

Standardized Assessment Tasks for
STAAR Alternate

Grade 8 Science

Definitions/Examples for STAAR Reporting Category 1 (7.6, 6.6) Essence Statement A

The following definitions clarify terms used in the grade 8 science assessment tasks to ensure that the content of the tasks is understood. When appropriate, examples and nonexamples have been provided for further clarification. These are just examples and do not represent all the appropriate ways to test the skills in the STAAR Alternate assessment tasks.

Level 3: page 4

physical properties – characteristics that help identify an object. Physical properties are used to observe, describe, and classify matter.

- Physical properties can include mass, volume, texture, state (solid, liquid, gas), solubility (dissolve, not dissolve), and density (determines the ability to sink or float in a substance).
- An example of a labeled chart is shown below:

	wooden block	glass marble	plastic fork	rubber eraser	ice cube	apple	sugar cube
Sink/Float							
Dissolve/Not Dissolve							
Maintained State of Matter/ Changed State of Matter							

Levels 2 and 1: pages 4 and 5

In the Level 2 assessment task it will be important for the assessment teacher to find appropriate objects that float and sink before the observation begins. All the objects that float should be made of the same material — for example, plastic, wood, or cork, and all the objects that sink should be made of the same material — for example, metal, stone, or glass.

Note: Whether an object sinks or floats in water depends mainly on two factors: density and buoyancy; however, at this level, students do not need to explain why the objects sink or float. The focus of this assessment task is to have the student observe that the group of objects made with the same material float and the other group of objects made with the different material sink every time.

STAAR Reporting Category 1 – Matter and Energy: The student will demonstrate an understanding of the properties of matter and energy and their interactions.

<p>TEKS Knowledge & Skills Statement / STAAR-Tested Student Expectations</p>	<p>Essence of TEKS Knowledge & Skills Statement / STAAR-Tested Student Expectations</p>
<p>(7.6) Matter and energy. The student knows that matter has physical and chemical properties and can undergo physical and chemical changes. The student is expected to</p> <ul style="list-style-type: none"> (A) identify that organic compounds contain carbon and other elements such as hydrogen, oxygen, phosphorus, nitrogen, or sulfur; Supporting Standard (B) distinguish between physical and chemical changes in matter in the digestive system. Supporting Standard <p>(6.6) Matter and energy. The student knows matter has physical properties that can be used for classification. The student is expected to</p> <ul style="list-style-type: none"> (A) compare metals, nonmetals, and metalloids using physical properties such as luster, conductivity, or malleability; Supporting Standard (B) calculate density to identify an unknown substance. Supporting Standard 	<p>Essence Statement A: Recognizes the physical and chemical properties and changes of matter and how physical properties are used for classification.</p>

Level 3

Prerequisite skill: measure, compare, and contrast physical properties of matter, including size, mass, volume, states (solid, liquid, gas), temperature, magnetism, and the ability to sink or float

The student will be presented with a collection of objects consisting of different physical properties, a container of water, and a labeled chart. The columns of the chart will be labeled with the names of the objects and rows labeled with "Sink," "Float," "Dissolve," "Not Dissolve," "Maintained State of Matter," and "Changed State of Matter." After each object is placed in the container of water, the student will record the physical properties for each object on the chart according to the category labels. Using the chart, the student will compare the physical properties of the objects. The student will generate a conclusion about the objects that float or sink; dissolve or not dissolve; or maintain or change their state of matter.

Predetermined Criteria

1. The student will record the physical properties for each object on the chart.
2. The student will compare the physical properties of the objects.
3. The student will generate a conclusion about the objects that float or sink; dissolve or not dissolve; or maintain or change their state of matter.

