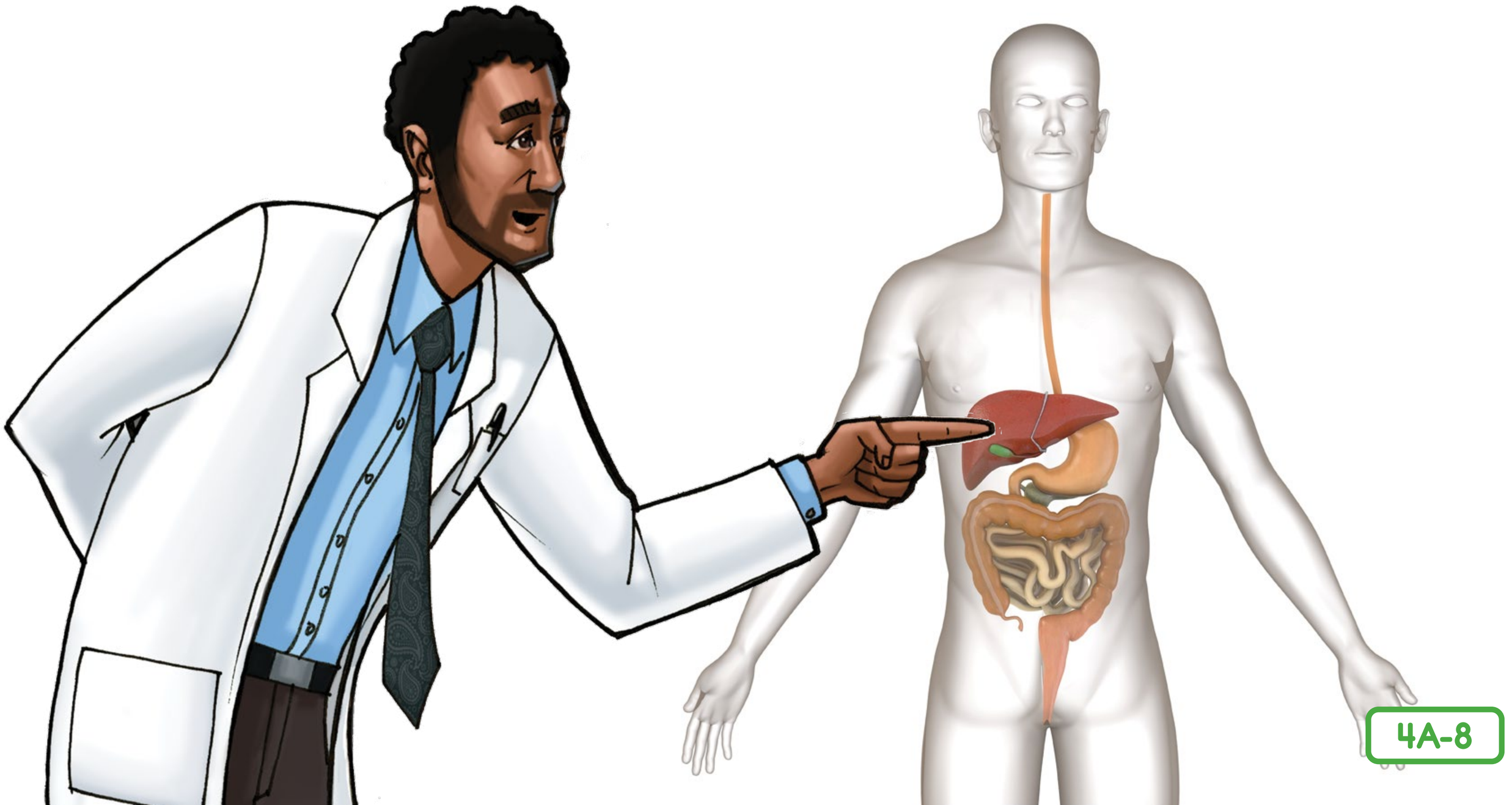


Respiratory System

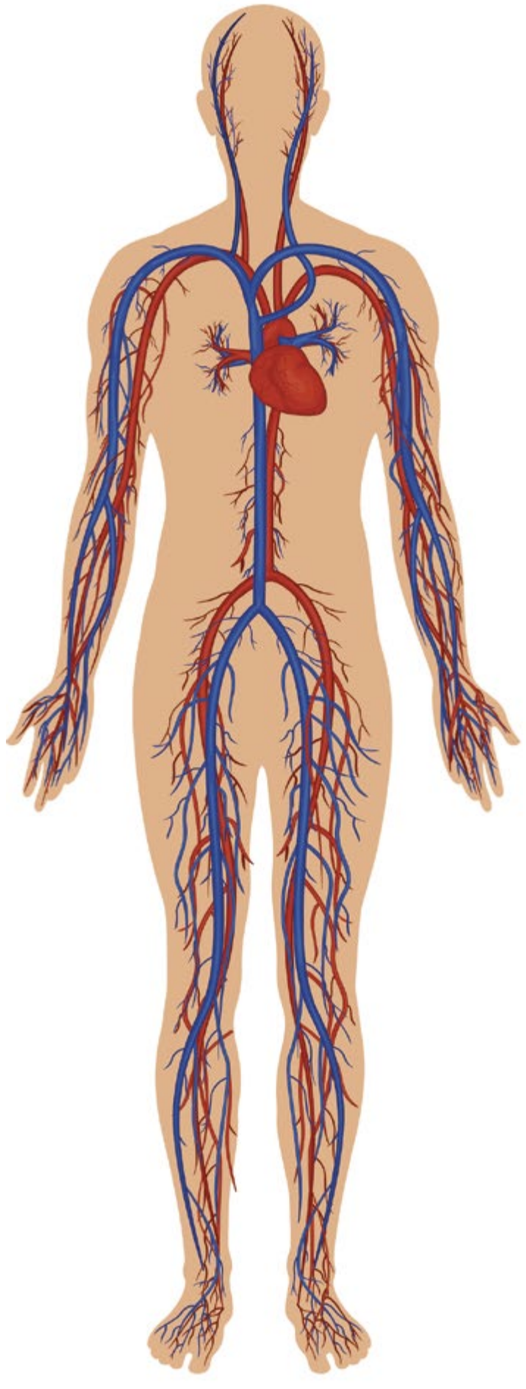
4A-5



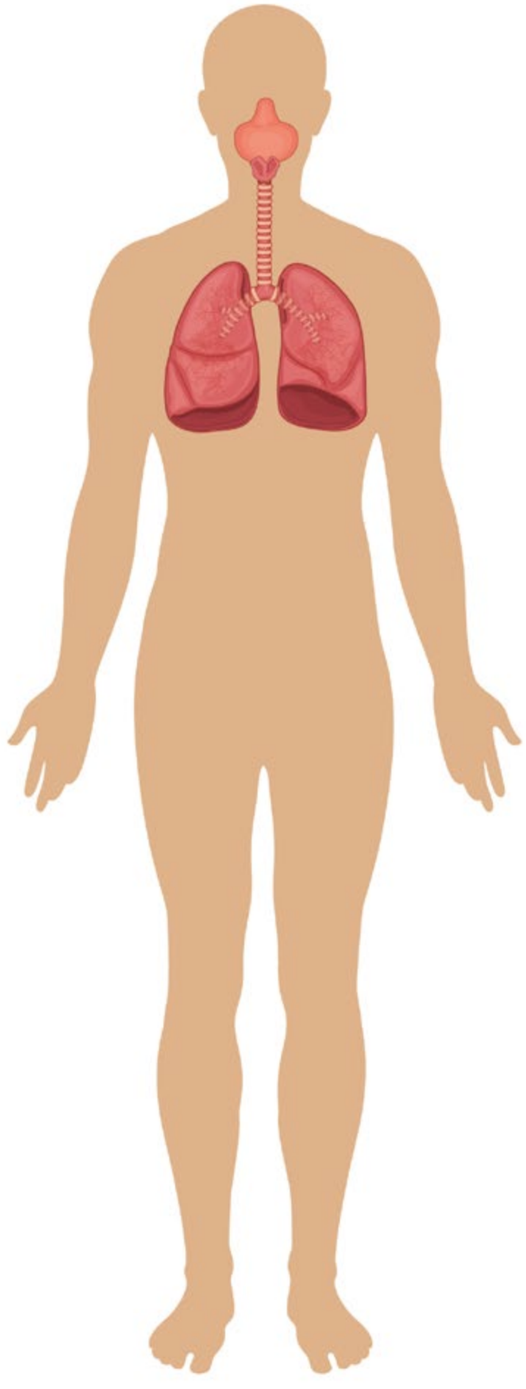
ЧА-7



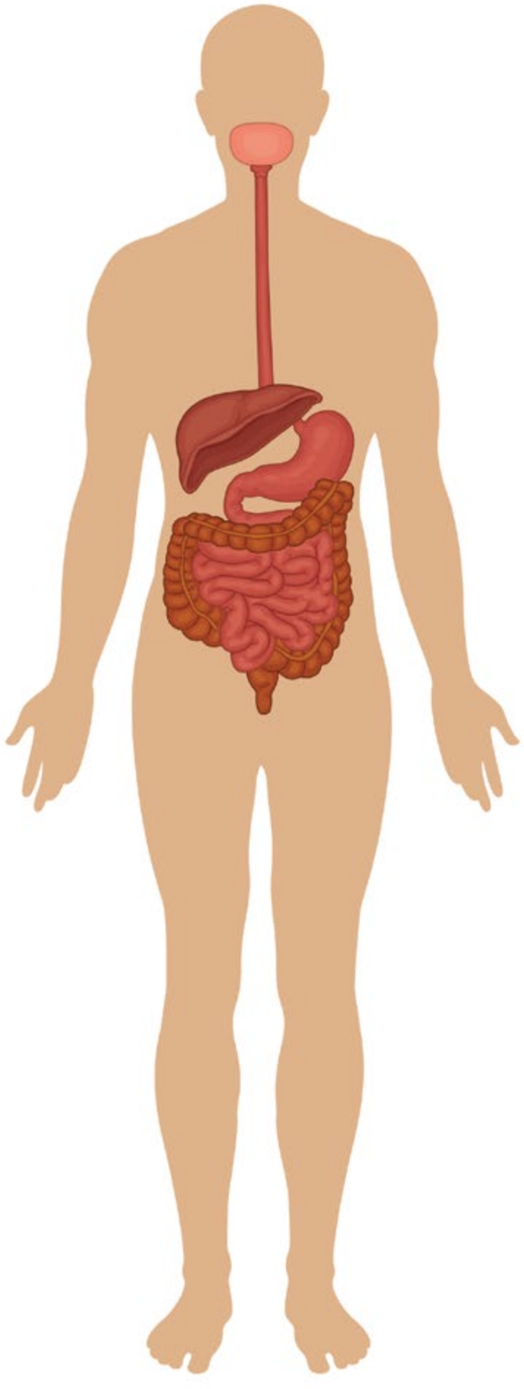
ЧА-8



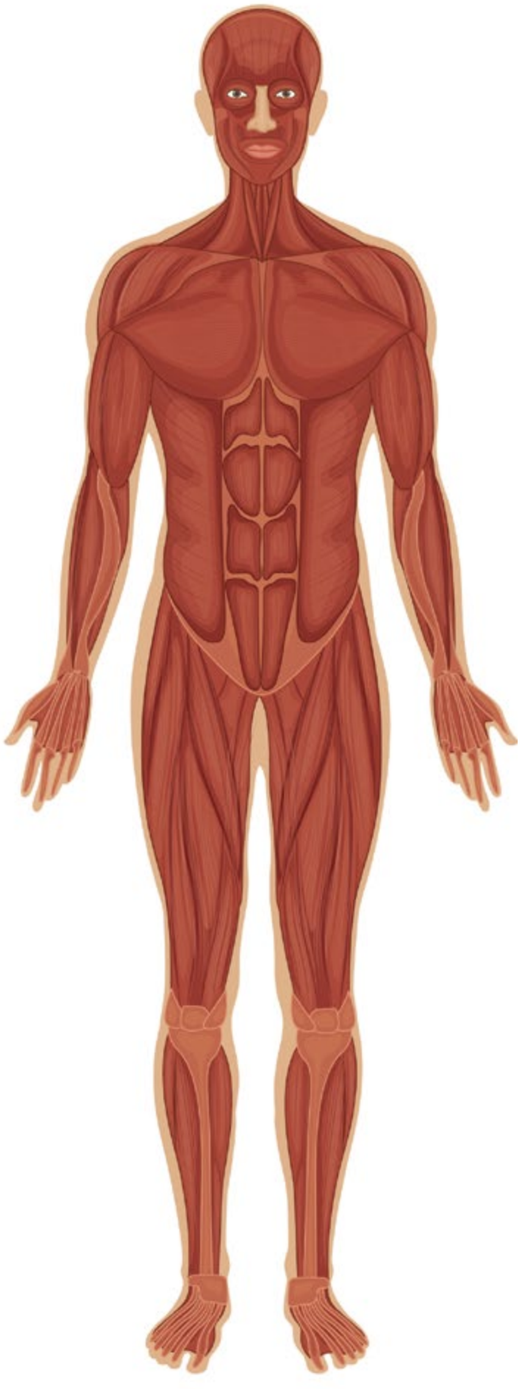
Circulatory System



Respiratory System

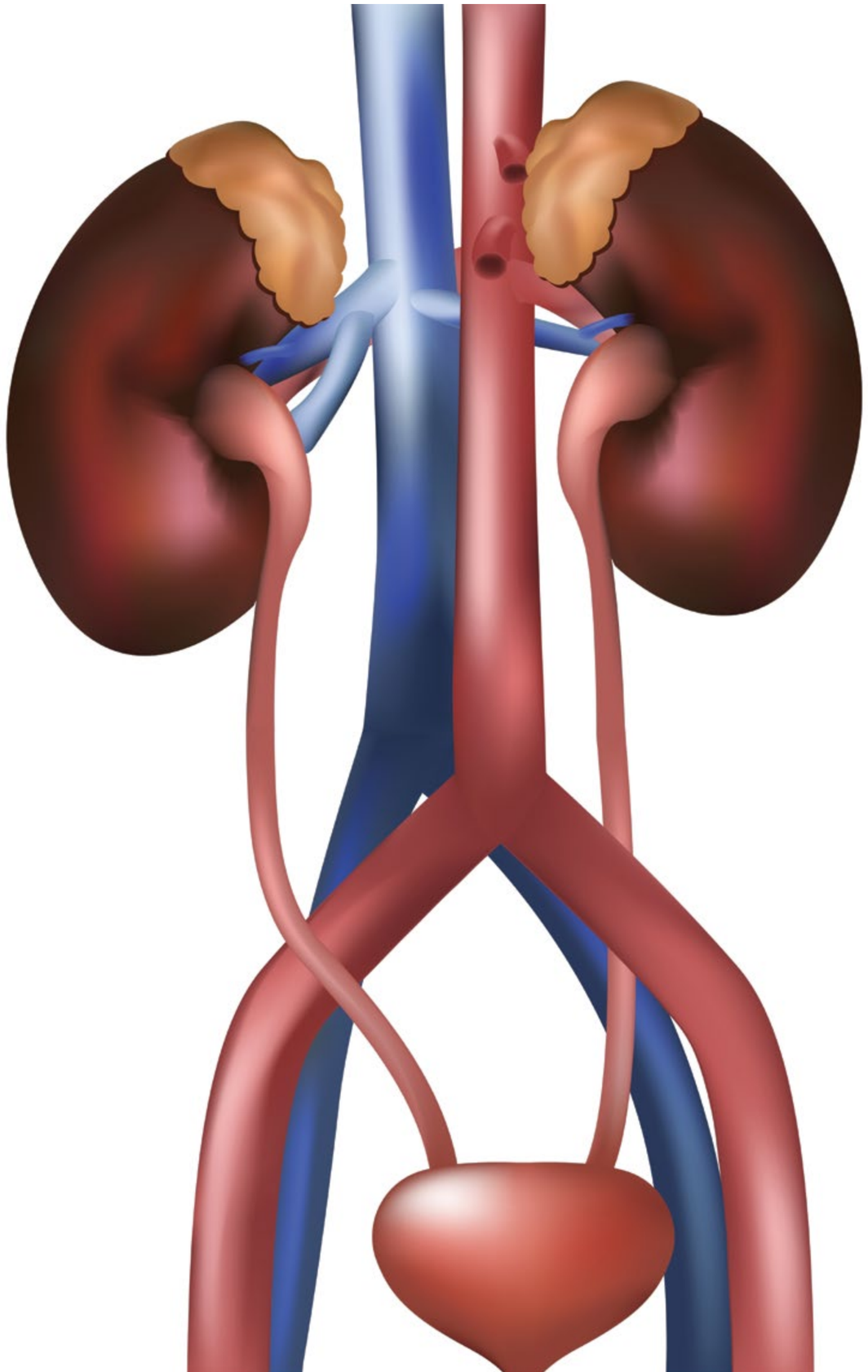


Digestive System

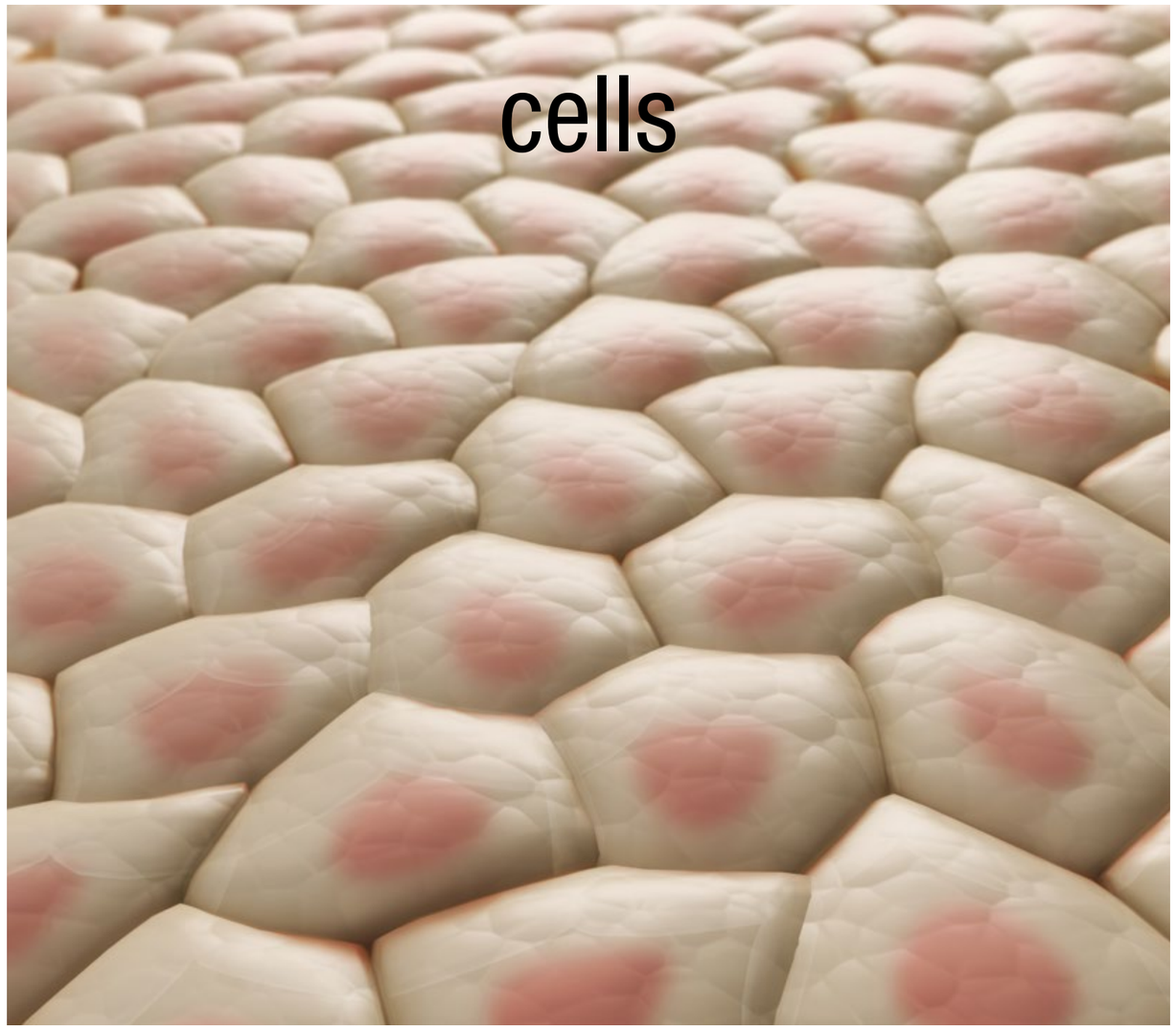


