

Standardized Assessment Tasks for
STAAR Alternate

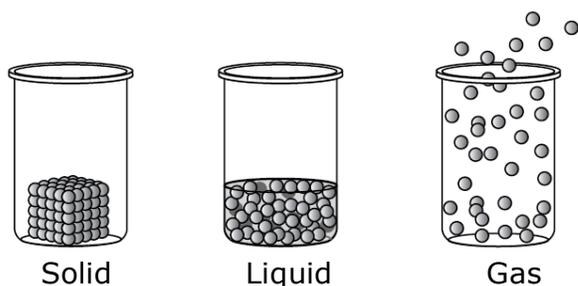
Grade 8 Science

Definitions/Examples for STAAR Reporting Category 1 (8.5) 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

states of matter – Matter has different forms called states. The three states of matter are solid, liquid, and gas. The drawings below model the particles that make up a solid, a liquid, and gas.



- The particles of a solid are packed tightly together. A solid does not change shape when you put it into a container.
- The particles of a liquid can flow past one another. Liquids take on the shape of their containers.
- The particles of a gas can move about freely. Gases take on both the shape and the volume of their containers.



Note: When completing this assessment task, the teacher will be using a hot plate, burner, or other heat source to apply heat to a frozen liquid. When using the heat source, the teacher should follow and model good safety practices. These practices should include:

- *never leaving the heat source unattended*
- *using heat-resistant gloves when handling hot containers*
- *take care that hair, clothing, and hands are a safe distance from the heat source at all times*
- *never look into a container that is being heated*
- *turn the heat source off when not in use*

Levels 2 and 1: page 5

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), size, color, shape, weight

STAAR Reporting Category 1 – Matter and Energy: The student will demonstrate an understanding of the properties of matter and energy and their interactions.	
TEKS Knowledge & Skills Statement / STAAR-Tested Student Expectations	Essence of TEKS Knowledge & Skills Statement / STAAR-Tested Student Expectations
<p>(8.5) Matter and energy. The student knows that matter is composed of atoms and has chemical and physical properties. The student is expected to</p> <ul style="list-style-type: none"> (A) describe the structure of atoms, including the masses, electrical charges, and locations, of protons and neutrons in the nucleus and electrons in the electron cloud; Readiness Standard (B) identify that protons determine an element’s identity and valence electrons determine its chemical properties, including reactivity; Readiness Standard (C) interpret the arrangement of the Periodic Table, including groups and periods, to explain how properties are used to classify elements; Readiness Standard (D) recognize that chemical formulas are used to identify substances and determine the number of atoms of each element in chemical formulas containing subscripts; Readiness Standard (E) investigate how evidence of chemical reactions indicate that new substances with different properties are formed; Readiness Standard (F) recognize whether a chemical equation containing coefficients is balanced or not and how that relates to the law of conservation of mass. Supporting Standard 	<p>Essence Statement A: Recognizes that matter is composed of atoms, has distinct properties, and interacts with energy.</p>

<p>(7.5) Matter and energy. The student knows that interactions occur between matter and energy. The student is expected to</p> <p>(C) diagram the flow of energy through living systems, including food chains, food webs, and energy pyramids. Supporting Standard</p> <p>(6.5) Matter and energy. The student knows the differences between elements and compounds. The student is expected to</p> <p>(C) differentiate between elements and compounds on the most basic level. Supporting Standard</p>	
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Level 3

Prerequisite skill: predict, observe and record changes in the state of matter caused by heating or cooling

The student will conduct an investigation observing changes in the states of matter when heat is applied. The student will be presented a frozen liquid. The student will record observations of the solid state of the frozen liquid. The teacher will apply heat to the frozen liquid just until it is melted. The student will determine when the frozen liquid changes from a solid state to a liquid state. The teacher will remove the liquid from the heat source. The student will record observations of the liquid state. The teacher will apply heat until the liquid changes to steam. The student will determine when the liquid changes from a liquid state to a gas state. The student will record observations of the gas state. The student will answer a question relating to his or her observations.

Predetermined Criteria

1. The student will record observations of each state of matter.
2. The student will determine when the states of matter changed.
3. The student will answer a question relating to his or her observations.

Level 2

Prerequisite skill: classify matter by physical properties, including shape, relative mass, relative temperature, texture, flexibility, and whether material is a solid or liquid

The student will be presented three objects that have different physical properties. The student will examine the three objects. The student will identify one physical property that is different for each object. The student will be presented additional objects that can be sorted according to the physical properties identified by the student. The student will sort the objects into groups according to the student-identified physical property.

Predetermined Criteria

1. The student will examine the three objects.
2. The student will identify one physical property that is different for each object.
3. The student will sort the objects into groups according to the student-identified physical property.