Level 2

Prerequisite skill: measure, test, and record physical properties of matter, including temperature, mass, magnetism, and the ability to sink or float

The student will be randomly presented objects that float and objects that sink. All of the objects that float will be made of the same material, and all of the objects that sink will be made of the same material. After each object is placed in a container of water, the student will identify whether the object floats or sinks. The student will identify a physical property that is common to the objects that float and a physical property that is common to the objects that sink. The physical properties named by the student must contribute to the objects' ability to float or sink. The student will identify another object that has the same physical property as the objects that float and another object that has the same physical property as the objects that sink.

Predetermined Criteria

1. The student will identify whether the objects float or sink.
2. The student will identify a physical property that is common to the objects that float and a physical property that is common to the objects that sink.
3. The student will identify another object that has the same physical property as the objects that float and another object that has the same physical property as the objects that sink.

Level 1

Prerequisite skill: observe and record properties of objects, including relative size and mass, such as bigger or smaller and heavier or lighter, shape, color, and texture

The student will be presented with two objects, one that sinks and one that floats. The student will explore the objects. The student will participate in investigating whether the objects sink or float. The student will respond to the object that floated.

Predetermined Criteria

1. The student will explore the objects.
2. The student will participate in investigating whether the objects sink or float.
3. The student will respond to the object that floated.

Definitions/Examples for STAAR Reporting Category 2 (7.7) Essence Statement B

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Level 3: page 8

friction – a force that opposes motion and occurs when the surface of one object rubs over the surface of another. Friction resists the movement of one surface past another. The rougher the surfaces are, the greater the friction.

- Examples of different types of surfaces for experimentation: gravel, grass, sand, concrete, asphalt, and brick pavement

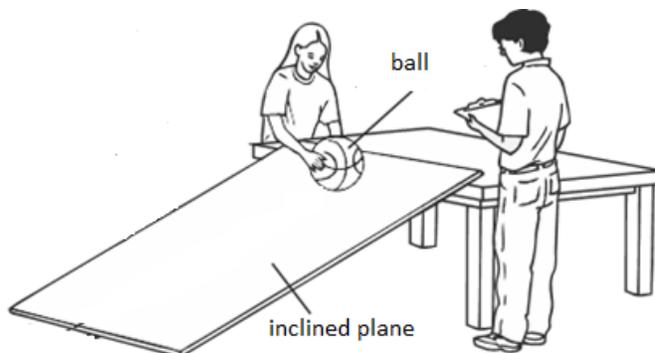
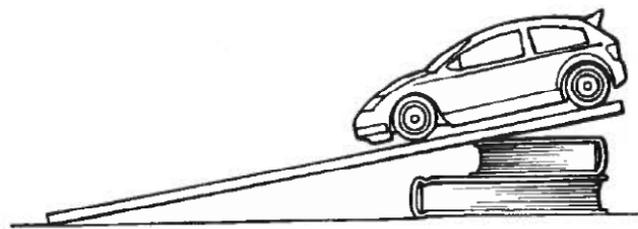
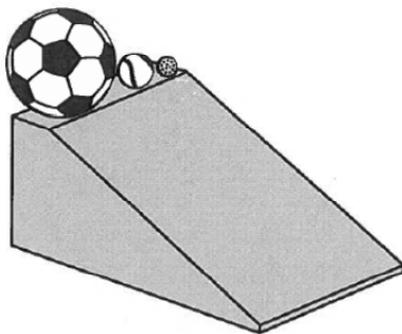
two-wheeled weighted carrier – equipment used to carry materials. The carrier should have two wheels for rolling and a handle to allow it to be pulled.

- Two-wheeled weighted carriers could include a rolling suitcase, a rolling cart, a rolling tote bag, a rolling student backpack, or a dolly

Level 2: page 9

inclined plane – a simple machine made up of a ramp. It has no moving parts.

- See examples of inclined planes below.



force – a push or a pull

physical property – a characteristic that helps identify an object. Physical properties are used to observe, describe, and classify matter. Physical properties that affect movement can include shape, mass, texture, and density.