Muscular System

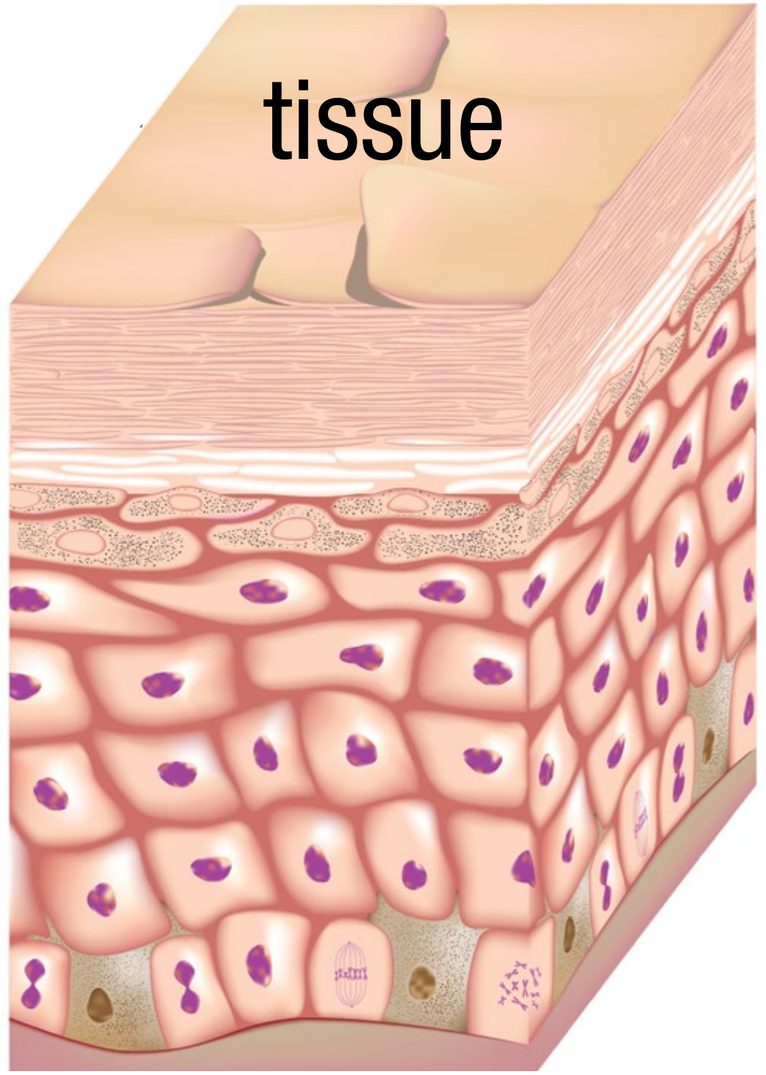
4A-9



cells

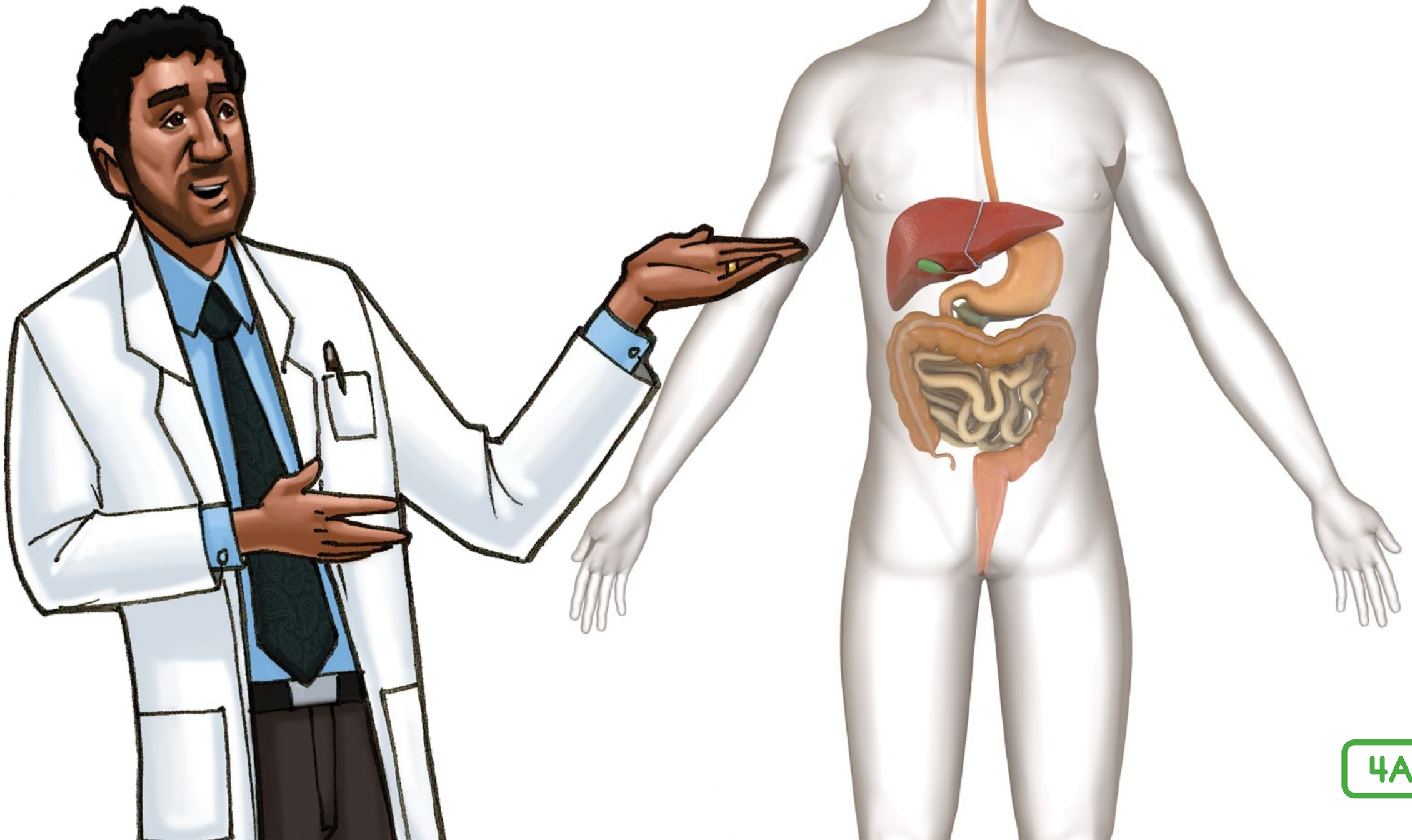


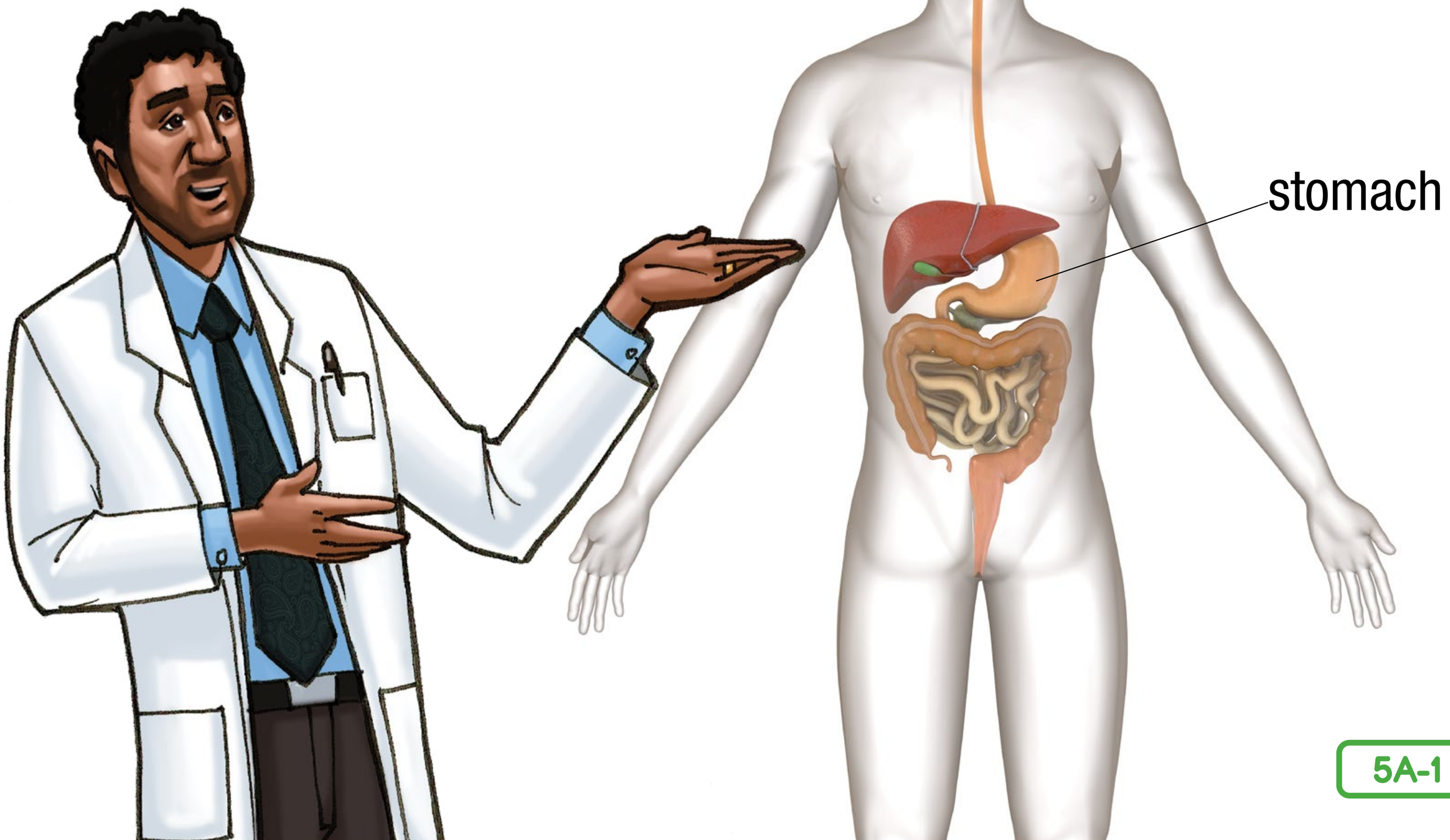
tissue



organ

4A-11



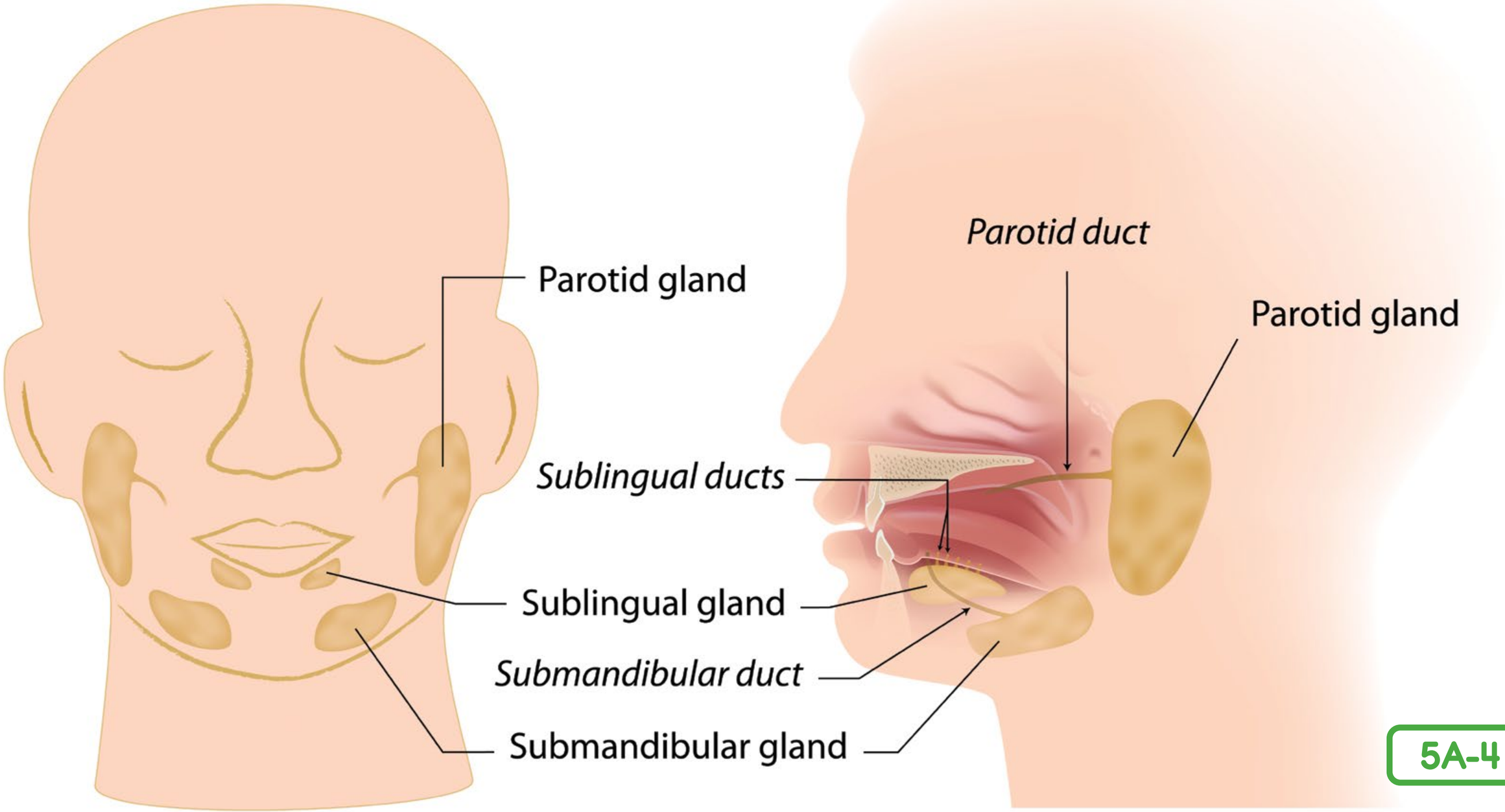


5A-1

5A-2

5A-3

The Salivary Glands



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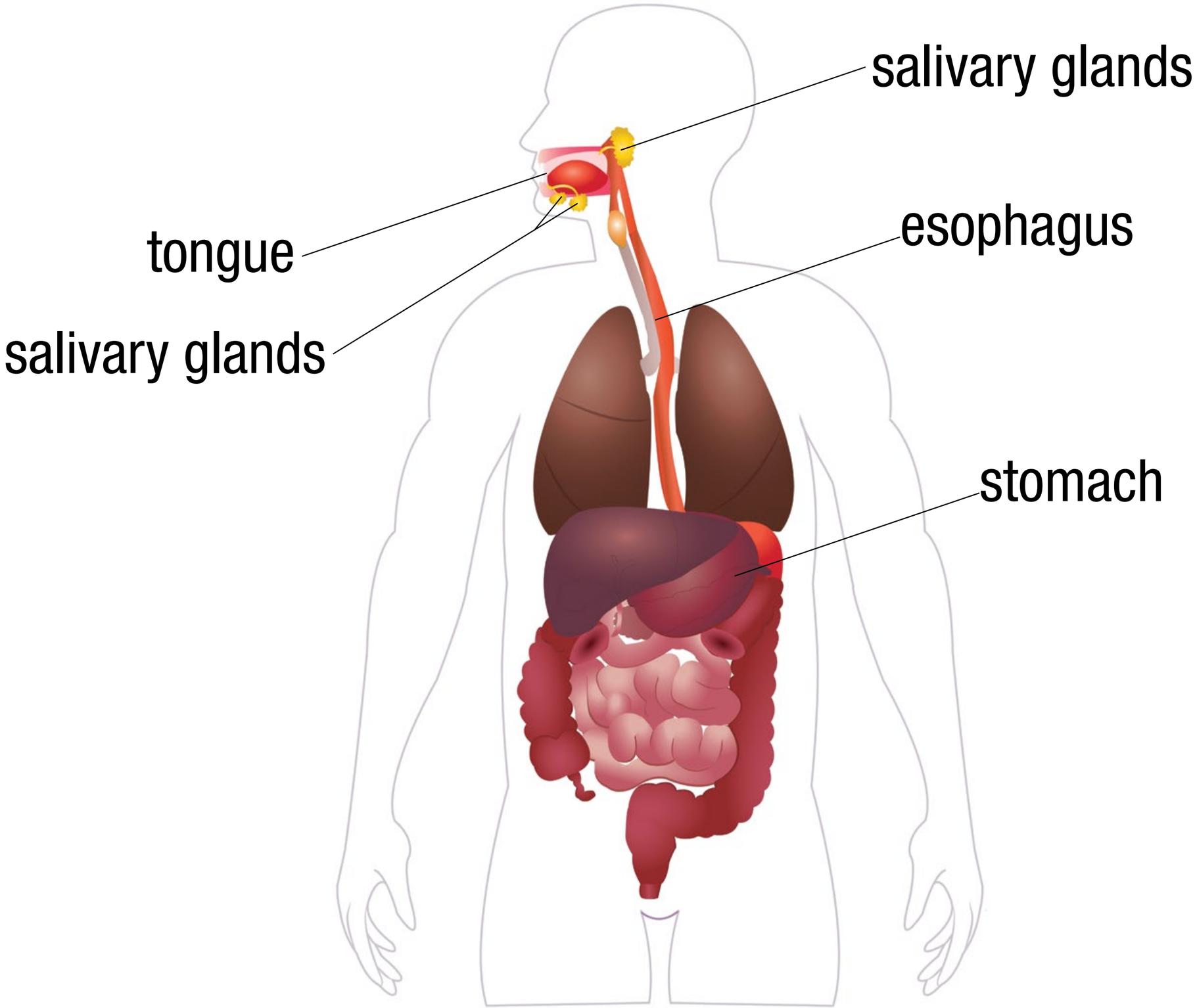
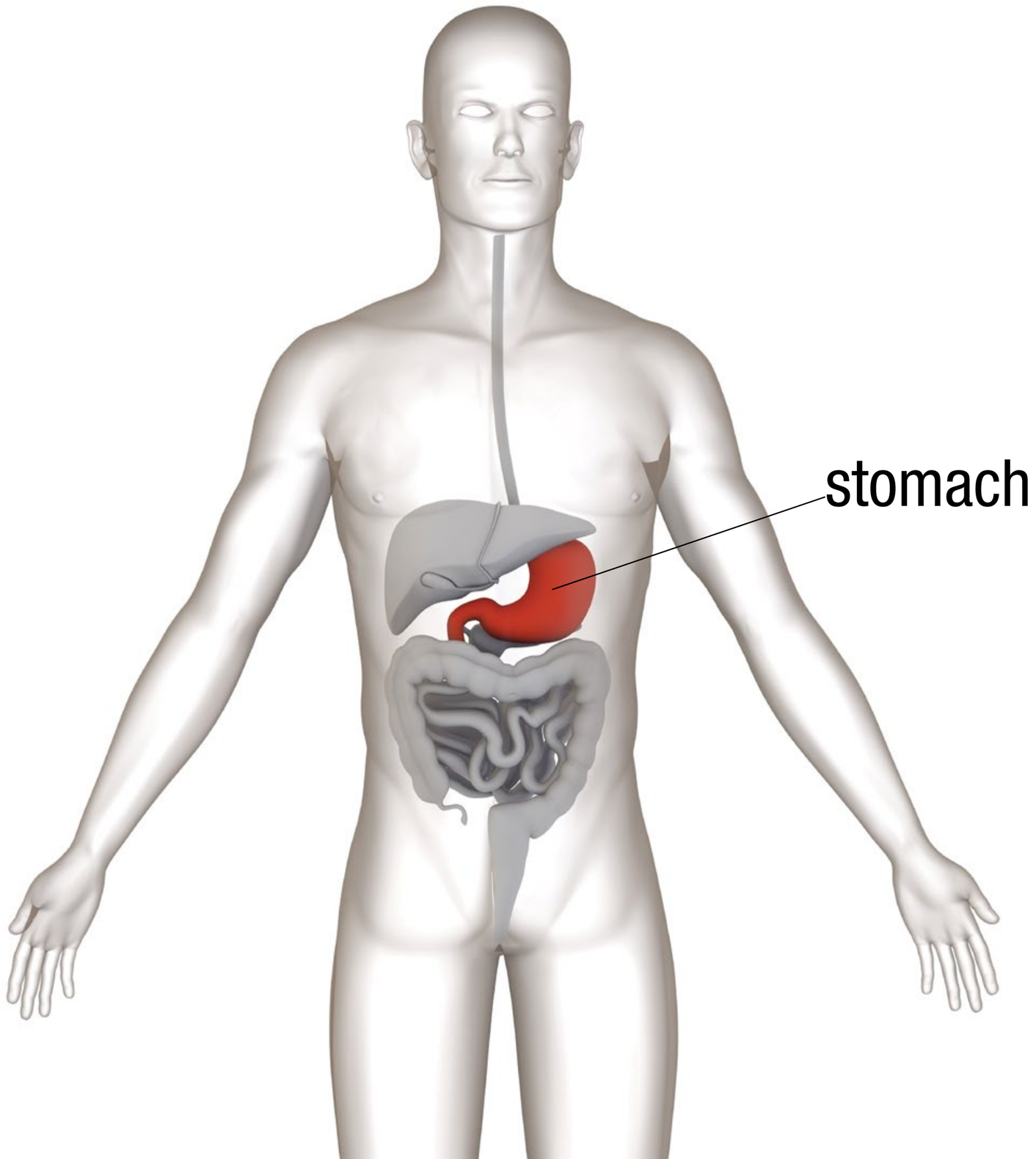

salivary glands
tongue
esophagus
salivary glands
stomach

5A-5



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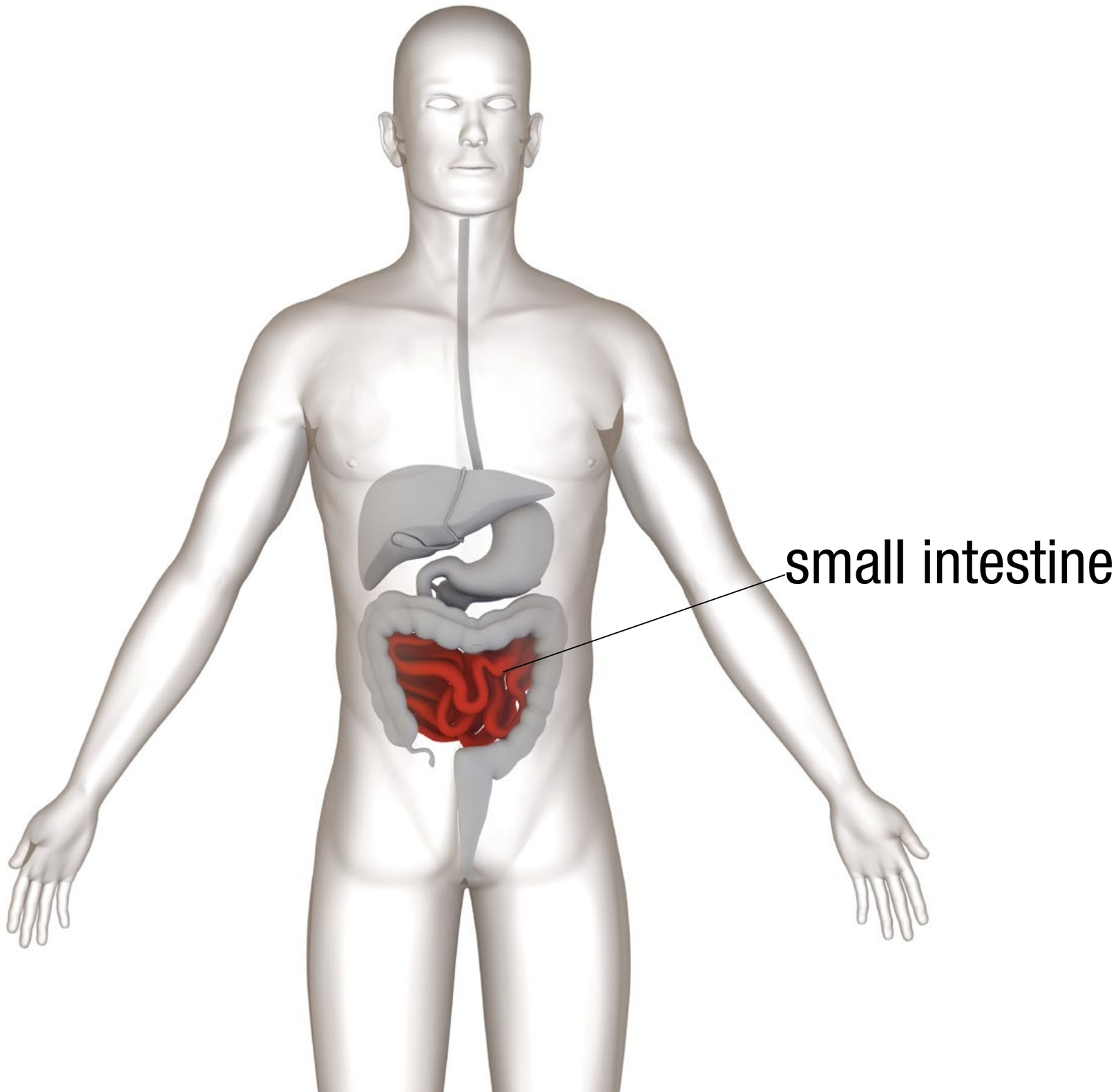
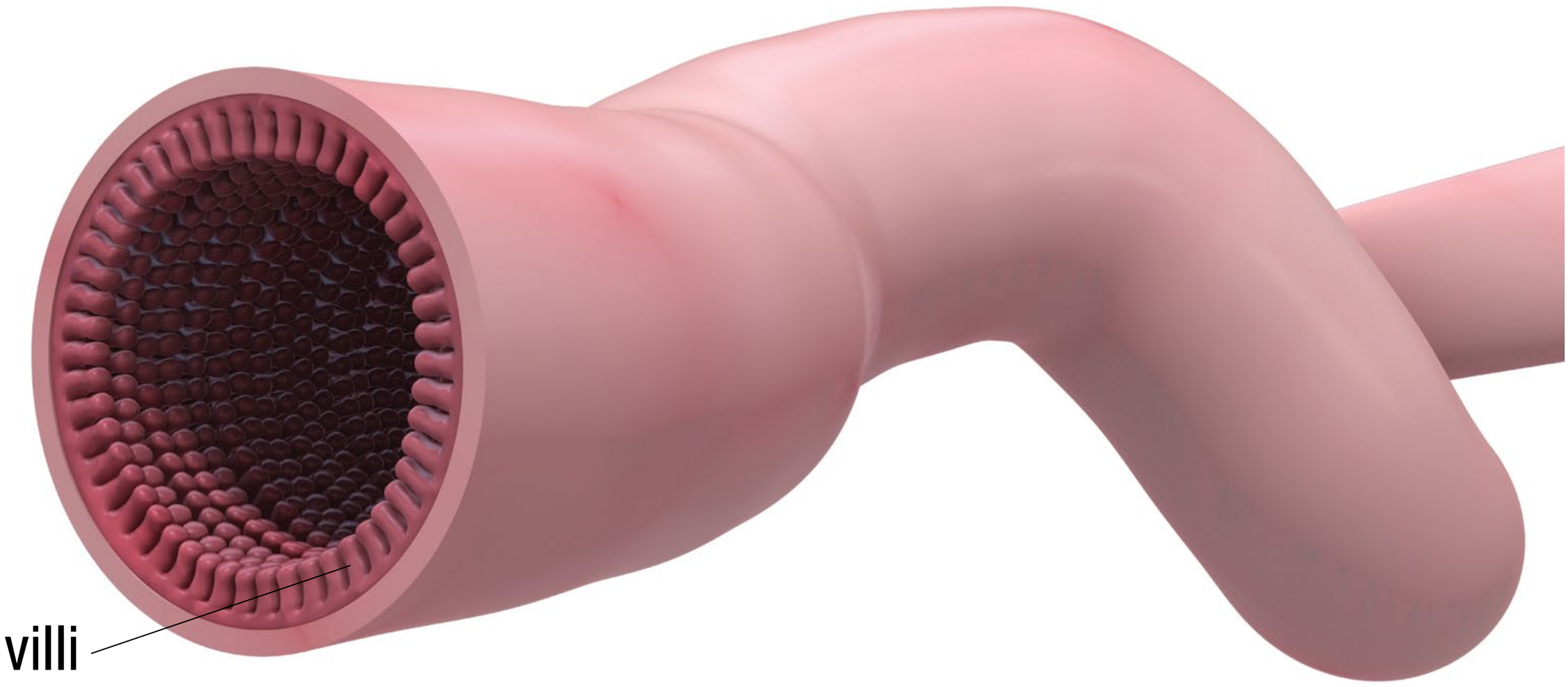
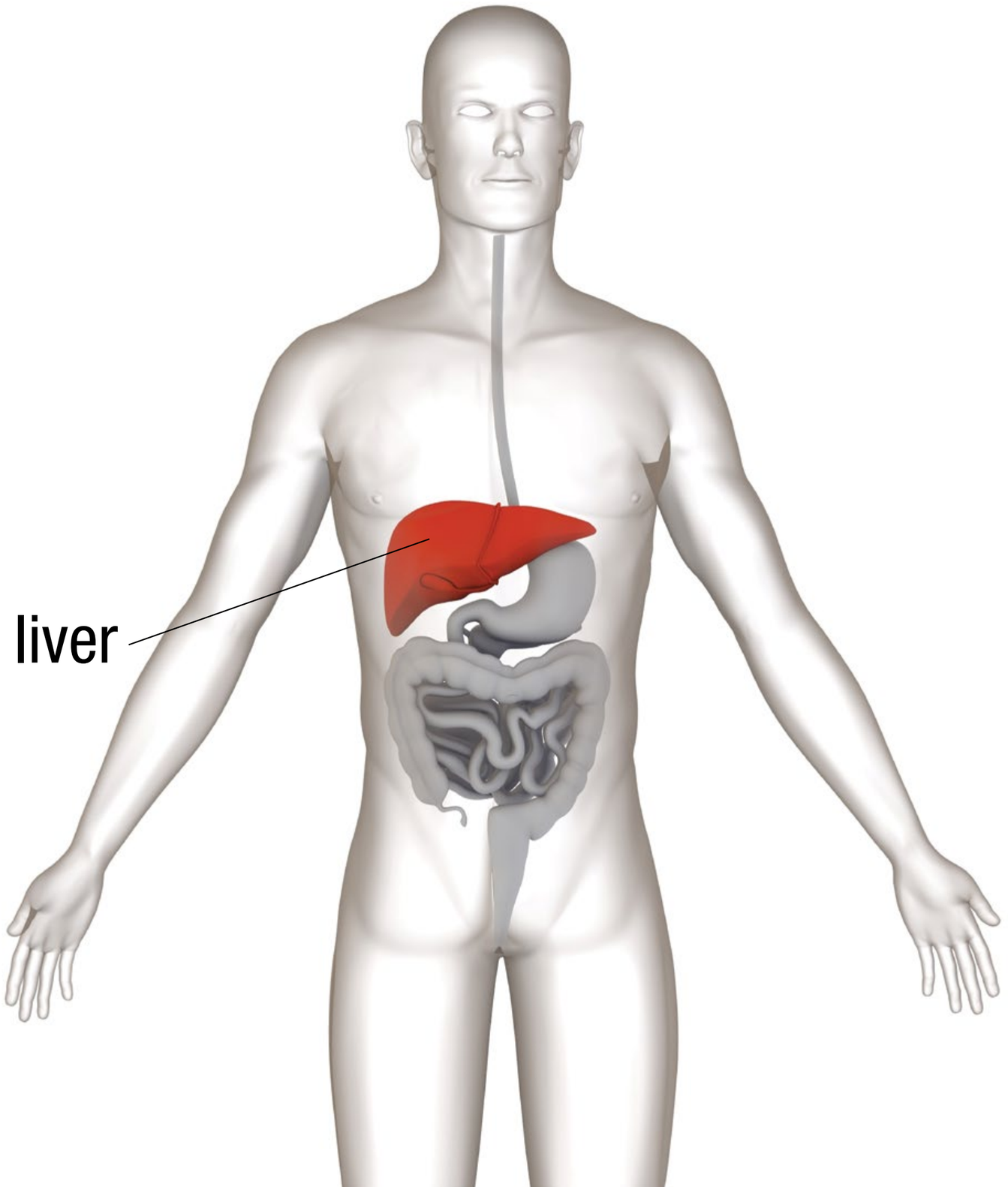
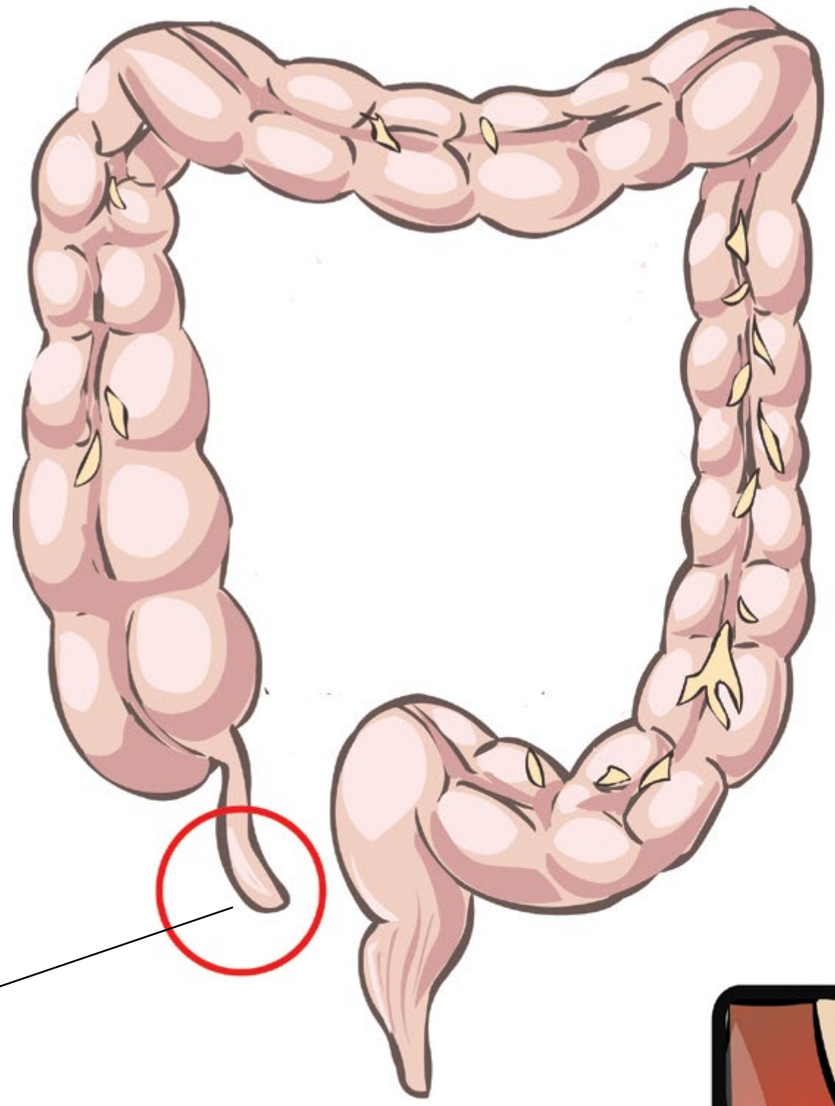

small intestine

cross-section of the small intestine




liver



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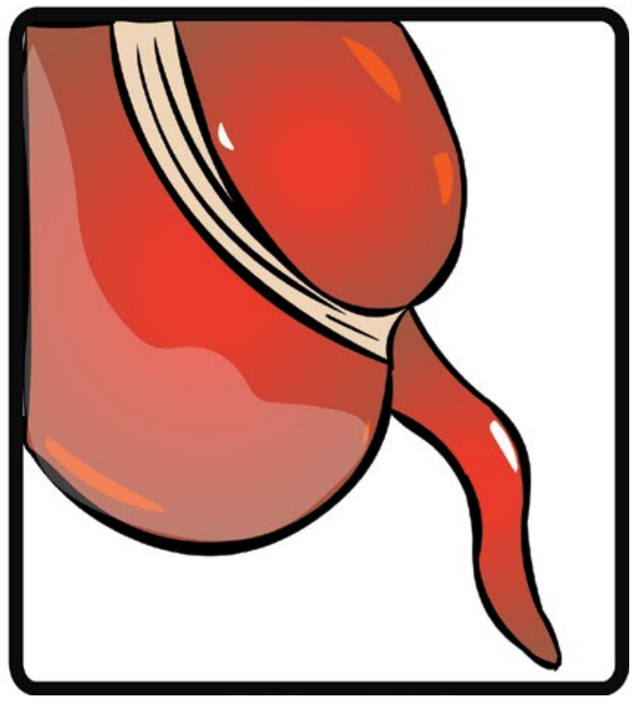

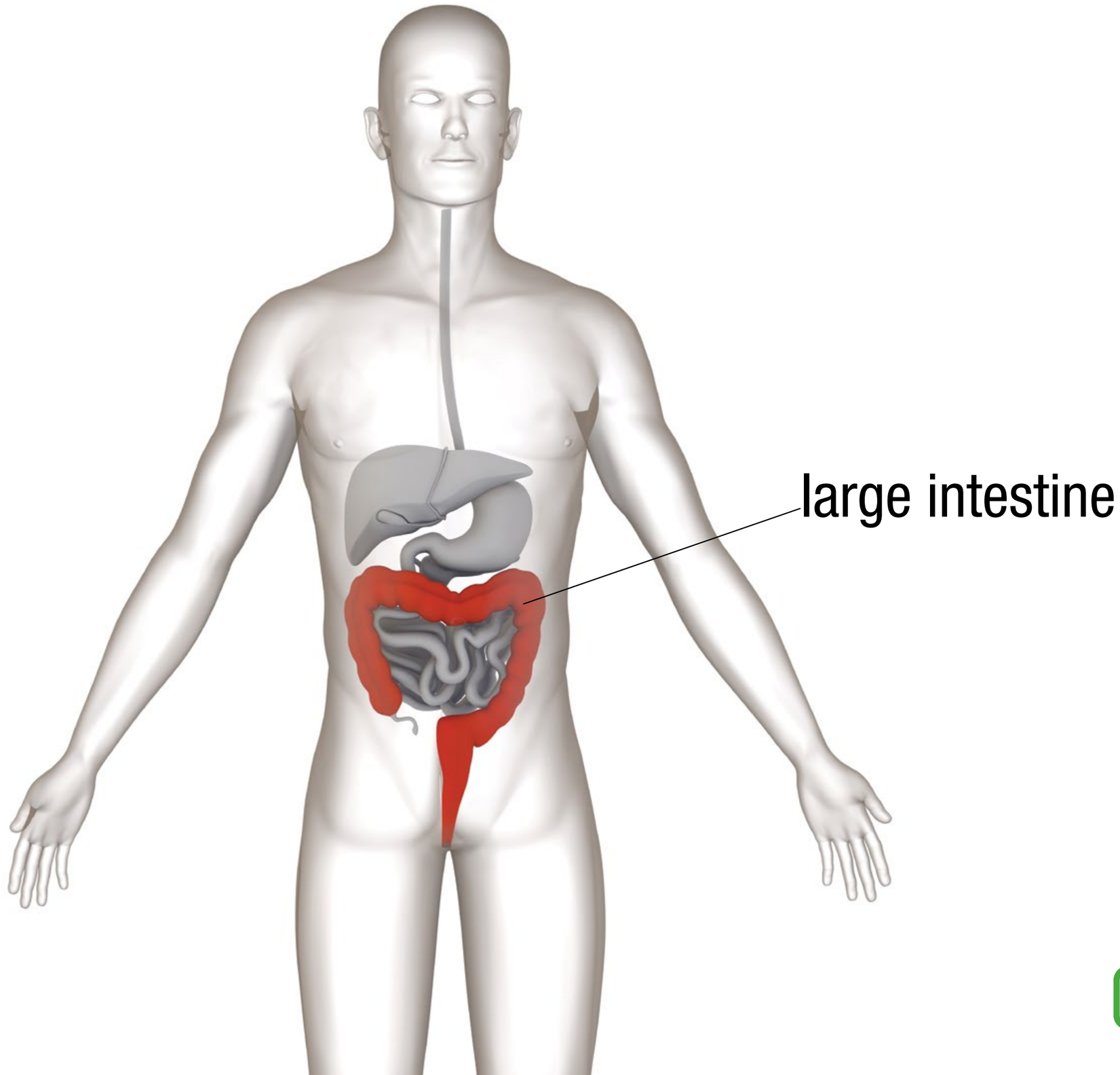

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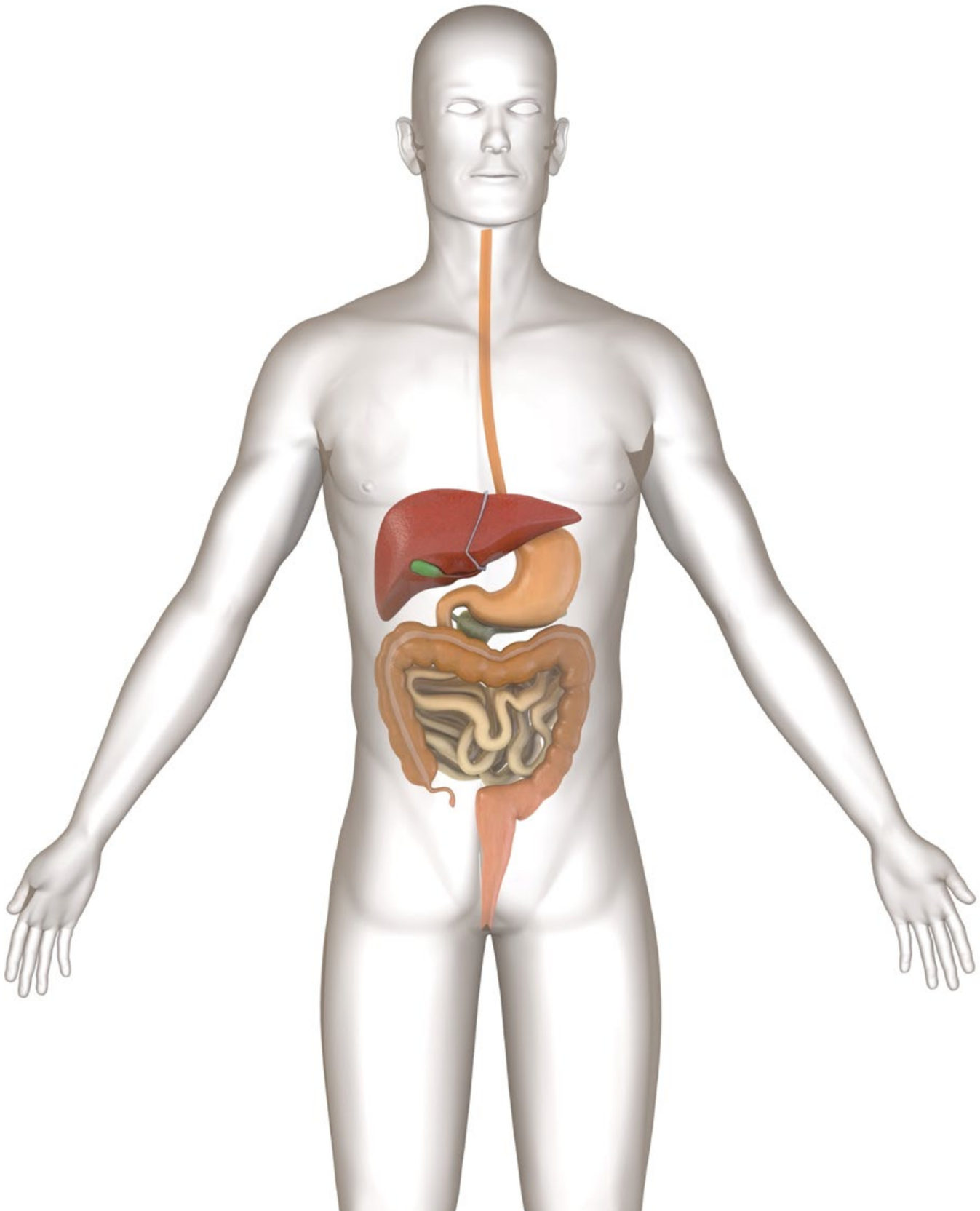