In the Level 2 task, the student will identify the physical property that allowed objects to go down an inclined plane with less applied force. See an example below:

- If the objects that rolled were spherical and required only one small push to get to the bottom of the inclined plane and the objects that slid were rectangular and required a continuous, firm push to reach the bottom of the inclined plane, the student would identify “shape” as the physical property that resulted in less force being needed.

Note: It will be important for the teacher to carefully choose the four objects presented to the student in this task to ensure that the two objects that slide do require more force to reach the bottom of the inclined plane. This may require objects with some weight — for example, a box filled with rocks and a heavy hard-bound book rather than an empty box and a magazine, so the student will notice that additional effort was needed to move the objects.

STAAR Reporting Category 2 – Force, Motion, and Energy: The student will demonstrate an understanding of force, motion, and energy and their relationships.	
TEKS Knowledge & Skills Statement / STAAR-Tested Student Expectation	Essence of TEKS Knowledge & Skills Statement / STAAR-Tested Student Expectation
<p>(7.7) Force, motion, and energy. The student knows that there is a relationship among force, motion, and energy. The student is expected to</p> <p>(A) contrast situations where work is done with different amounts of force to situations where no work is done such as moving a box with a ramp and without a ramp, or standing still. Supporting Standard</p>	<p>Essence Statement B: Recognizes the relationship between force and work.</p>

Level 3

Prerequisite skill: design an experiment to test the effect of force on an object such as a push or a pull, gravity, friction, or magnetism

The student will conduct an investigation to measure the effect of friction on moving objects. The student will be presented a two-wheeled weighted carrier. The student will locate different types of surfaces. The carrier will be pulled across each surface. The student will record his or her observations after each trial. The student will generate a conclusion based on the data.

Predetermined Criteria

1. The student will locate different types of surfaces.
2. The student will record his or her observations after each trial.
3. The student will generate a conclusion based on the data.

Process skill: plan and implement descriptive investigations, including asking well-defined questions, making inferences, and selecting and using appropriate equipment or technology to answer his/her questions

Level 2

Prerequisite skill: compare patterns of movement of objects such as sliding, rolling, and spinning

The student will be presented an inclined plane. The student will also be presented four objects, two of which will roll and two of which will slide. The student will assist in applying force to move the objects down the inclined plane. The student will identify how much force he or she applied to get each object to the end of the plane. The student will identify the physical property that resulted in less force being needed.

Predetermined Criteria

1. The student will assist in applying force to move the objects down the inclined plane.
2. The student will identify how much force he or she applied to get each object to the end of the plane.
3. The student will identify the physical property that resulted in less force being needed.

Level 1

Prerequisite skill: observe and describe the ways that objects can move such as in a straight line, zigzag, up and down, back and forth, round and round, and fast and slow

An object will be placed in front of the student. The student will participate in moving the object in different ways such as up and down, back and forth, and round and round. The student will respond to the changes in movement. The motion of the object will be stopped. The student will anticipate the continuation of the movement.

Predetermined Criteria

1. The student will participate in moving the object in different ways.
2. The student will respond to the changes in movement.
3. The student will anticipate the continuation of the movement.

Definitions/Examples for STAAR Reporting Category 3 (8.9) Essence Statement C

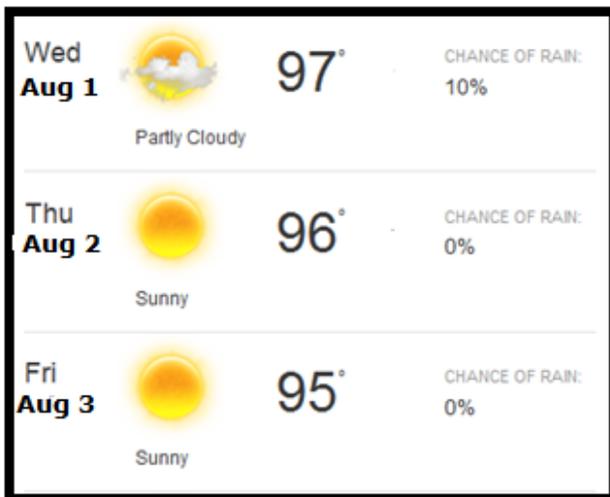
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Level 3: page 11

United States weather map – A United States weather map can be located in a newspaper, online website, or be teacher-made. Temperature and precipitation (rain, snow, sleet) for a wide array of places should be available. It will be important for the student to locate **two** different places and compare the data from the two places for the same three-day period.

- Example of weather data for two different places for the same three-day period:

New Orleans, Louisiana



San Francisco, California



Level 2: page 12

weather forecast that shows a clear pattern for one weather condition – The Level 2 assessment task requires a seven-day forecast that is clearly indicated for one type of weather.

- Examples of a clear pattern for seven days:
 - All seven days are sunny with no clouds
 - All seven days are stormy and rainy
 - All seven days have temperatures below freezing
- Nonexamples that would not be appropriate for this assessment task:
 - Four days are sunny and three days are rainy
 - Seven days are alternately sunny and rainy
 - Six days are rainy and the seventh day is sunny

STAAR Reporting Category 3 – Earth and Space: The student will demonstrate an understanding of components, cycles, patterns, and natural events of Earth and space systems.	
TEKS Knowledge & Skills Statement / STAAR-Tested Student Expectations	Essence of TEKS Knowledge & Skills Statement / STAAR-Tested Student Expectations
<p>(8.9) Earth and space. The student knows that natural events can impact Earth systems. The student is expected to</p> <ul style="list-style-type: none"> (A) describe the historical development of evidence that supports plate tectonic theory; Supporting Standard (B) relate plate tectonics to the formation of crustal features; Readiness Standard (C) interpret topographic maps and satellite views to identify land and erosional features and predict how these features may be reshaped by weathering. Readiness Standard 	<p>Essence Statement C: Recognizes that natural events affect Earth’s systems.</p>

Level 3

Prerequisite skill: observe, measure, record, and compare day-to-day weather changes in different locations at the same time that include air temperature, wind direction, and precipitation

The student will be presented a United States weather map. The student will locate two places on the map with significantly different temperatures. The student will compare the temperature and precipitation in both places for the same three-day period. The student will determine how to prepare for the weather at each location.

Predetermined Criteria

1. The student will locate two places on the map with significantly different temperatures.
2. The student will compare the temperature and precipitation in both places for the same three-day period.
3. The student will determine how to prepare for the weather at each location.

Process skill: analyze and interpret patterns in data to construct reasonable explanations based on evidence from investigations

Transition

Level 2

Prerequisite skill: measure, record and graph weather information, including temperature, wind conditions, precipitation, and cloud coverage, in order to identify patterns in the data

The student will be presented a seven-day weather forecast that shows a clear pattern for one weather condition. The student will assist in graphing the weather condition for the seven days. The student will identify the weather pattern. The student will choose an article of clothing appropriate for the forecasted weather.

Predetermined Criteria

1. The student will assist in graphing the weather condition for the seven days.
2. The student will identify the weather pattern.
3. The student will choose an article of clothing appropriate for the forecasted weather.

Process skill: record and organize data using pictures, numbers, and words

Transition

Level 1

Prerequisite skill: observe and describe weather changes from day to day and over seasons

The student will be presented sensory input representing weather conditions for a three-day period in which the weather is the same for the first two days and changes on the third day. The student will experience the sensory input for the first day's weather condition. After the sensory input is provided for the second day's weather condition, the student will acknowledge the sensory input for the second day's weather condition. The student will respond to the change in the third day's weather condition.

Predetermined Criteria

1. The student will experience the sensory input for the first day's weather condition.
2. The student will acknowledge the sensory input for the second day's weather condition.
3. The student will respond to the change in the third day's weather condition.