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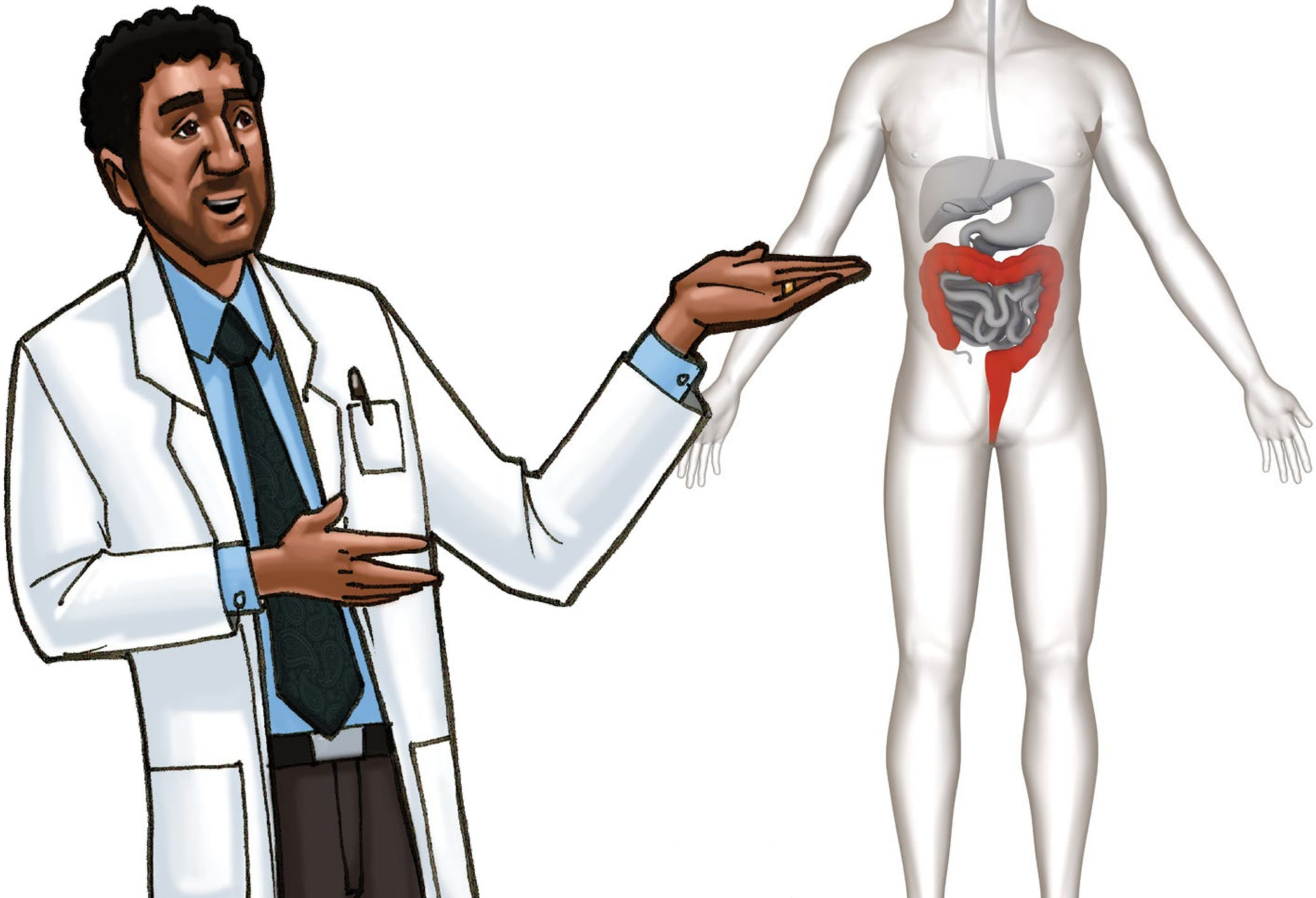

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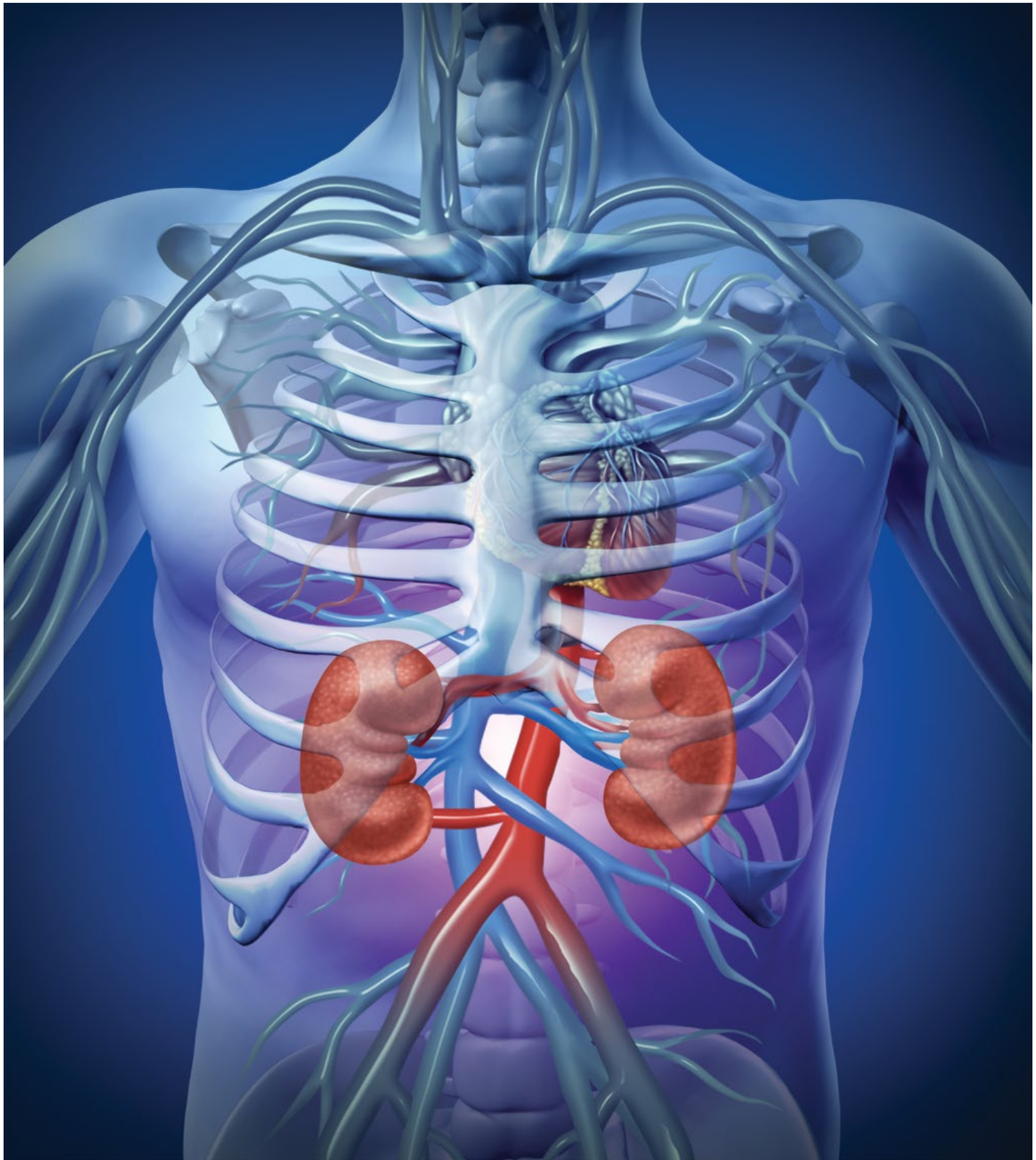

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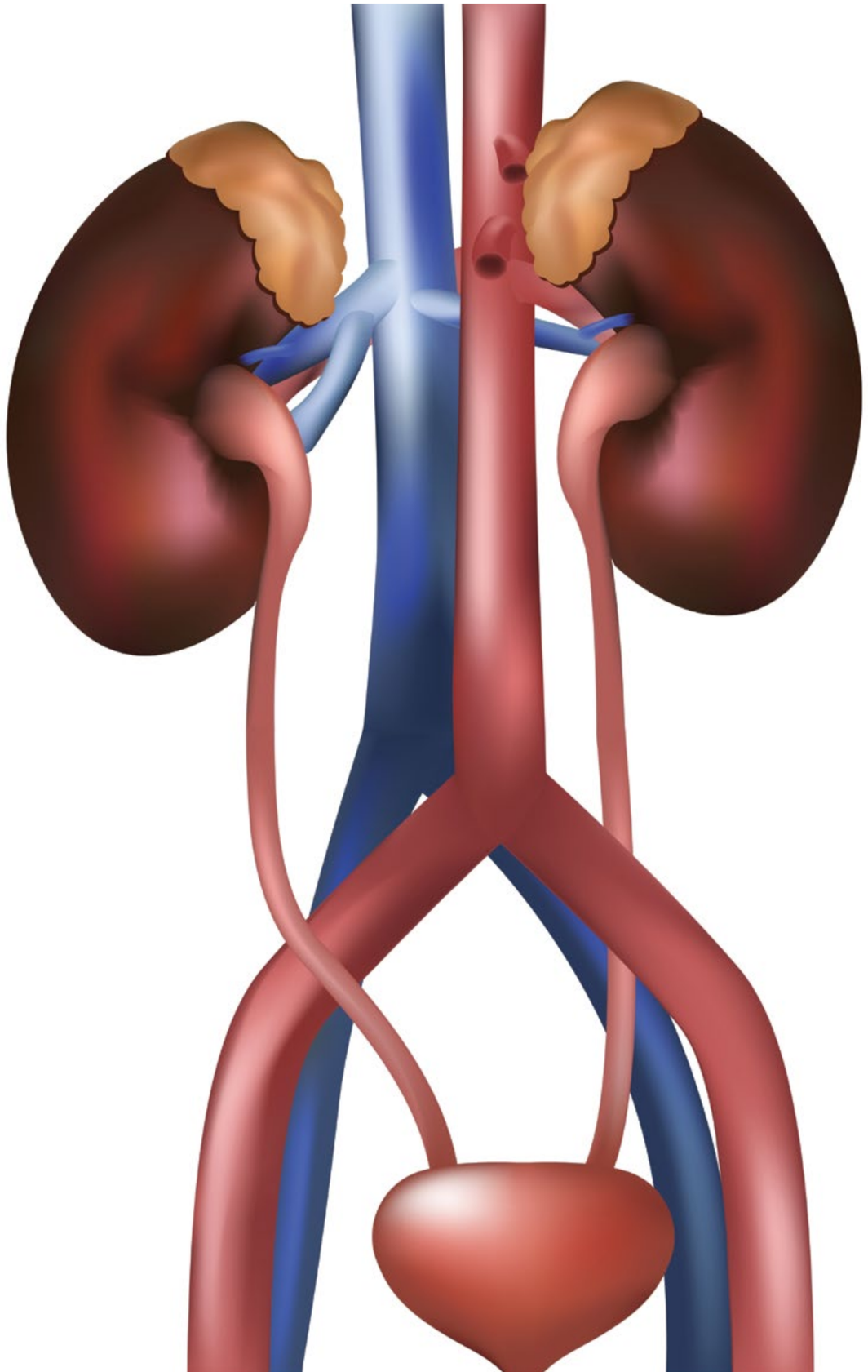
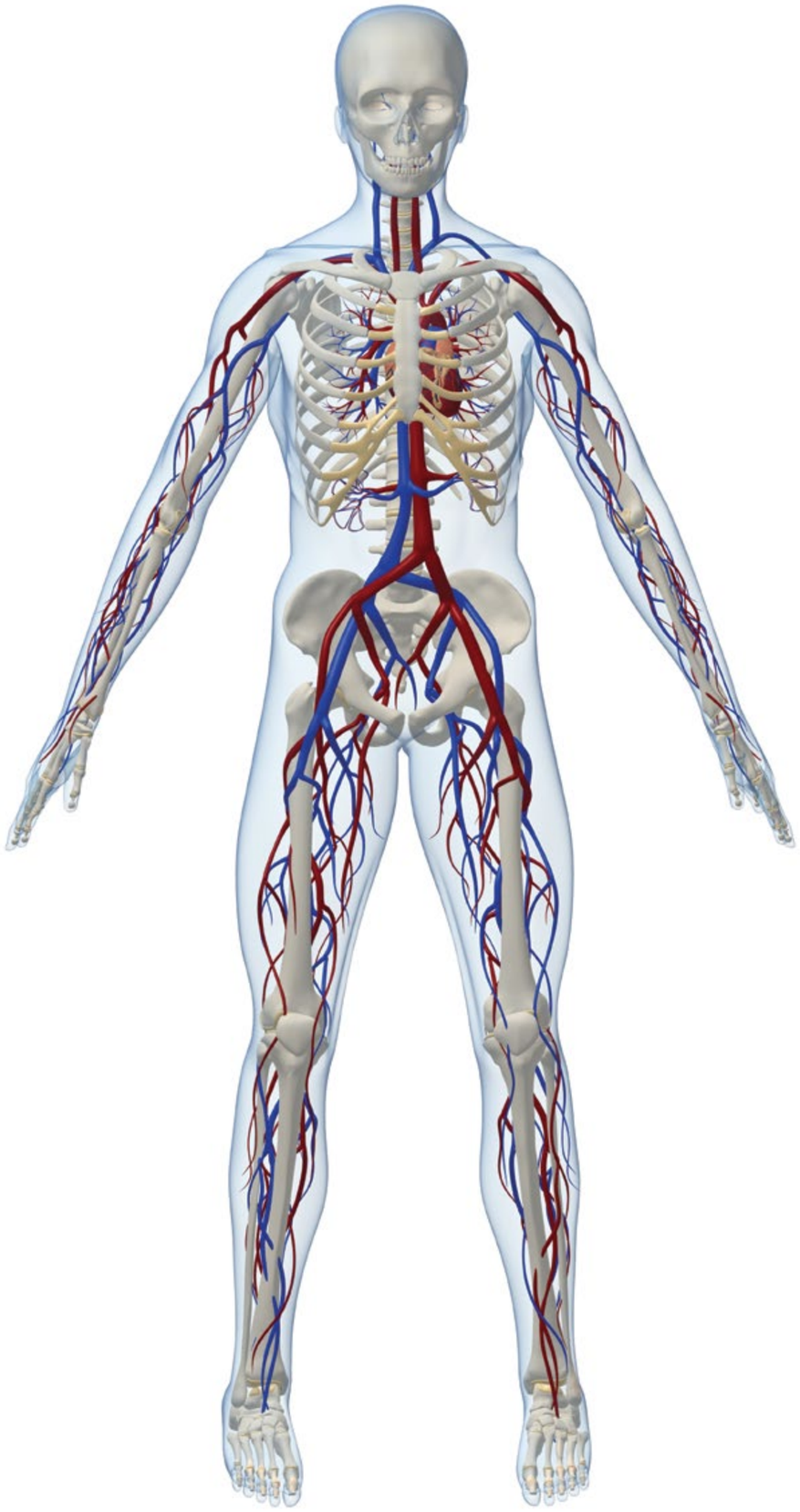
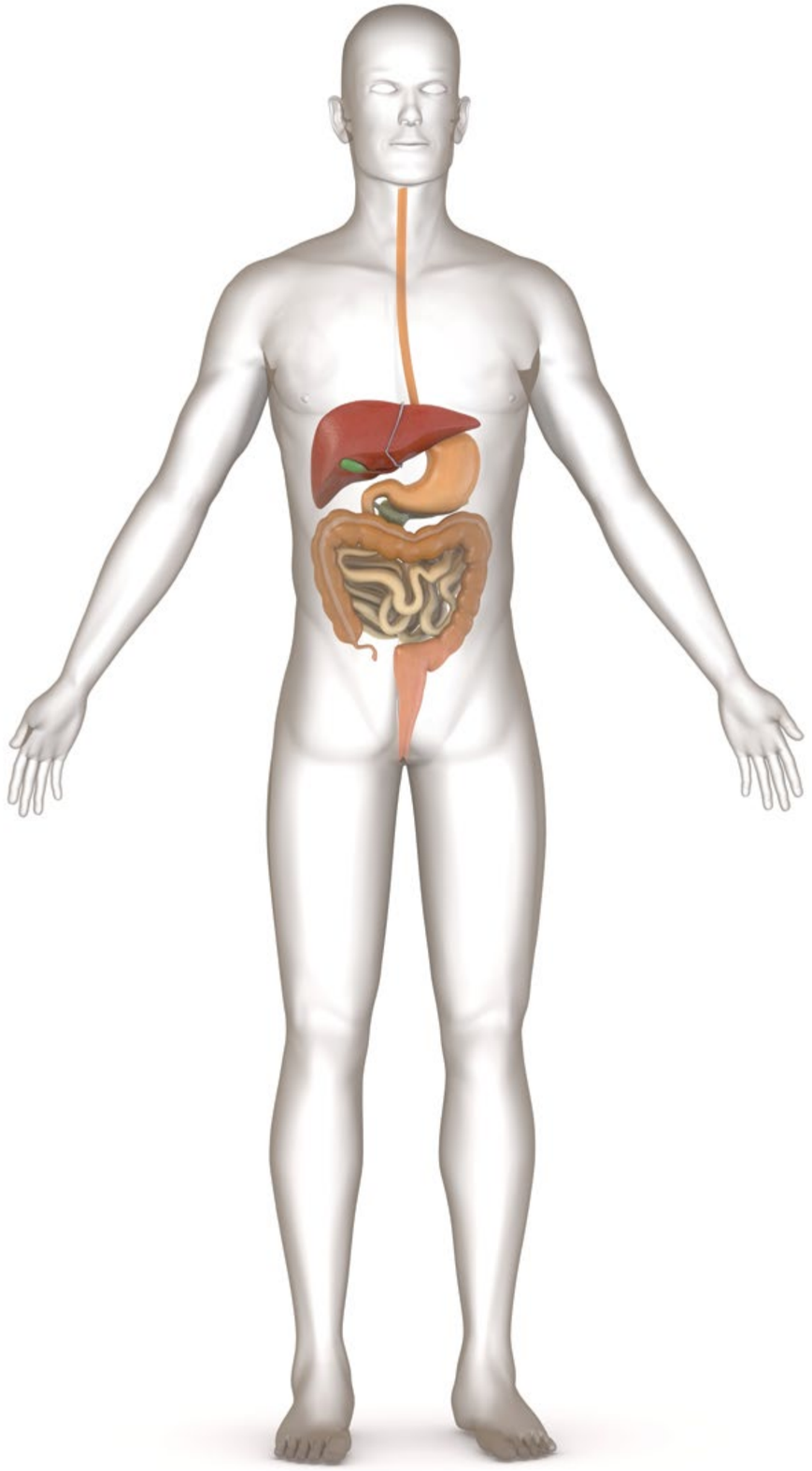
6A-4



6A-7

7A-1

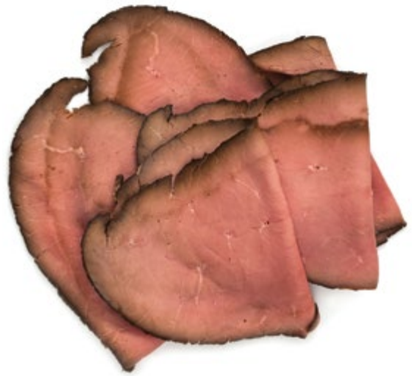




7A-2

7A-5

C

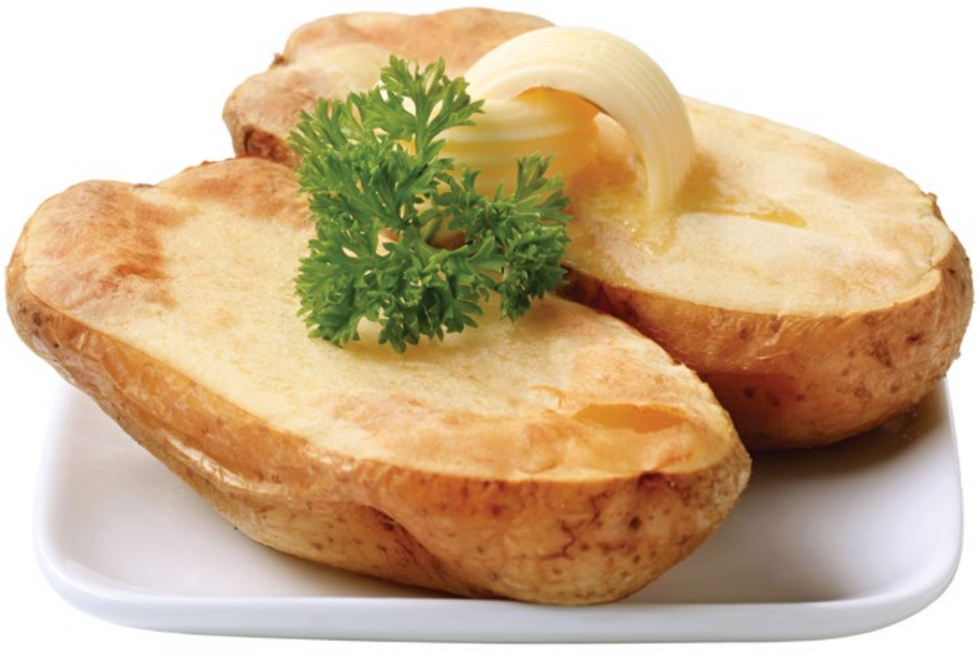


7A-12

8A-1

8A-2

8A-3



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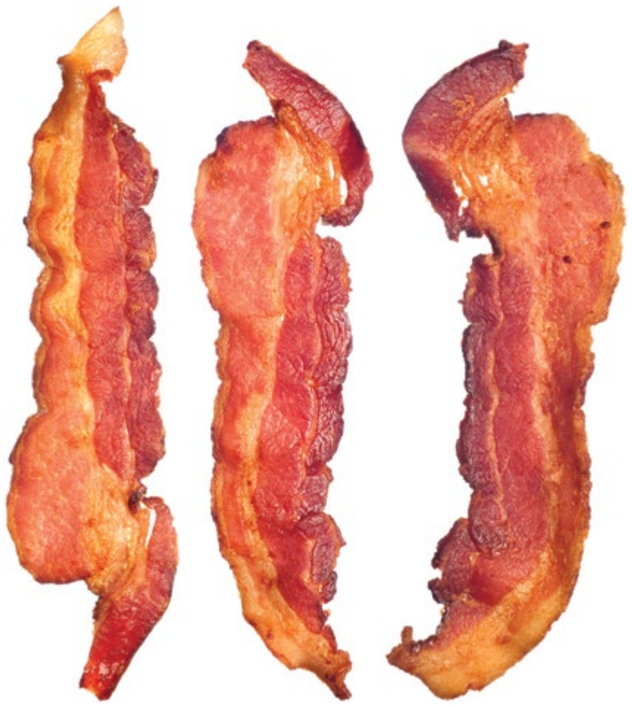
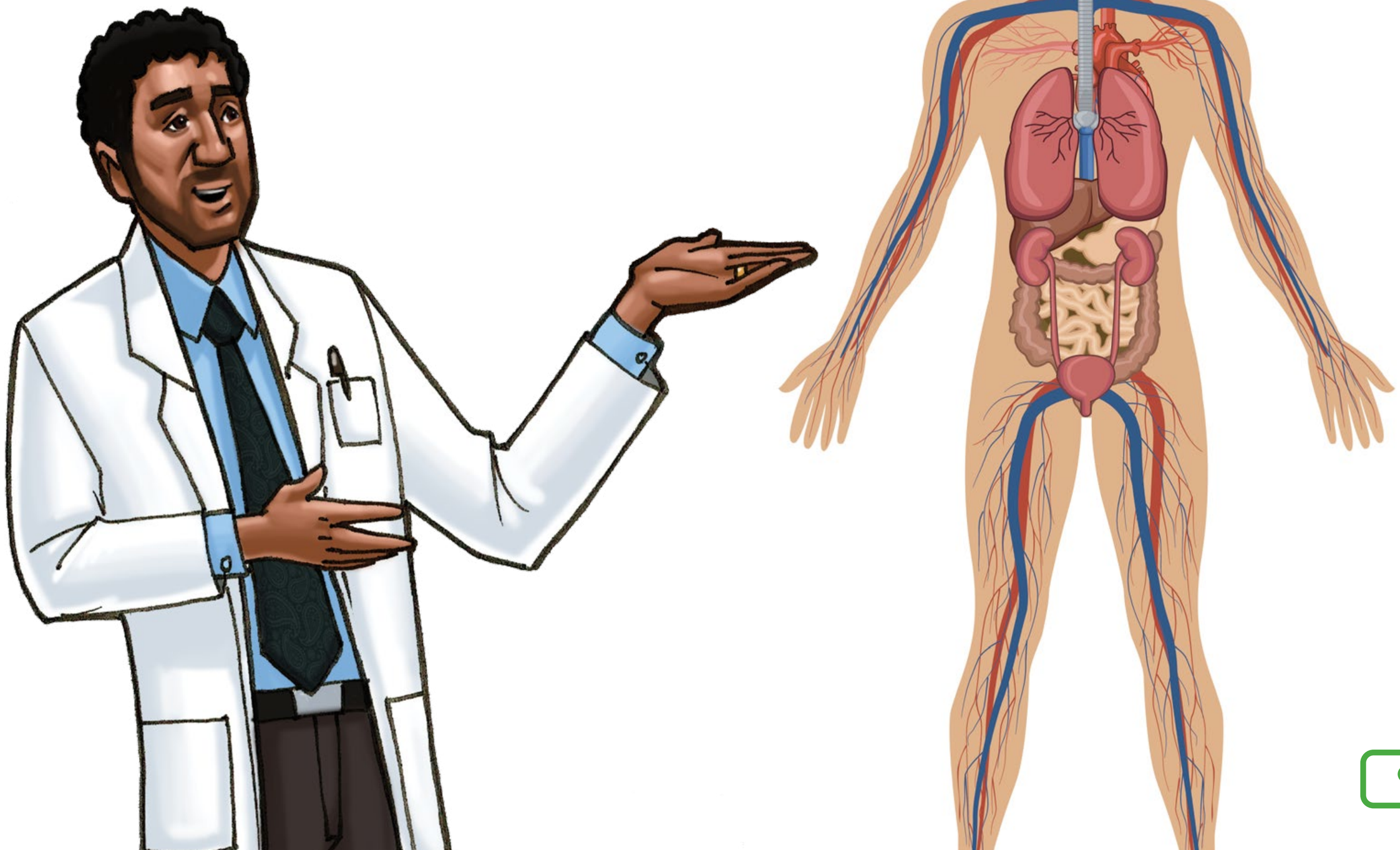


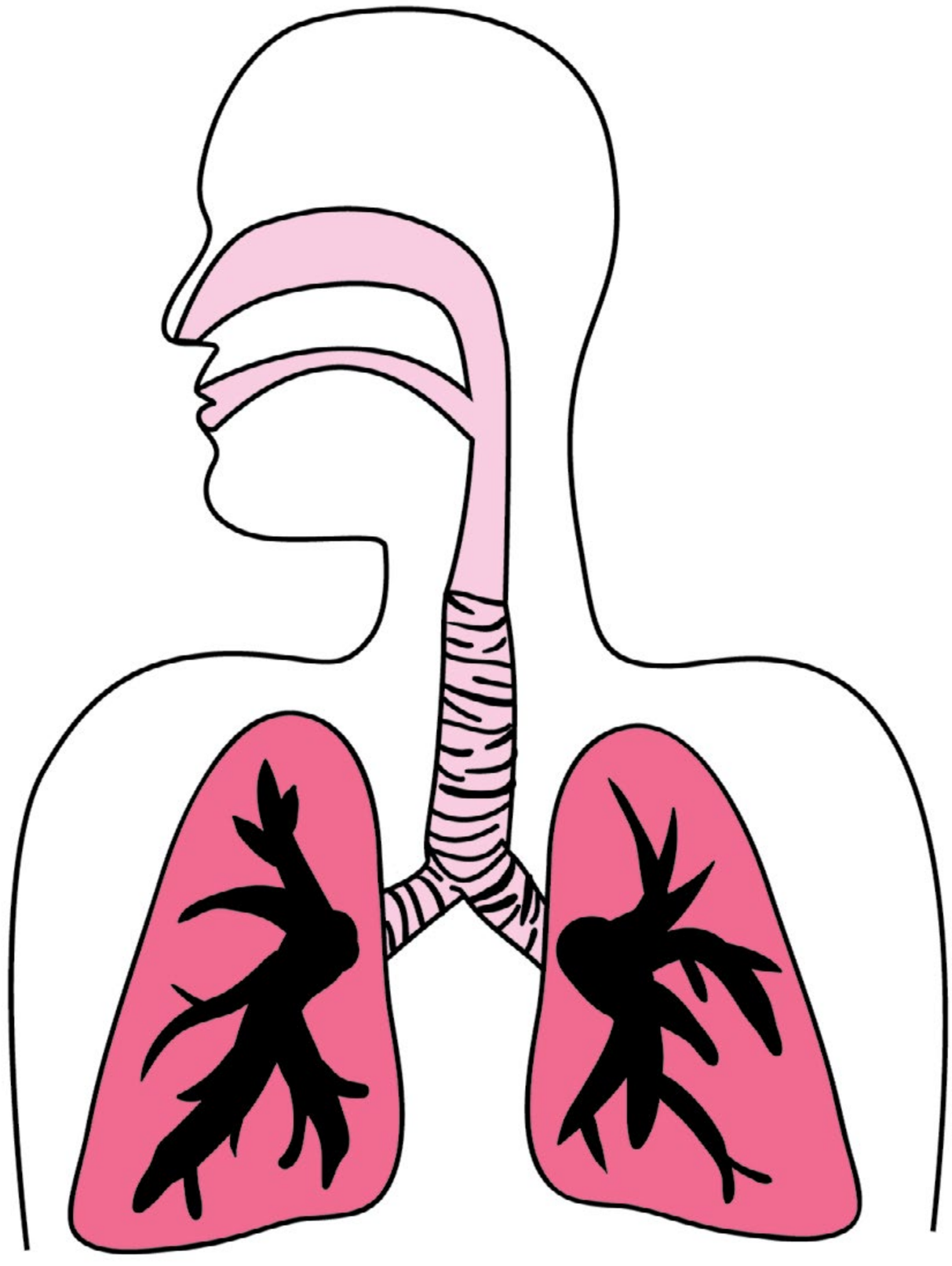
8A-8

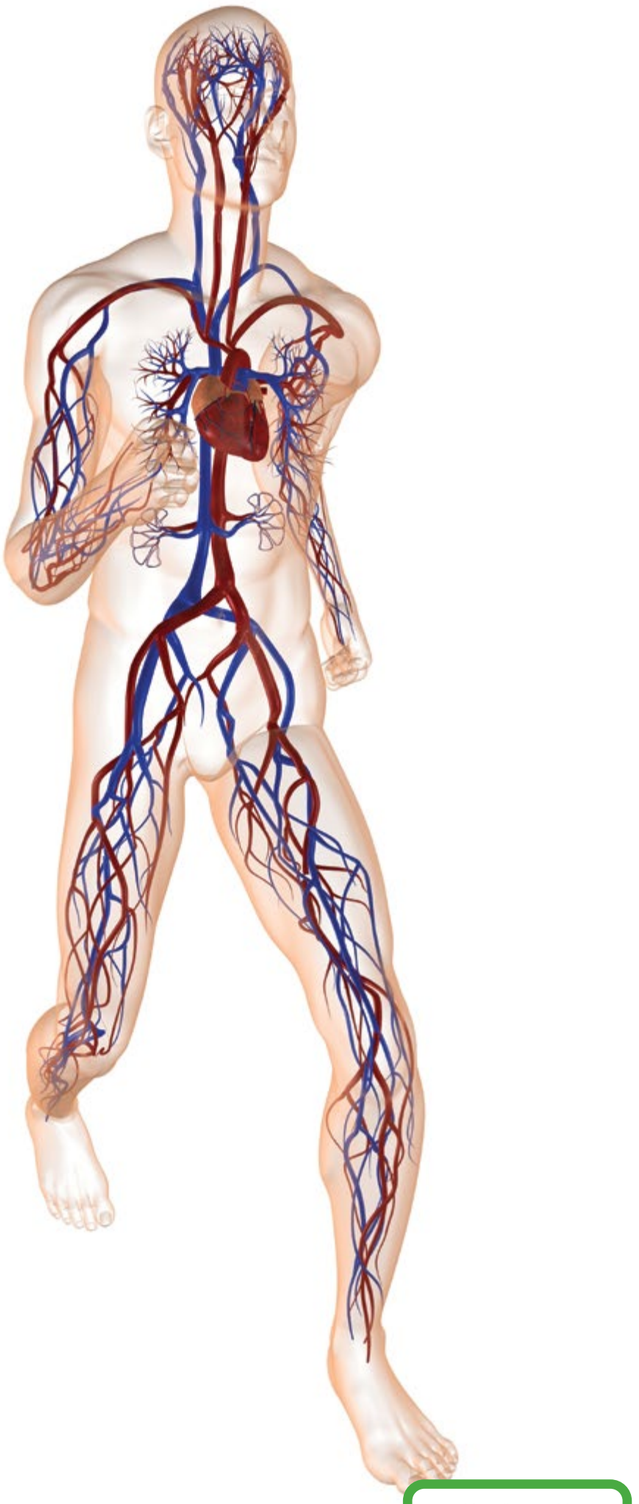

Chile Manzano
pickles
PEPINILLOS
79 ¢ LB
CHILE DE ARBOL
RED BELL PEPPER
CHILE MORRON ROJO
499 ¢ LB
99 LBS
CHILE CHILACA
199 ¢ LB
eggplant
BERENJENA
99 LBS
GUAJES VERDES
299 ¢ LB
HUAZONTLE
349 ¢ LB
NOPALES
EN BOLSA 24 OZ.
249 EA
EVERYDAY LOW PRICES!
BABY CARROTS
ZANAHORIA CHICA
99 EA

8A-10

8A-12

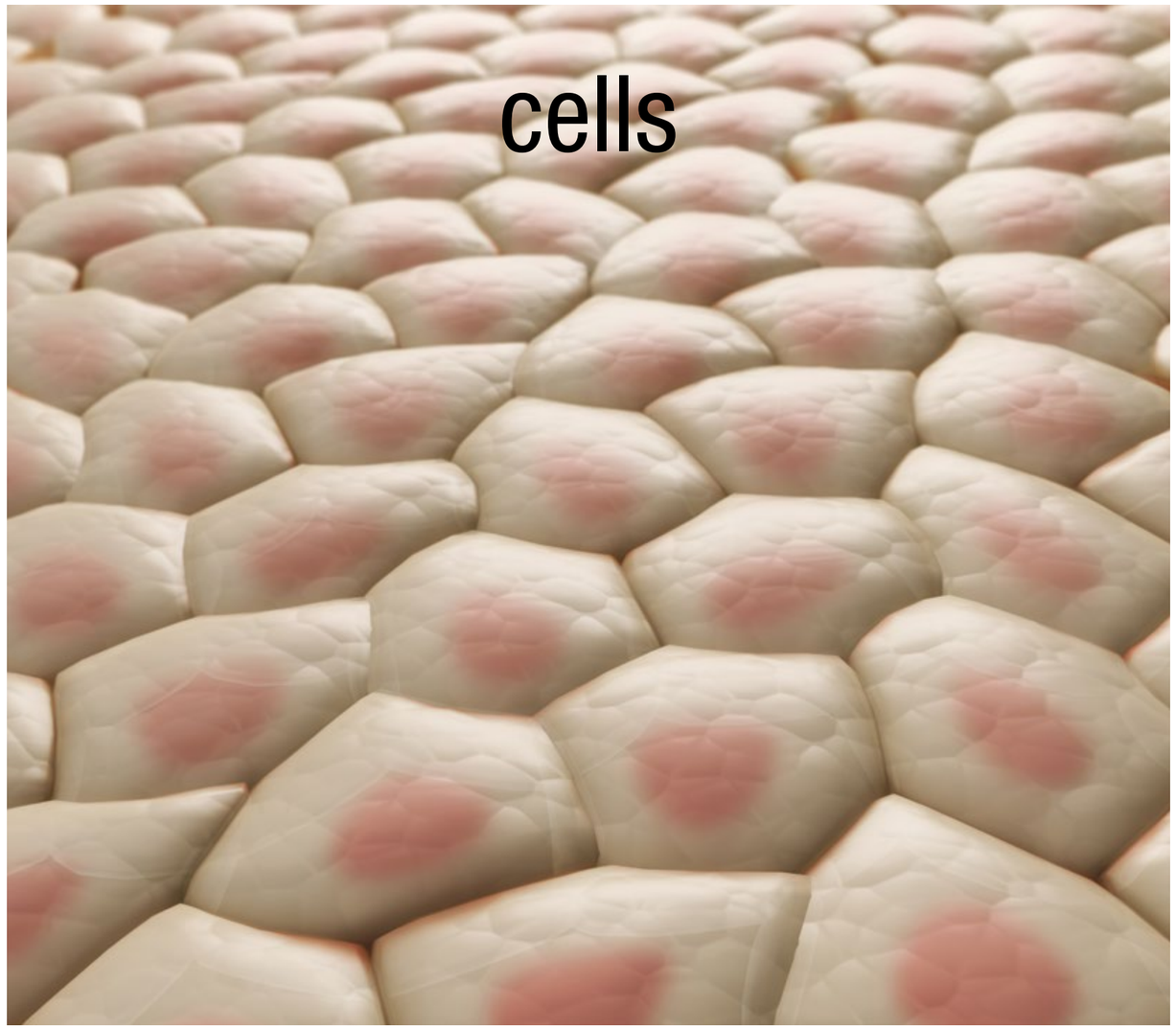






9A-3

cells



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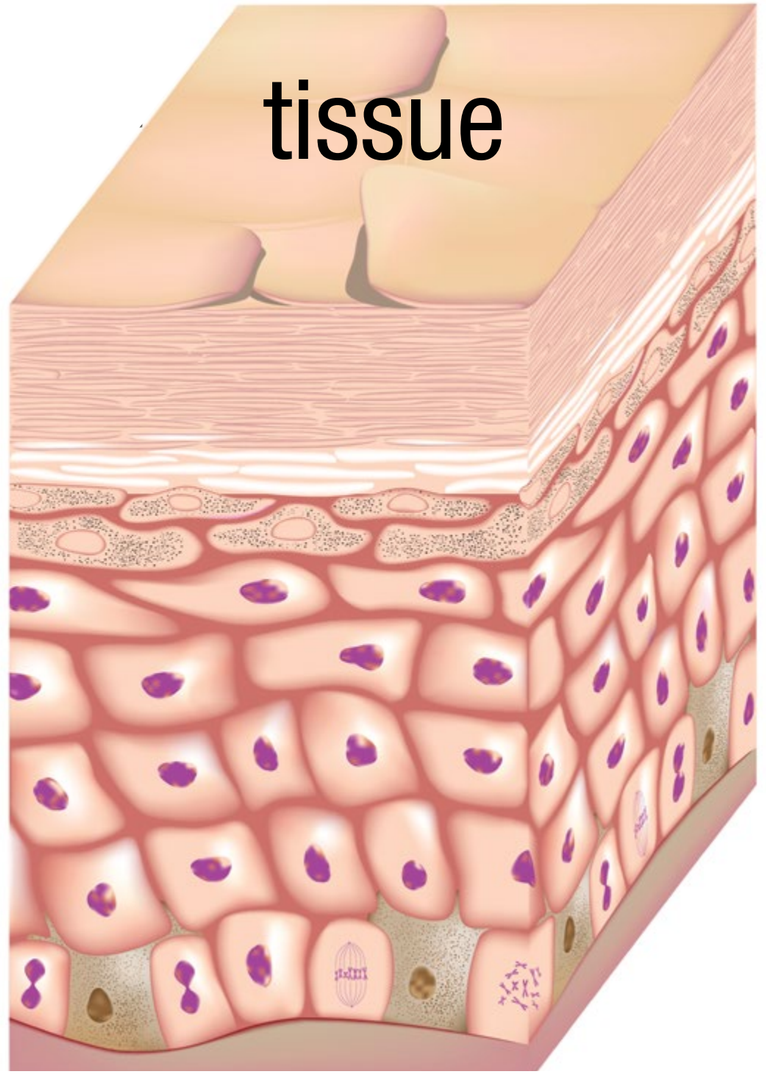