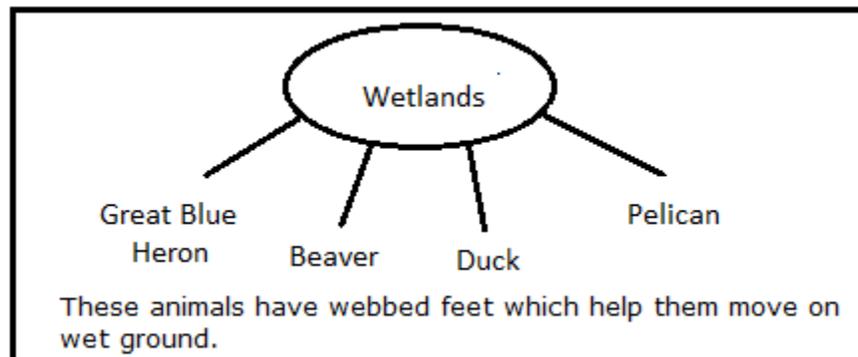
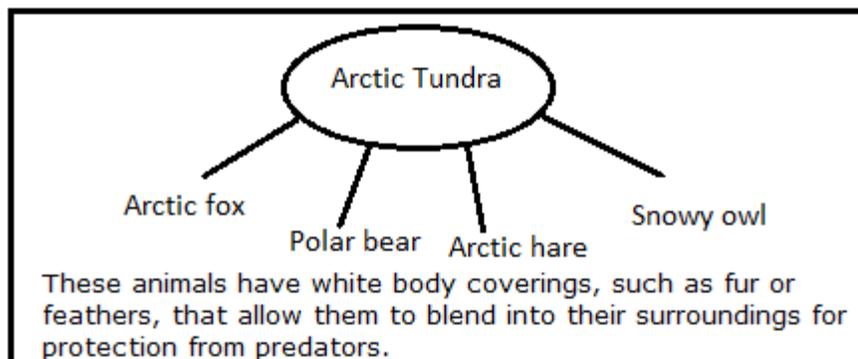
Definitions/Examples for STAAR Reporting Category 4 (8.11) Essence Statement D

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Level 3: page 16

environment – the external surroundings and physical conditions in which a plant or animal lives and which affect and influence its growth, development and survival. Environments have various characteristics such as temperature, moisture, and food availability that allow specific species to live there. There is a relationship between animals and the environments in which they live.

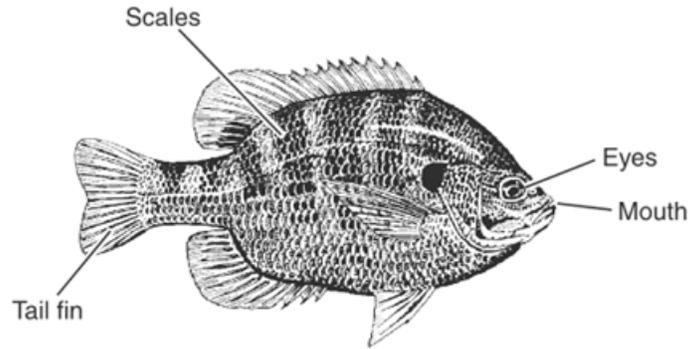
- Environments include ocean, forest, tropical rain forest, desert, Arctic tundra, grassland, and wetlands, such as swamps and marshes
- Two different environments are shown below. Some animals and a common characteristic that helps the animals survive in their environment are also given.



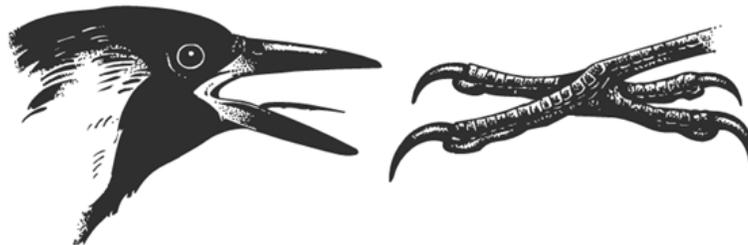
For Level 3, the list generated should include several examples of environments.

animal in its natural environment – The Level 2 and 1 assessment tasks provide the student with an opportunity to examine an animal in its natural environment. This is possible through pictures, videos, the real environment, or a combination.