organ

9A-4

Grade 2 | Knowledge 9

The Human Body:
Building Blocks and Nutrition

Posters

Posters

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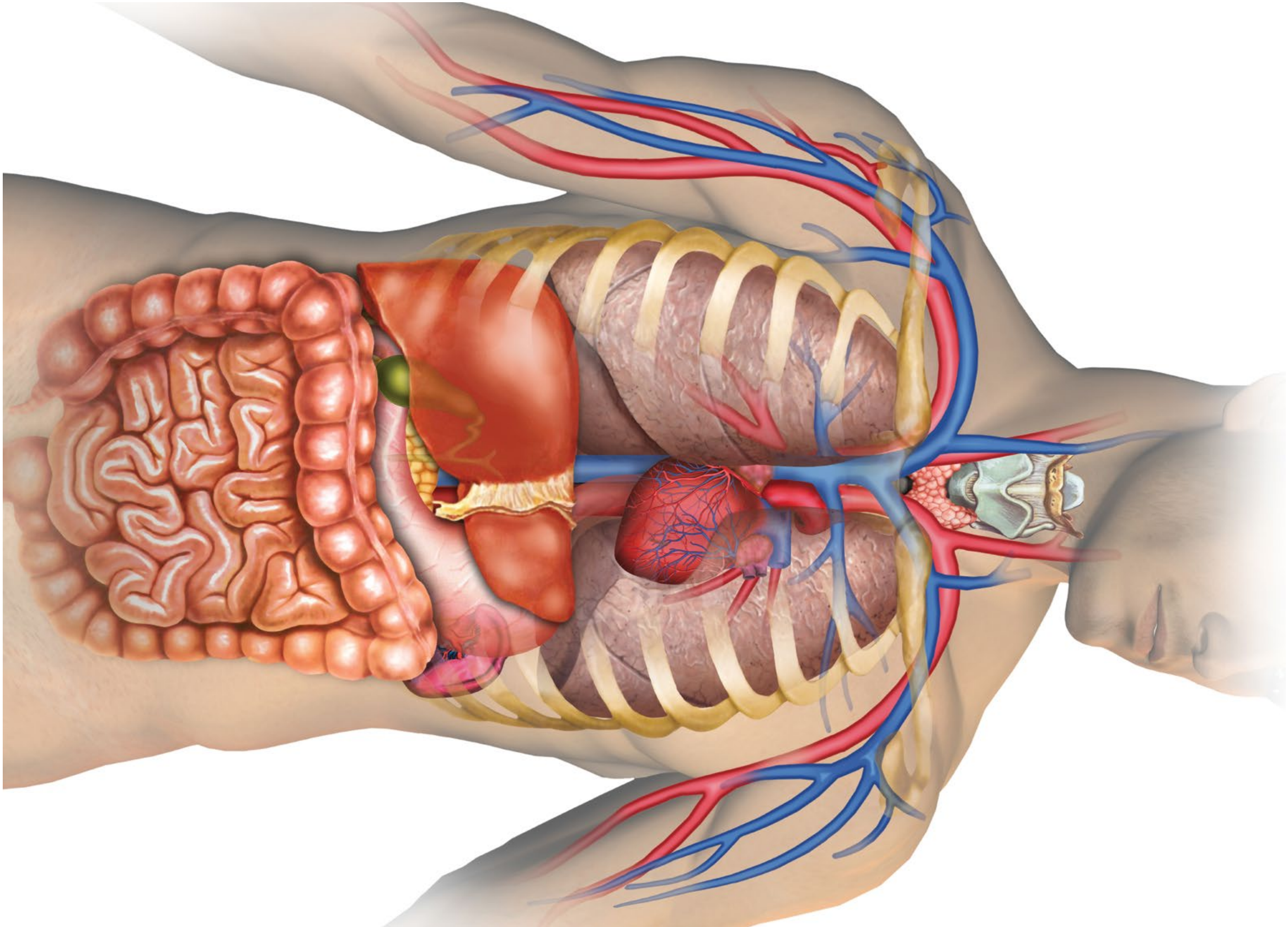
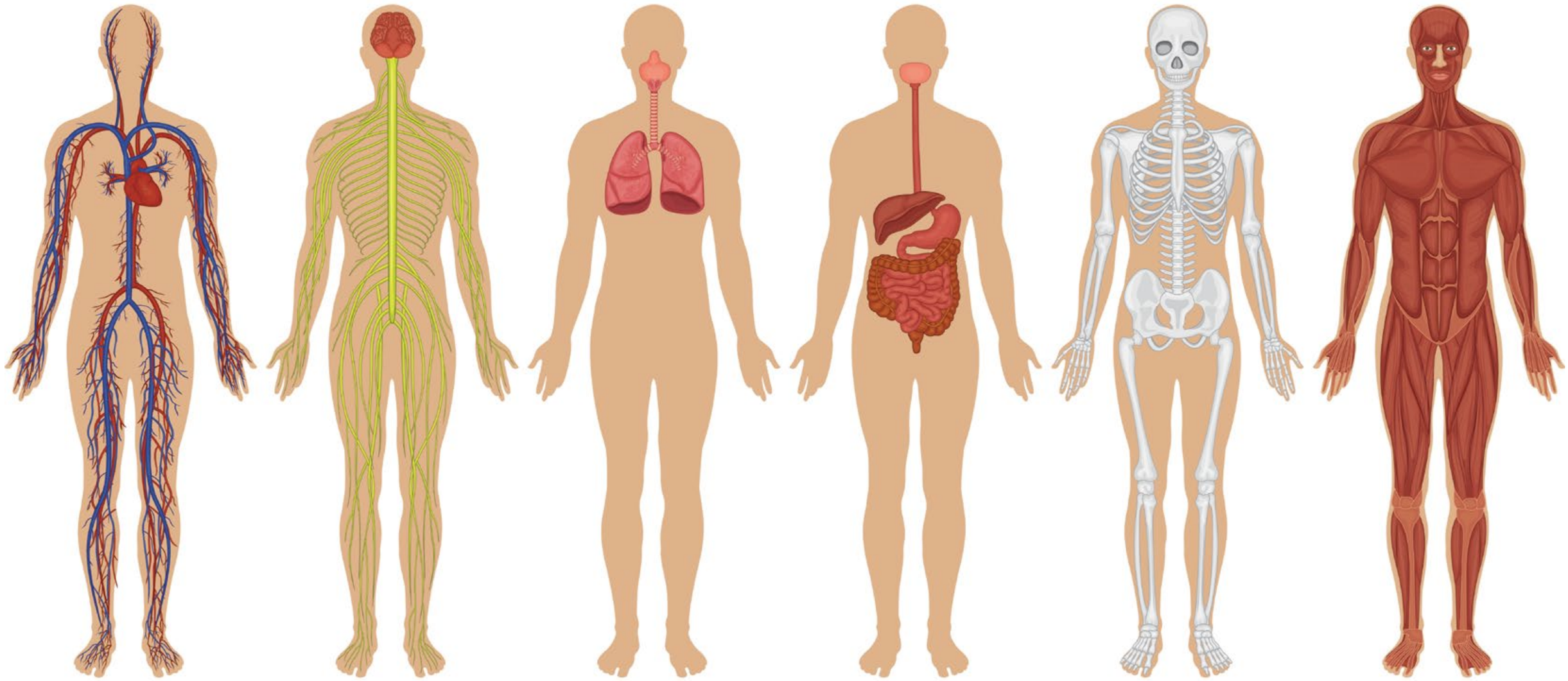


The Human Body: Building Blocks and Nutrition

Poster 1 of 7 : Chart of the Human Body

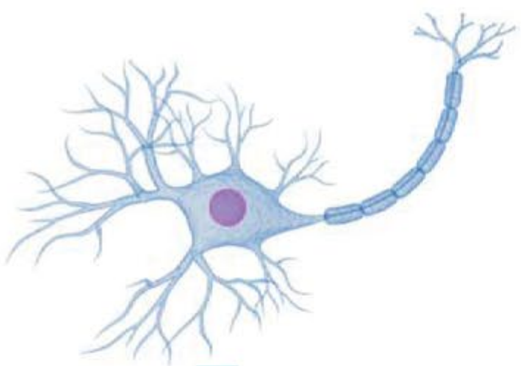


The Human Body: Building Blocks and Nutrition

Poster 2 of 7 : Human Body Systems

Cells

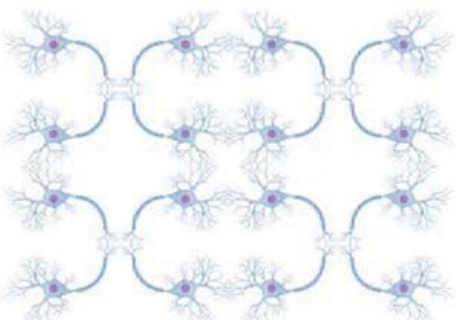
Nerve Cell



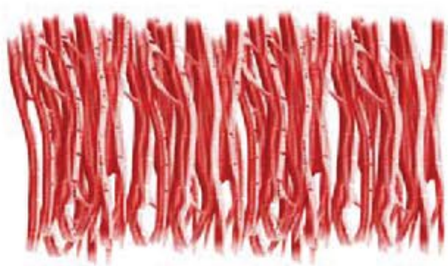
Muscle Cell

Tissues

Nerve Tissue

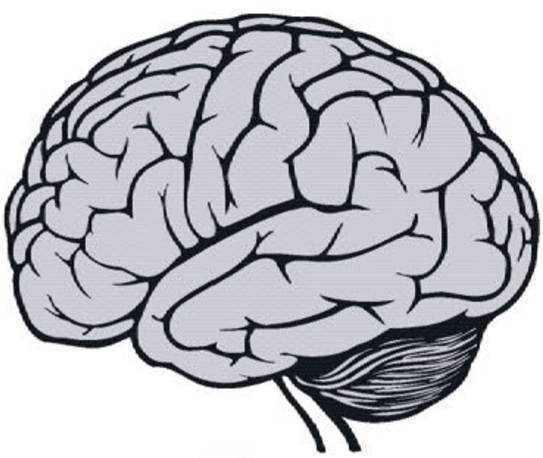


Muscle Tissue



Organs

Brain



Stomach

Systems

Nervous System

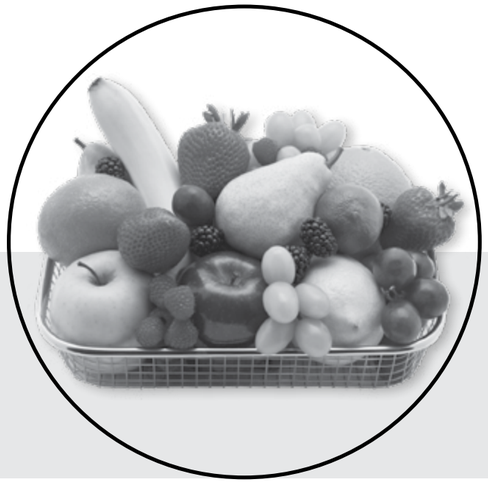
Digestive System

The Human Body: Building Blocks and Nutrition

Poster 3 of 7 : Cells, Tissues, Organs, Systems

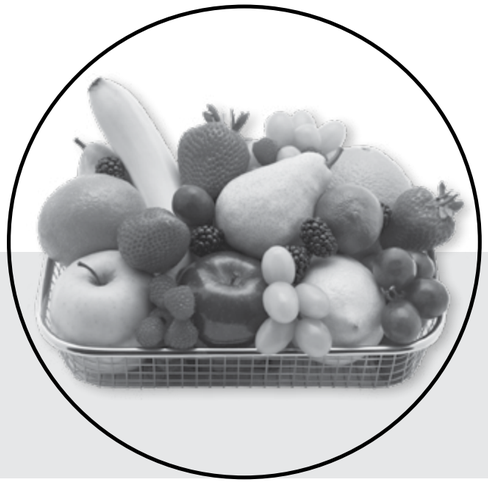
The Human Body: Building Blocks and Nutrition

Poster 4 of 7 : Carbohydrates



The Human Body: Building Blocks and Nutrition

Poster 5 of 7 : Proteins



The Human Body: Building Blocks and Nutrition

Poster 6 of 7 : Fats

The Human Body: Building Blocks and Nutrition

Poster 7 of 7 : Water

Grade 2 | Knowledge 9

The Human Body:
Building Blocks and Nutrition

Multiple Meaning Word Posters

Multiple Meaning Word Posters

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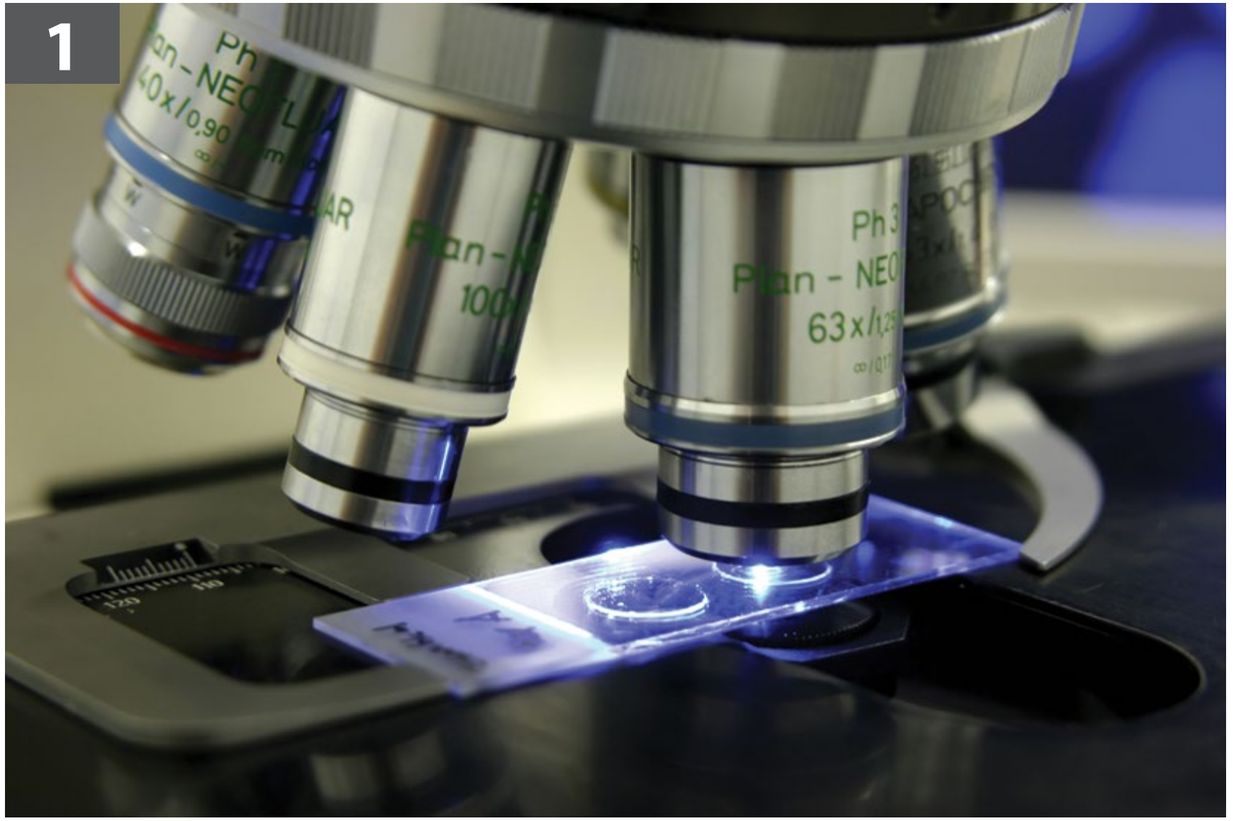
1



2

3

Slides (Poster 1M)

1. **small, thin, and usually rectangular pieces of glass that hold an object to be looked at under a microscope** *(noun)*
2. **structures with a slippery surface that children slide down** *(noun)*
3. **moves smoothly along a surface** *(verb)*

The Human Body: Building Blocks and Nutrition | Multiple Meaning Word Poster 1 of 4

1

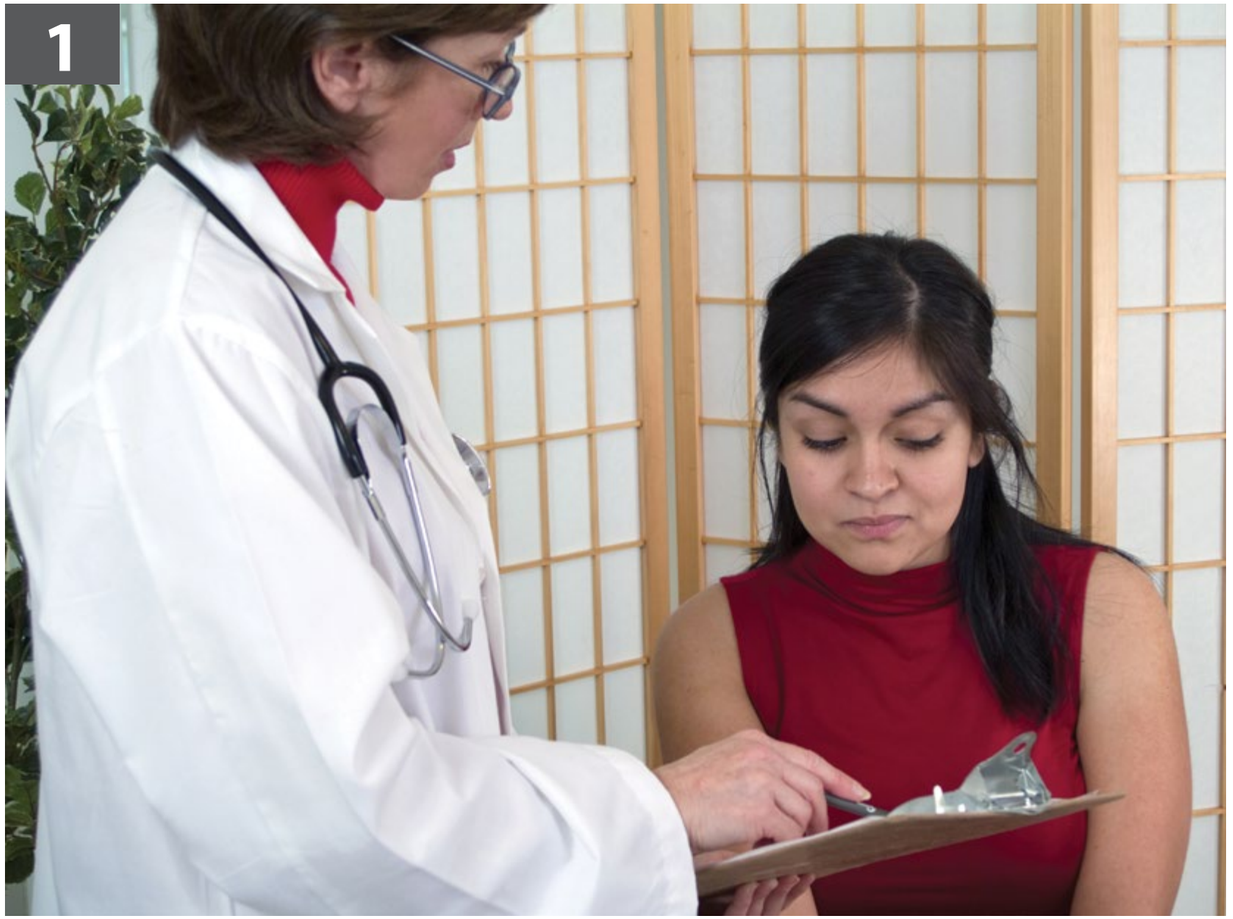
2

Tissue (Poster 2M)

1. **a group of cells that perform the same job** ***(noun)***
2. **a piece of soft and very thin paper that is used especially for cleaning** ***(noun)***

The Human Body: Building Blocks and Nutrition | Multiple Meaning Word Poster 2 of 4

1



2

3

Check (Poster 3M)

1. **to look at carefully** ***(verb)***
2. **a mark ✓ that is used to show that something (such as an item on a list) has been noted, done, etc.** ***(noun)***
3. **a pattern of squares in different colors** ***(noun)***

The Human Body: Building Blocks and Nutrition | Multiple Meaning Word Poster 3 of 4

1

2

3

Skip (Poster 4M)

1. **to not do something usually done** ***(verb)***
2. **to move forward in a light or playful way by taking short, quick steps and jumps** ***(verb)***
3. **to throw (a flat stone) along the surface of water so that it bounces** ***(verb)***

The Human Body: Building Blocks and Nutrition | Multiple Meaning Word Poster 4 of 4

Amplify.
TEXAS
ELEMENTARY LITERACY PROGRAM

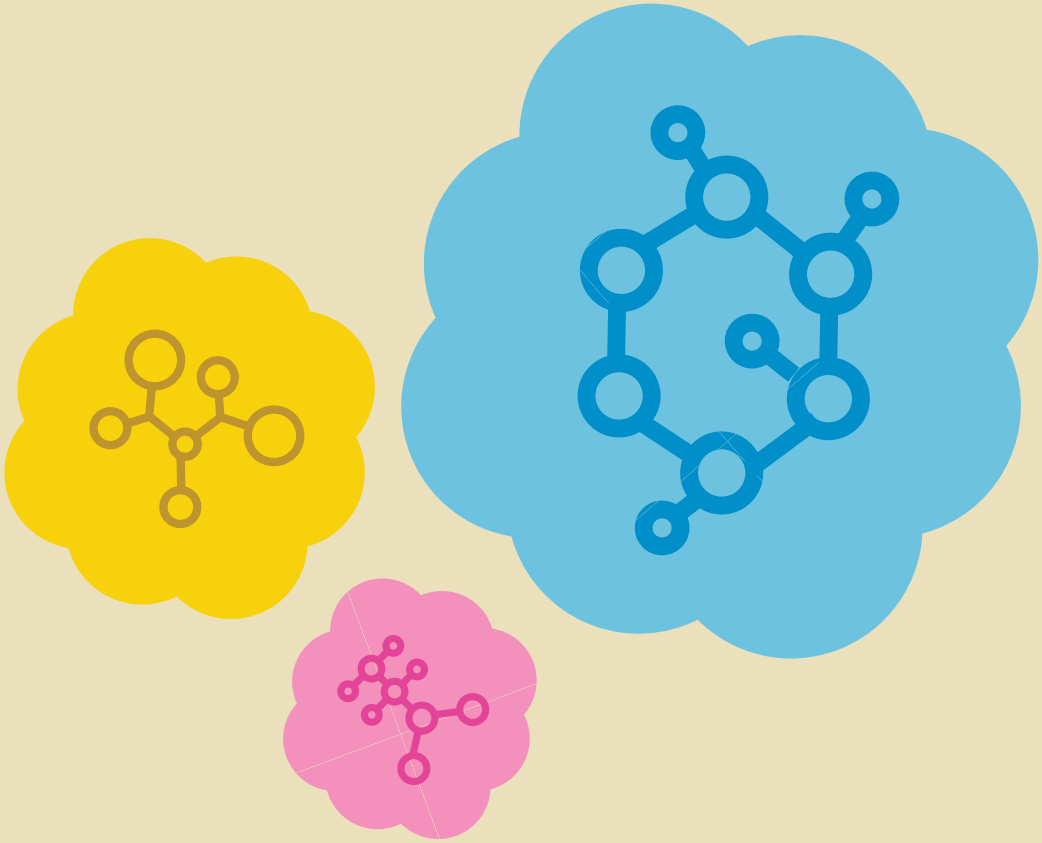
Grade 2 | **Knowledge 9** | Flip Book

The Human Body: Building Blocks and Nutrition

ISBN 9781643838403

Amplify. TEXAS
ELEMENTARY LITERACY PROGRAM

ENGLISH



Grade 2

Knowledge 9 | Image Cards

The Human Body: Building Blocks and Nutrition

ISBN 9781643838236

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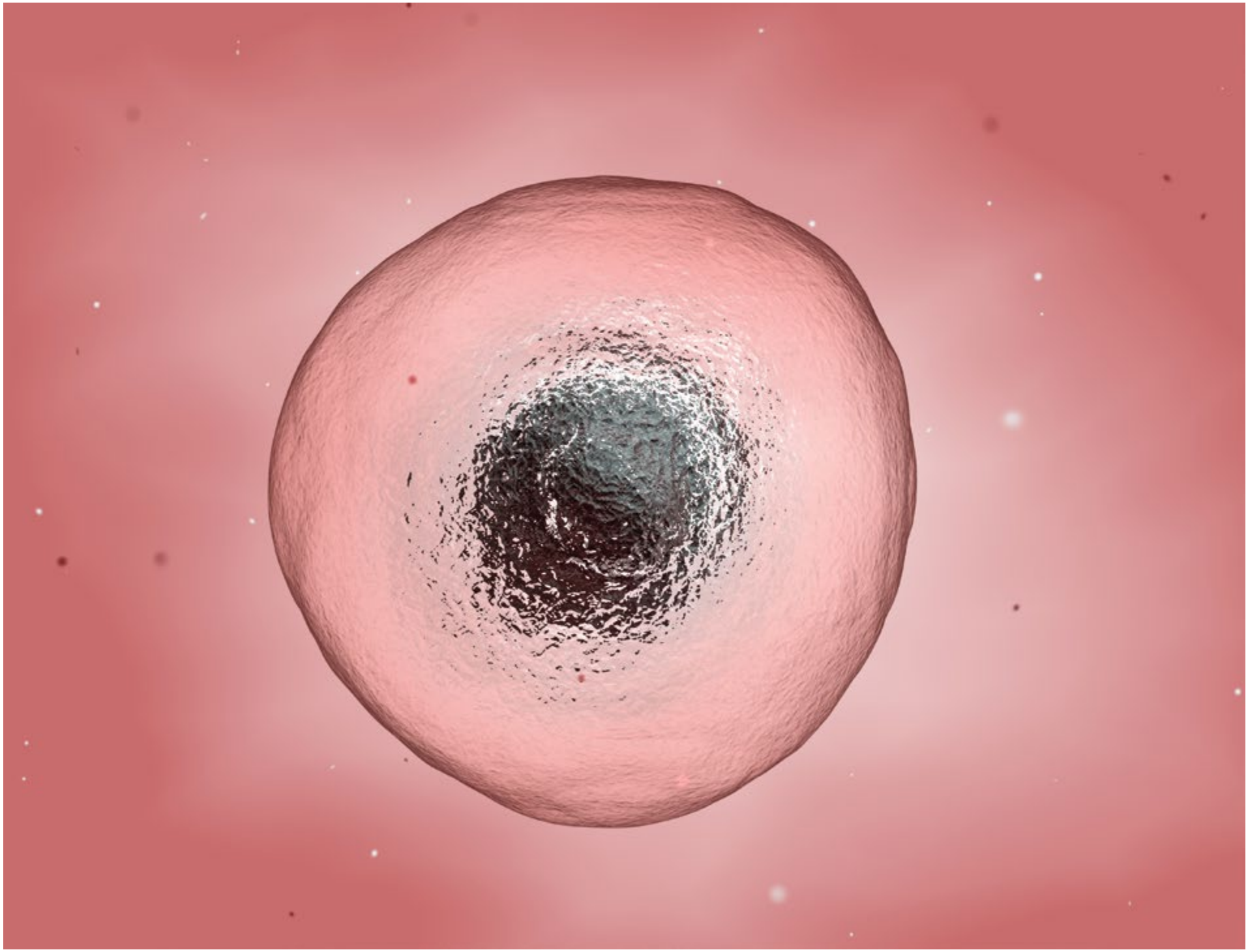
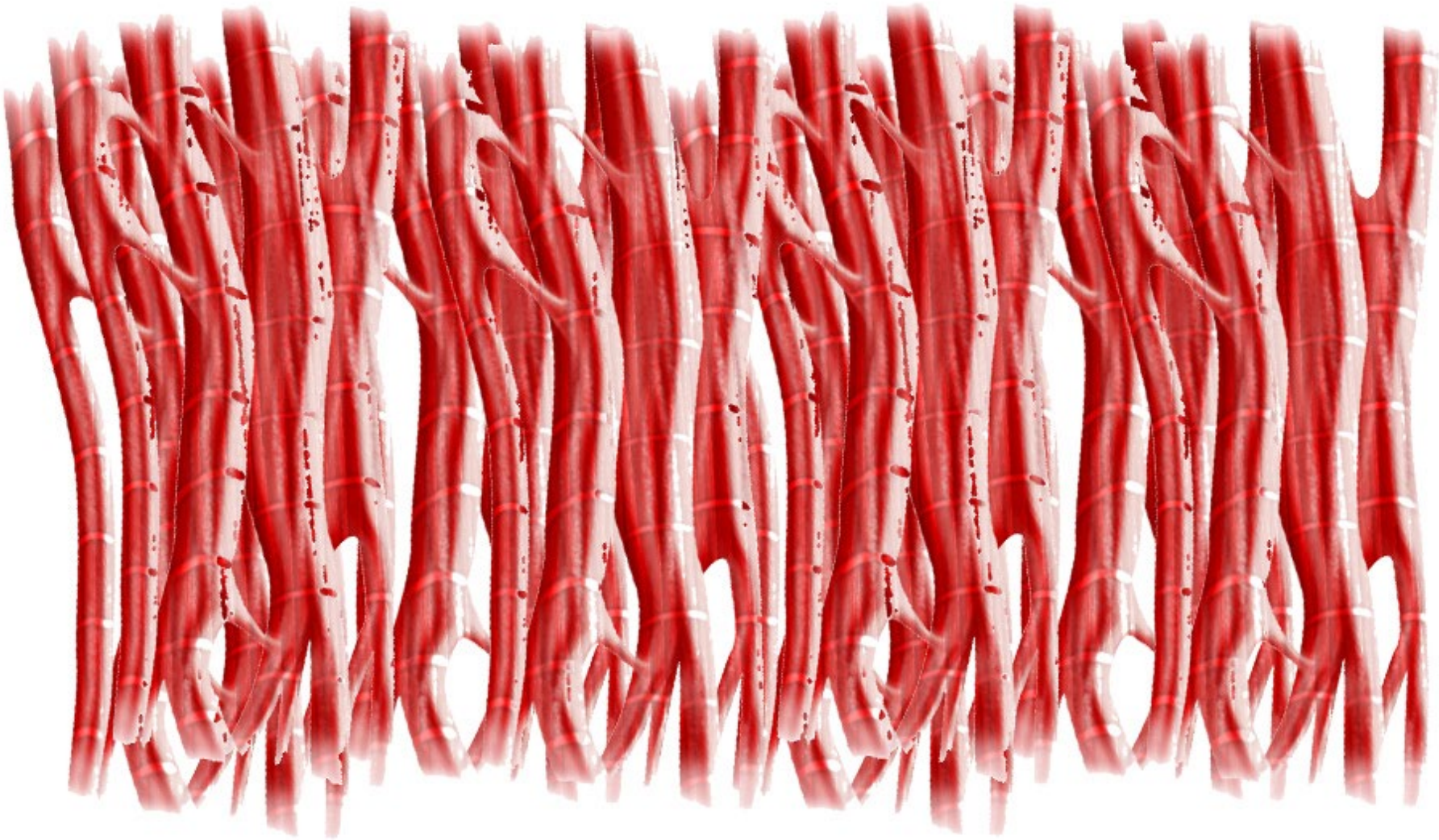
The Human Body: Building Blocks and Nutrition 1

The Human Body: Building Blocks and Nutrition 2

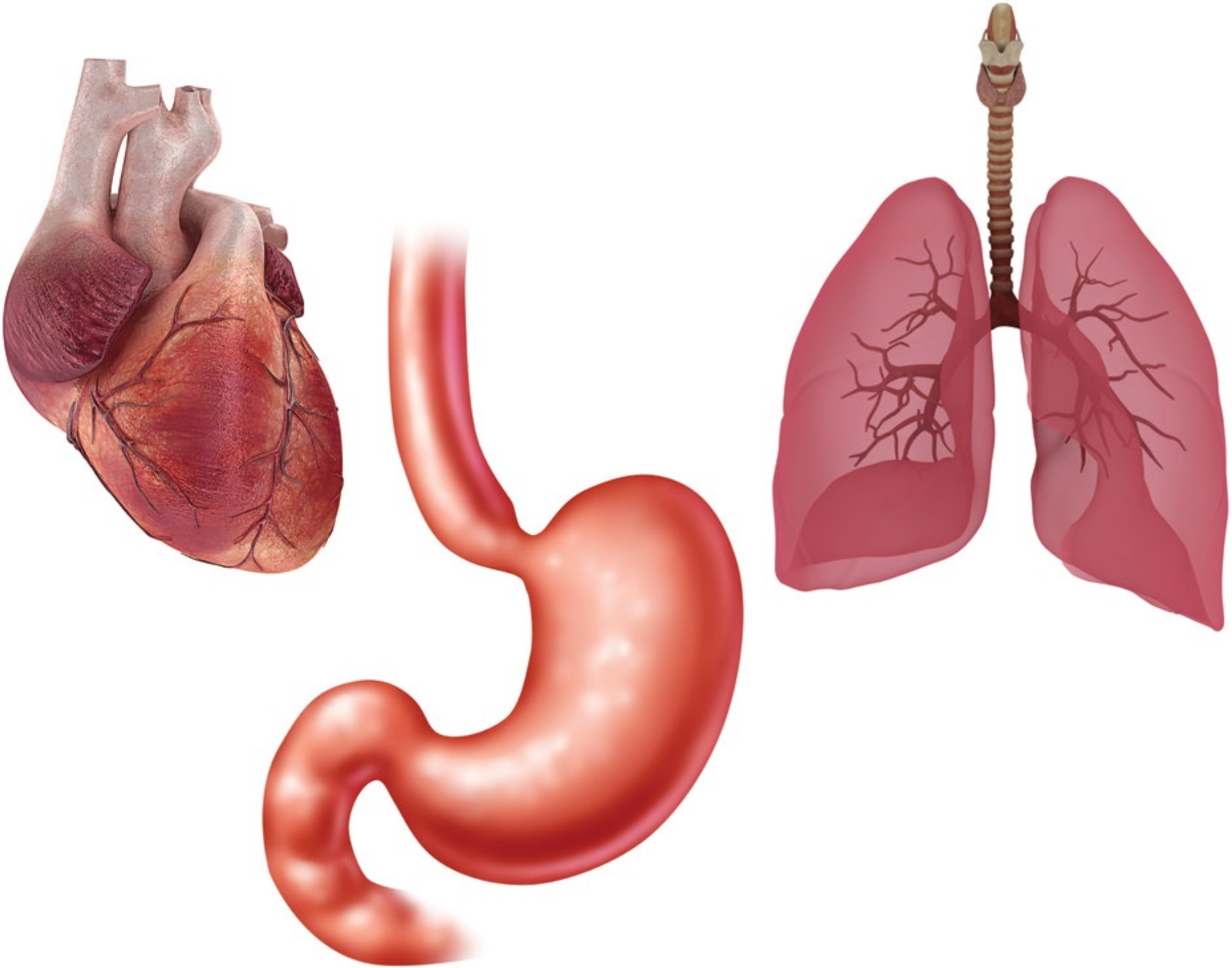
The Human Body: Building Blocks and Nutrition 3



The Human Body: Building Blocks and Nutrition 4



The Human Body: Building Blocks and Nutrition 5



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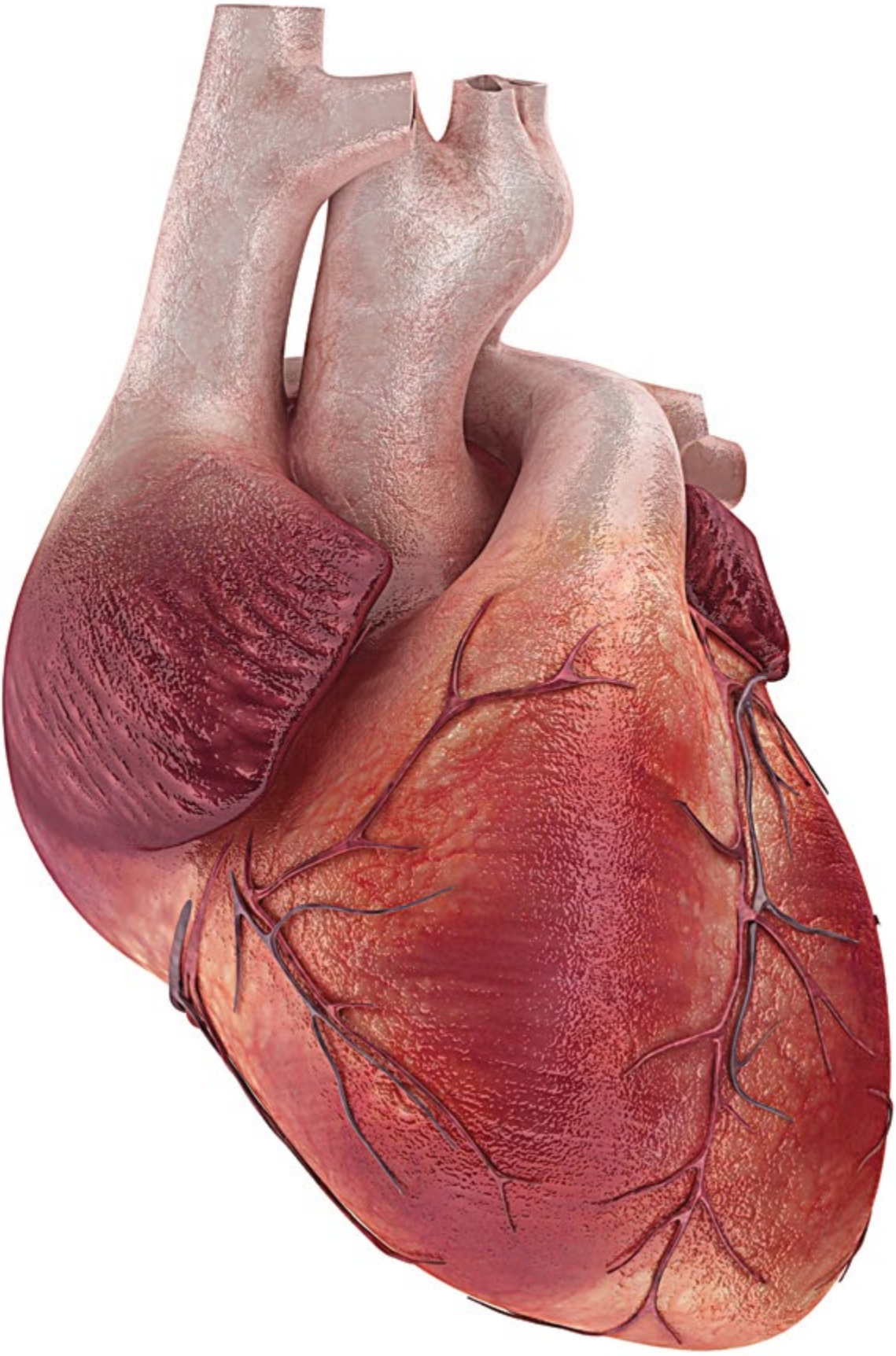
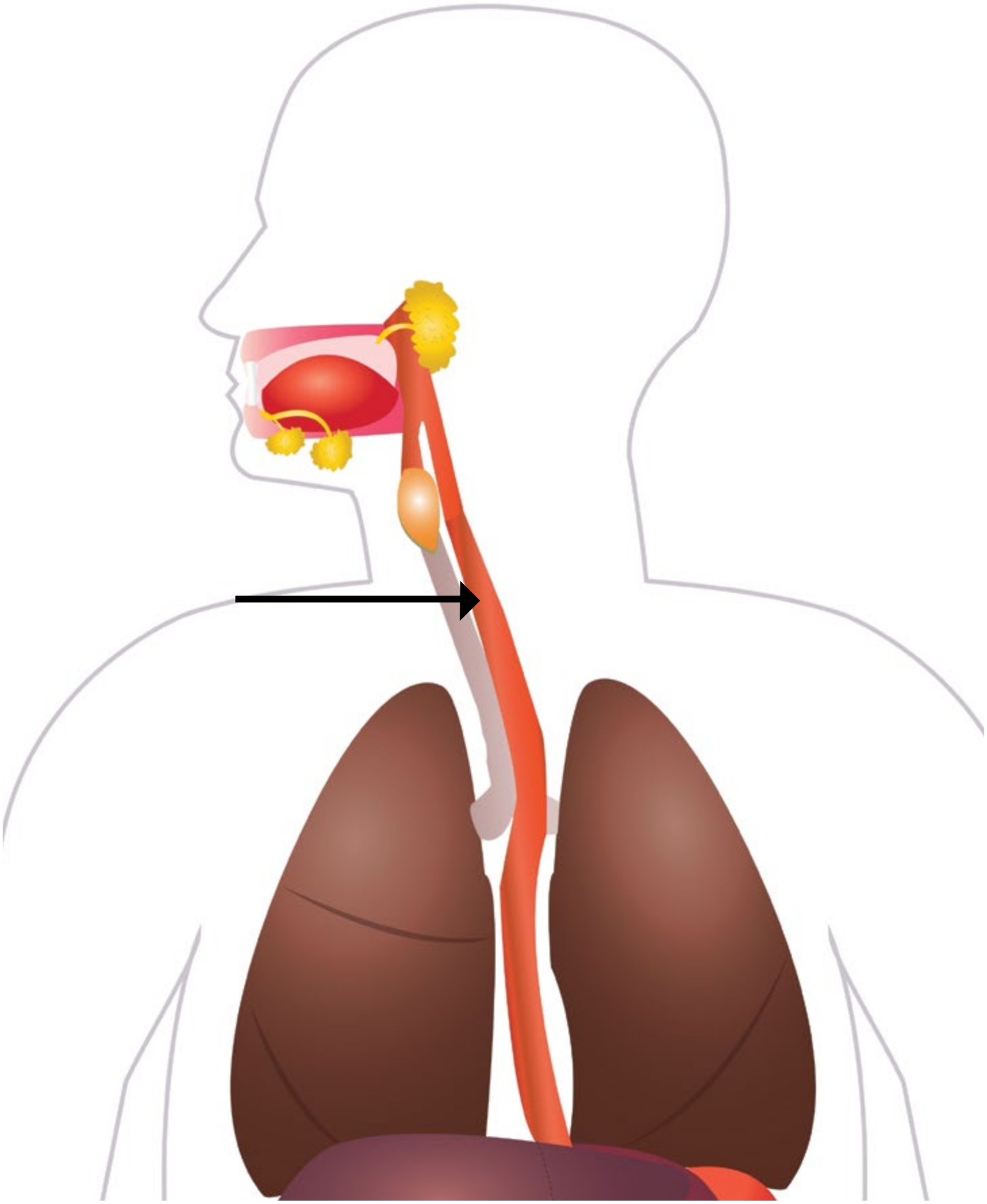


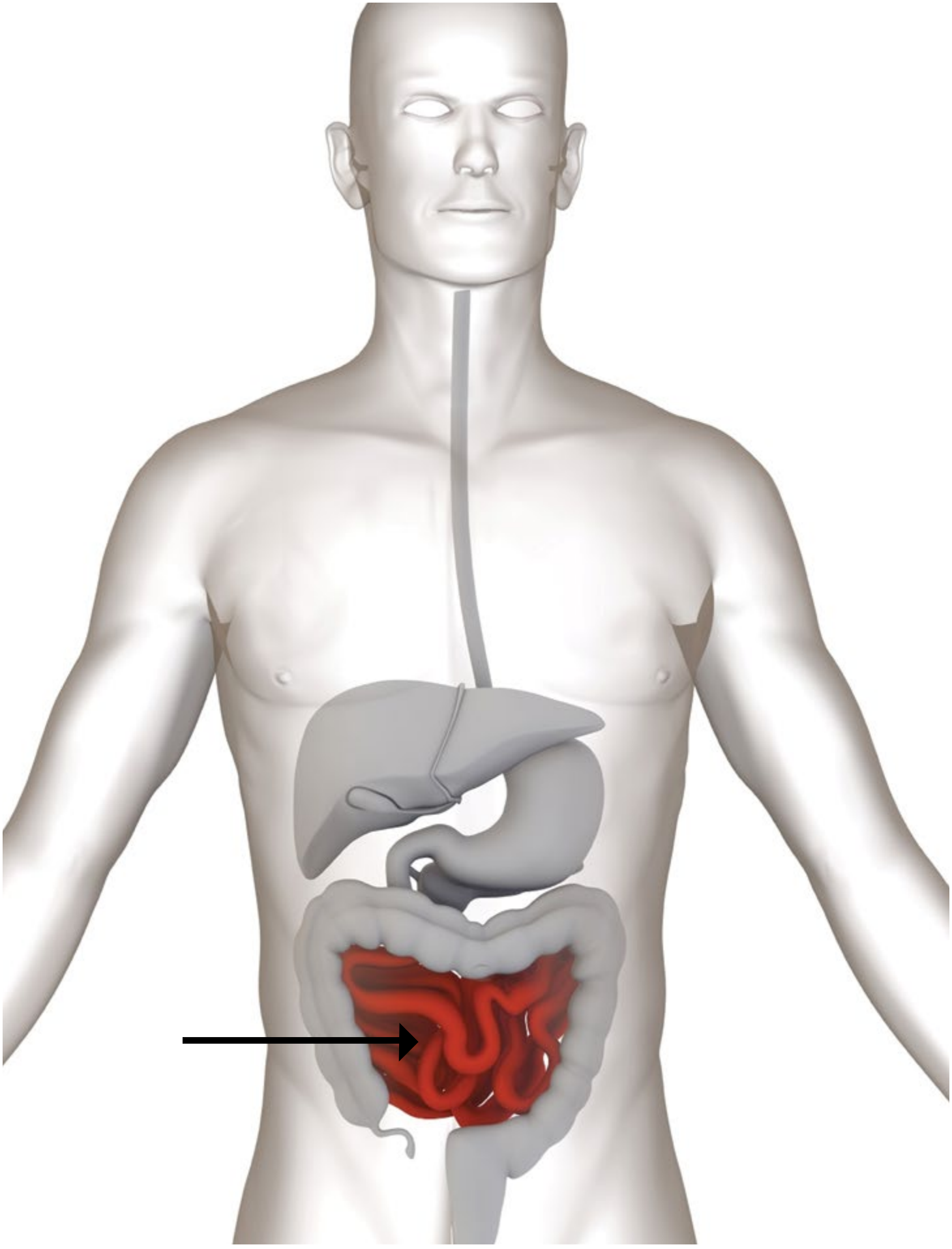
The Human Body: Building Blocks and Nutrition 7