- Examples include:
 - Fish in a pond – The tail fin helps fish move through the water. Scales provide protection to the fish.



- Bird in a tree – The bird's beak helps it eat insects. The claws help the bird grip the tree branch.



- Monkey in a tree – The monkey has a tail that can grasp tree limbs. The tail helps the monkey live and climb in trees.



STAAR Reporting Category 4 – Organisms and Environments: The student will demonstrate an understanding of the structures and functions of living organisms and their interdependence on each other and on their environment.	
TEKS Knowledge & Skills Statement / STAAR-Tested Student Expectations	Essence of TEKS Knowledge & Skills Statement / STAAR-Tested Student Expectations
<p>(8.11) Organisms and environments. The student knows that interdependence occurs among living systems and the environment and that human activities can affect these systems. The student is expected to</p> <ul style="list-style-type: none"> (A) describe producer/consumer, predator/prey, and parasite/host relationships as they occur in food webs within marine, freshwater, and terrestrial ecosystems; Readiness Standard (B) investigate how organisms and populations in an ecosystem depend on and may compete for biotic and abiotic factors such as quantity of light, water, range of temperatures, or soil composition; Readiness Standard (C) explore how short- and long-term environmental changes affect organisms and traits in subsequent populations; Readiness Standard (D) recognize human dependence on ocean systems and explain how human activities such as runoff, artificial reefs, or use of resources have modified these systems. Supporting Standard <p>(7.11) Organisms and environments. The student knows that populations and species demonstrate variation and inherit many of their unique traits through gradual processes over many generations. The student is expected to</p>	<p>Essence Statement D: Recognizes the interdependence of organisms with each other and with their environment.</p>

<p>(A) examine organisms or their structures such as insects or leaves and use dichotomous keys for identification; Supporting Standard</p> <p>(C) identify some changes in genetic traits that have occurred over several generations through natural selection and selective breeding such as the Galapagos Medium Ground Finch (<i>Geospiza fortis</i>) or domestic animals. Supporting Standard</p>	
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Level 3

Prerequisite skill: explore how structures and functions of plants and animals allow them to survive in a particular environment

The student will generate a list of different environments. The student will be presented a wide array of representations of animals. The student will classify the animals according to the environments in which the animals live. The student will determine a common characteristic that allows the animals in each group to survive in their environment.

Predetermined Criteria

1. The student will generate a list of different environments.
2. The student will classify the animals according to the environments in which the animals live.
3. The student will determine a common characteristic that allows the animals in each group to survive in their environment.

Level 2

Prerequisite skill: investigate how the external characteristics of an animal are related to where it lives, how it moves, and what it eats

The student will be presented an animal or a representation of the animal in its natural environment. The student will examine the animal and its environment. The student will identify a physical characteristic of the animal. The student will identify one way the characteristic helps the animal live in its environment.

Predetermined Criteria

1. The student will examine the animal and its environment.
2. The student will identify a physical characteristic of the animal.
3. The student will identify one way the characteristic helps the animal live in its environment.

Level 1

Prerequisite skill: recognize, observe, and discuss the relationship of organisms to their environments

The student will be presented an animal or representation of the animal in its natural environment. The student will acknowledge the environment of the animal. The student will explore a characteristic of the animal. The student will participate in simulating how the characteristic helps the animal.

Predetermined Criteria

1. The student will acknowledge the environment of the animal.
2. The student will explore a characteristic of the animal.
3. The student will participate in simulating how the characteristic helps the animal.