The Human Body: Building Blocks and Nutrition 8

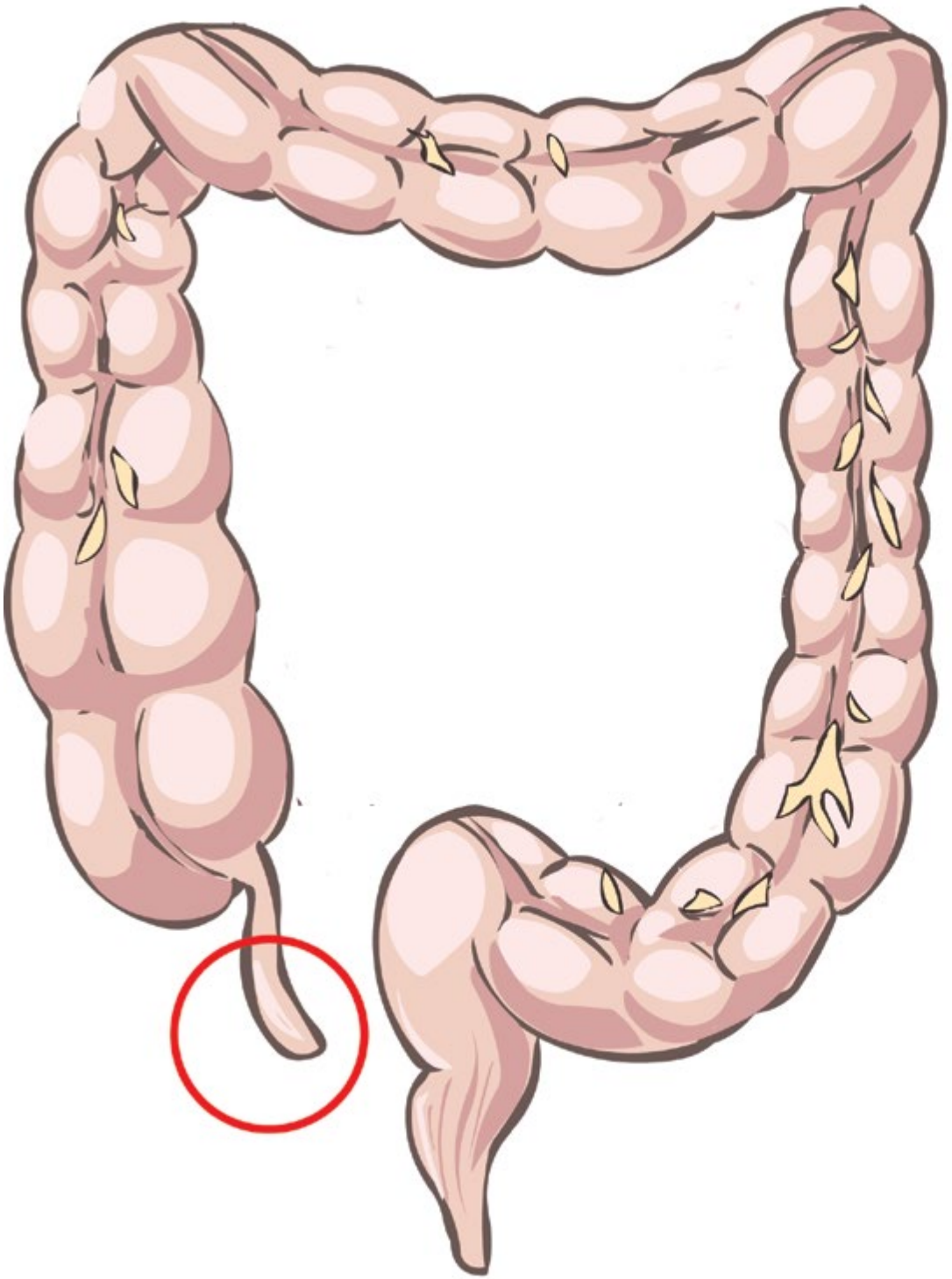


The Human Body: Building Blocks and Nutrition 9

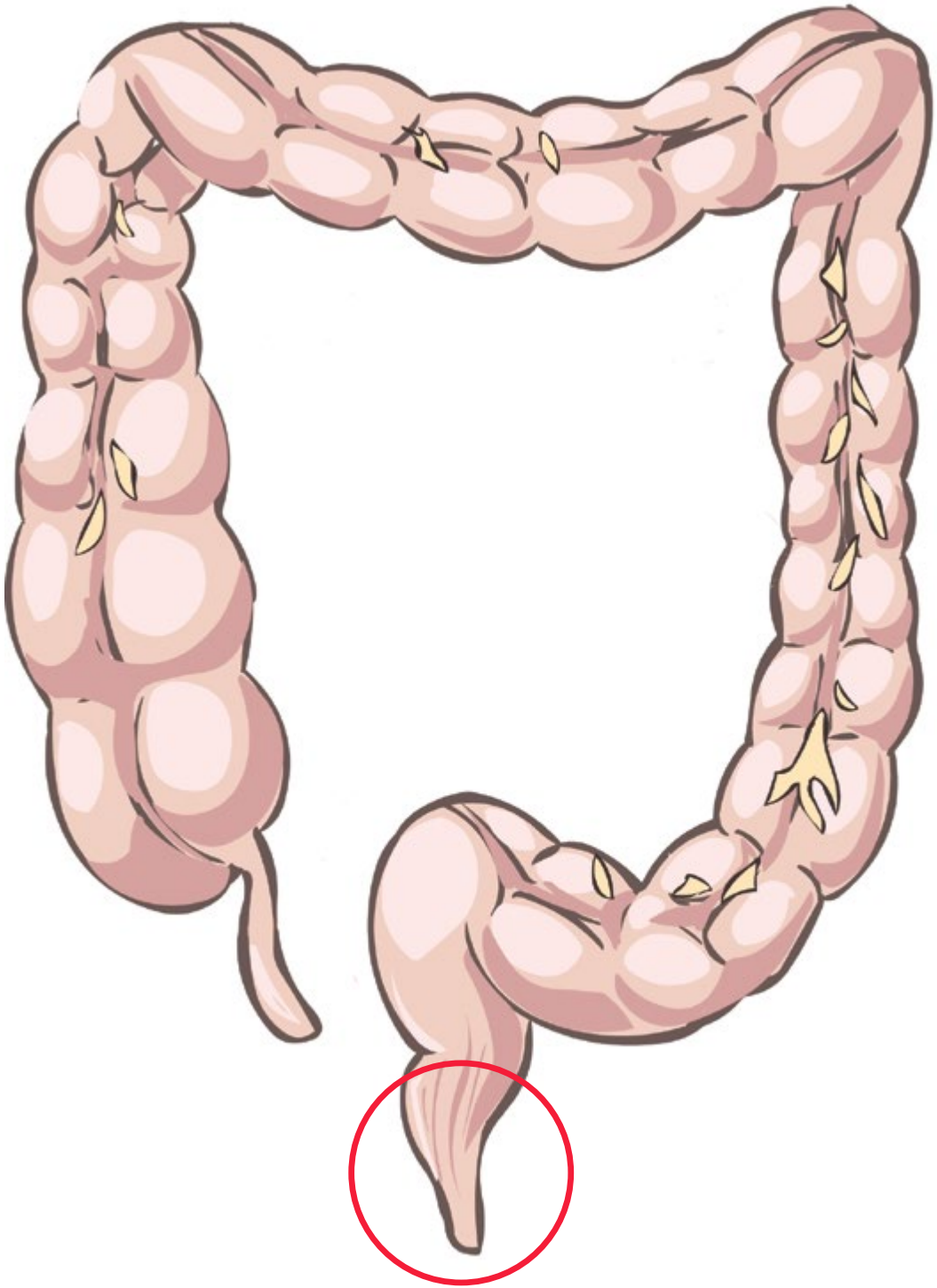
The Human Body: Building Blocks and Nutrition 10



The Human Body: Building Blocks and Nutrition 11



The Human Body: Building Blocks and Nutrition 12



The Human Body: Building Blocks and Nutrition 13

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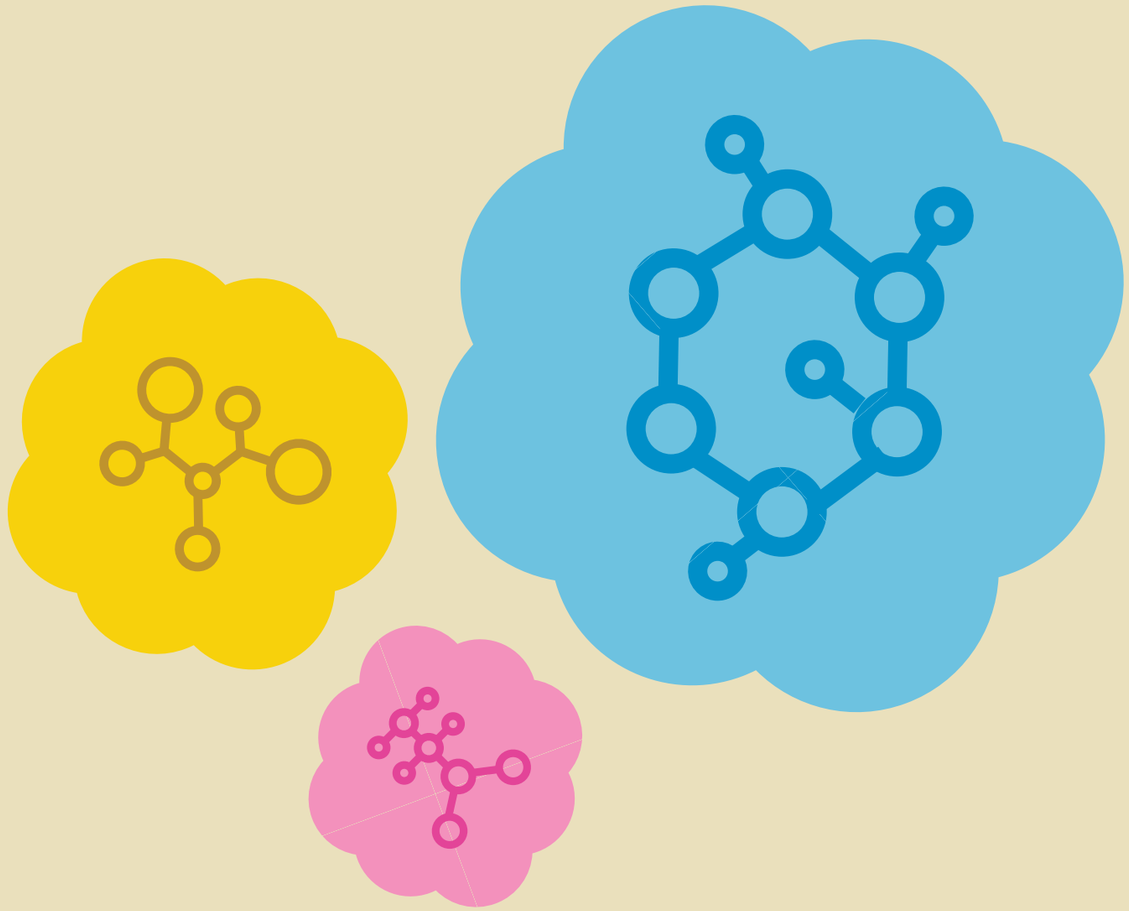

Grade 2

Knowledge 9 | Digital Components

The Human Body: Building Blocks and Nutrition

Grade 2 | Knowledge 9

The Human Body:
Building Blocks and Nutrition

Digital Components

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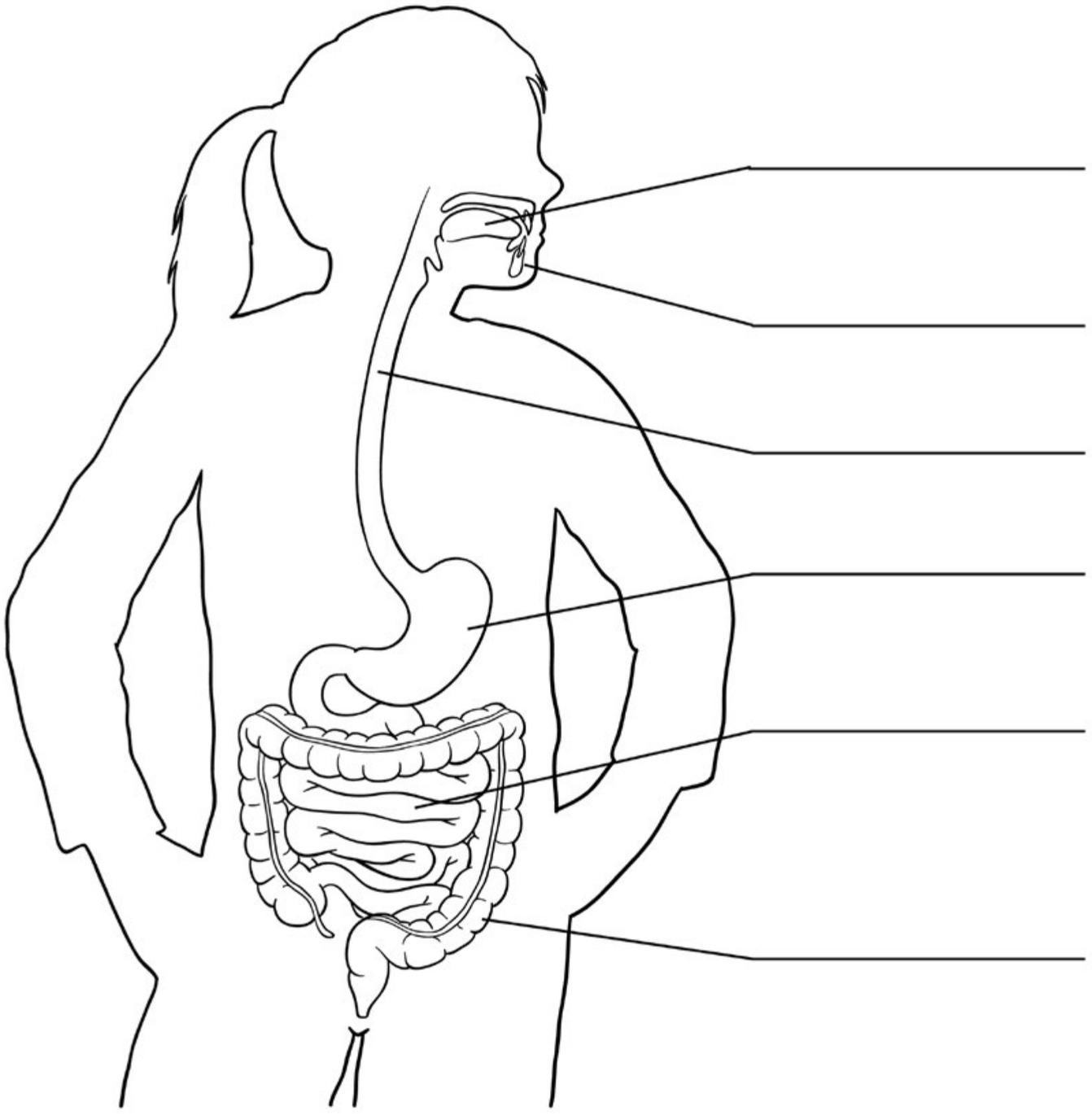
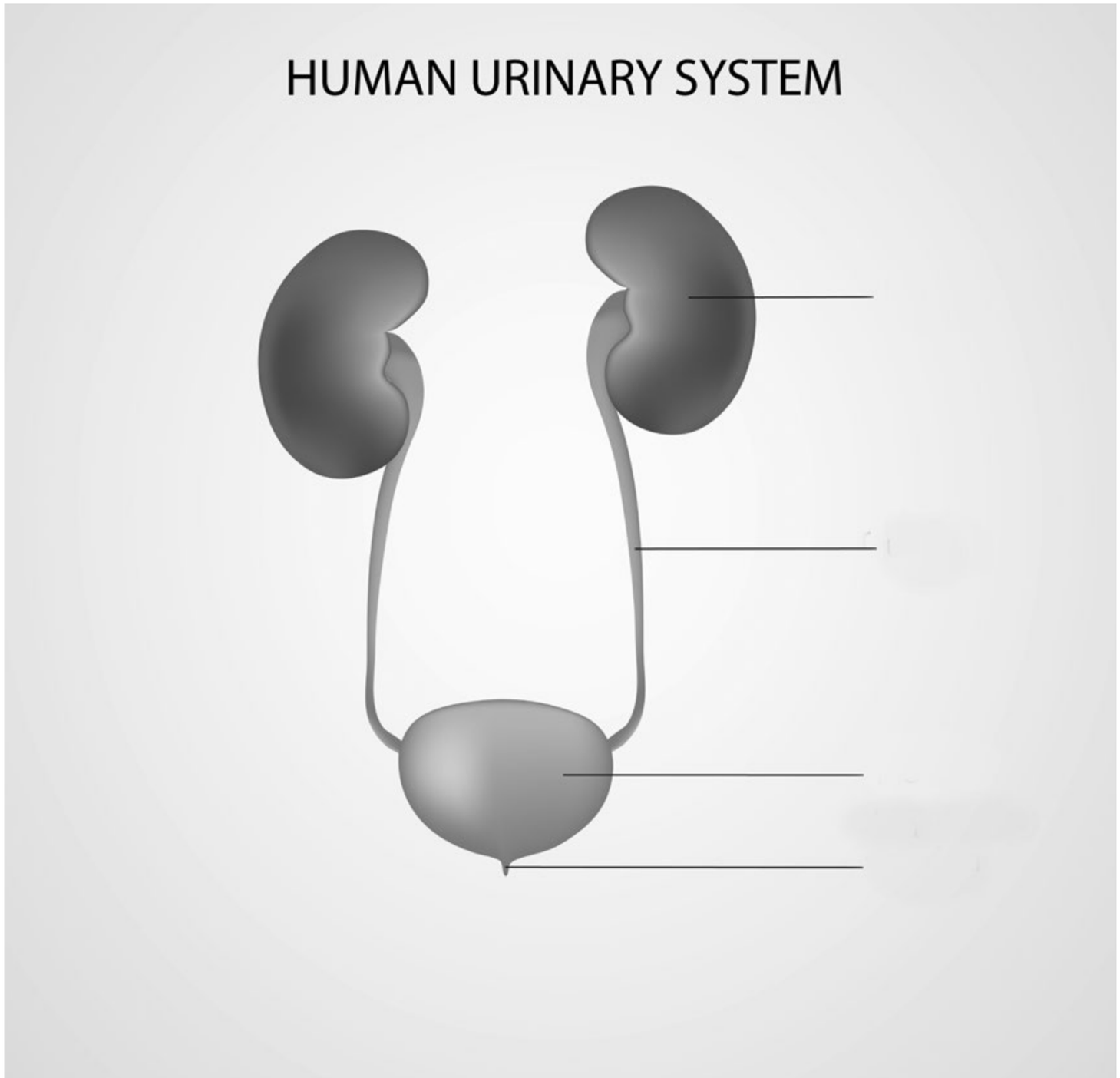
tongue	**small intestine**	**teeth**



ureter	**bladder**
kidney	**urethra**



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Welcome!

Grade 2, Domain 9

The Human Body: Building Blocks and Nutrition

In this unit, students will be introduced to a number of topics related to the human body.

What's the story?

Students will learn about how **cells** are the **building blocks of life** on Earth. They will also explore how cells form tissues, tissues form organs, and organs work within various **body systems**.

What will my student learn?

Students will learn about the **digestive and excretory systems**, focusing on the fundamental parts and functions of these body systems. They will also be taught the **five keys to good health**, the importance of **good nutrition**, and how to eat a well-balanced diet.

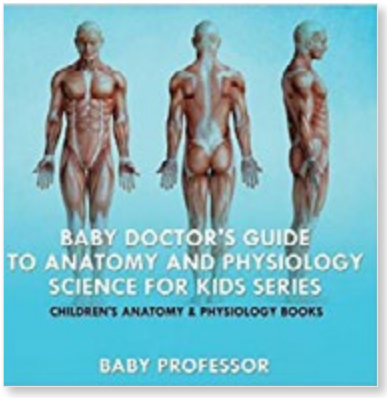
In this domain, students will create several entries in the *My Human Body Journal*, including entries where they **describe** the **five senses** and the important discovery **Anton van Leeuwenhoek** made.

Conversation starters

Ask your student questions about the unit to promote discussion and continued learning:

1. Why is the human body sometimes called *the human machine*?
   Follow up: Do you think that is a good name for it? Why? Name one of the systems that is a part of your body.
2. What did Anton van Leeuwenhoek discover?
   Follow up: What instrument did he use to make that discovery?
3. What are the four types of tissue you read about?
   Follow up: How are cells connected to tissue? Why are cells called *microscopic*? How would you describe cells and tissues? Can you draw a picture of them?
4. Describe or draw a picture of a meal that contains a lot of nutrients.
   Follow up: Why are nutrients important? What types of nutrients would you be getting if you ate that meal? Why is it important to eat a balanced diet?

Grade 2: Domain 9
Baby Doctor's Guide to Anatomy and Physiology



by Baby Professor

I

●●● QT: 760L

Read-Alouds with this rating may demonstrate sophisticated syntax and nuanced content.

●●○ QL: **2**

These Read-Alouds may include some complexity in structure and purpose. The language may include some unconventional phrasing, idioms, or other specialized phrasing.

●●○ RT: **2**

This unit's tasks and activities may contain some complexity; students will benefit from the knowledge they have built throughout the program.

Summary: From the Baby Professor book series, *Baby Doctor's Guide to Anatomy and Physiology* introduces students to the body's systems and organs within each system, along with a simple description of each organ's function. The accompanying illustrations help students gain a better understanding of what each organ does for their bodies.

Essential Question

How does the human body work?

Draw the chart below on the board. As you read, complete this chart by placing the organ with its associated body system.

Body System	Organs
Cardiovascular	
Urinary	
Nervous	
Respiratory	
Digestive	
Skeletal	
Muscular	
Endocrine	
Reproductive	
Lymphatic	

Vocabulary Routine

Tier 2 Vocabulary Words	Tier 3 Vocabulary Words
structure	kidney
system	lungs
organ	stomach
	cartilage
	tendons

Performance Task

Name the organ by listening to the clues below:

1. I remove waste from your body and filter your blood. What am I? (kidney)
2. My main job is to bring oxygen into your body. What am I? (lungs)
3. I store food temporarily. What am I? (stomach)
4. I'm made of a gel-like filling and protect your joints. What am I? (cartilage)
5. My main job is to connect your muscles to your bones. What am I? (tendon)

Students should be able to

- name the organ.

Writing Prompt

Have students write a sentence or sentences based on the following prompts. Encourage students to write in complete sentences.

- Describe the difference between a body system and an organ.