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 explore objects that are the same in one physical property. The student will participate in grouping the objects together according to the common physical property. The student will be presented an object that has a significantly different physical property. The student will respond to the physical property that is different. The student will participate in moving the different object away from the like objects.

Predetermined Criteria

1. The student will participate in grouping the objects together according to the common physical property.
2. The student will respond to the physical property that is different.
3. The student will participate in moving the different object away from the like objects.

Definitions/Examples for STAAR Reporting Category 2 (6.9) Essence Statement B

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Levels 3 and 2: pages 8 and 9

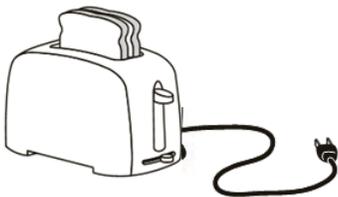
In the Level 3 assessment task, the student will generate a list of different forms of energy. The student's list should include several forms of energy.

Examples of forms of energy include:

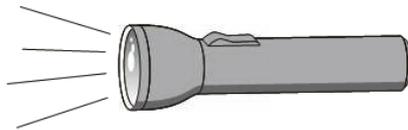
- thermal (heat) energy
- light energy
- electrical energy
- chemical energy
- mechanical energy

Energy transformation – the process of energy changing from one form to another.

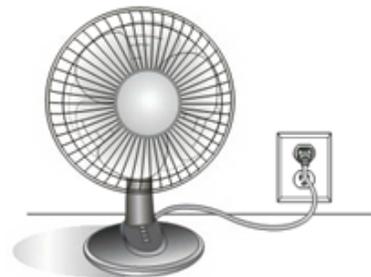
Examples of items that demonstrate an energy transformation include:



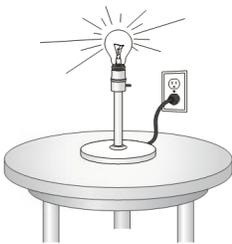
Toaster
electrical energy
into
thermal energy



Flashlight
chemical energy
into
light energy



Fan
electrical energy
into
mechanical energy



Lamp
electrical energy
into
light energy



Car
chemical energy
into
mechanical energy



Blender
electrical energy
into
mechanical energy



Energy-efficient house
solar energy
into
electrical energy



Hair-dryer
electrical energy
into
thermal energy



Campfire
chemical energy
into
thermal energy

Level 1: page 9

Examples of an electrical or battery-operated device that provides a multisensory experience include:

Device	Energy Source	Sensory Experiences
flashlight	chemical energy	light and heat
vibrator/massager	chemical or electrical energy	movement, sound
hair blow dryer	electrical energy	movement, heat, sound
foot spa	chemical or electrical energy	movement, heat, sound

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>(6.9) Force, motion, and energy. The student knows that the Law of Conservation of Energy states that energy can neither be created nor destroyed, it just changes form. The student is expected to</p> <p>(C) demonstrate energy transformations such as energy in a flashlight battery changes from chemical energy to electrical energy to light energy. Supporting Standard</p>	<p>Essence Statement B: Knows that energy can neither be created nor destroyed but changes form.</p>

Level 3

Prerequisite skill: differentiate among forms of energy, including mechanical, sound, electrical, light, and heat/thermal

Using reference materials, the student will generate a list of different forms of energy. The student will locate examples of each form of energy on the list. The student will be presented with an item that demonstrates an energy transformation. The student will determine the type of energy transformation that occurred.

Predetermined Criteria

1. The student will generate a list of different forms of energy.
2. The student will locate examples of each form of energy on the list.
3. The student will determine the type of energy transformation that occurred.

Level 2

Prerequisite skill: explore different forms of energy, including mechanical, light, sound, and heat/thermal in everyday life

The student will be presented representations for three different forms of energy other than electrical energy. The student will identify each of the forms of energy. The student will match electrical devices to each of the forms of energy that results when the device is activated. The student will identify the previous form of energy for each of the transformed energy examples.

Predetermined Criteria

1. The student will identify each of the forms of energy.
2. The student will match electrical devices to each of the forms of energy that results when the device is activated.
3. The student will identify the previous form of energy for each of the transformed energy examples.

Level 1

Prerequisite skill: use the five senses to explore different forms of energy such as light, heat, and sound

The student will be presented an electrical or battery-operated device that when activated provides a multisensory experience. The student will acknowledge the device. The student will participate in pairing the device to the energy source. The device will be activated. The student will respond to the multisensory experience provided.

Predetermined Criteria

1. The student will acknowledge the device.
2. The student will participate in pairing the device to the energy source.
3. The student will respond to the multisensory experience provided.

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

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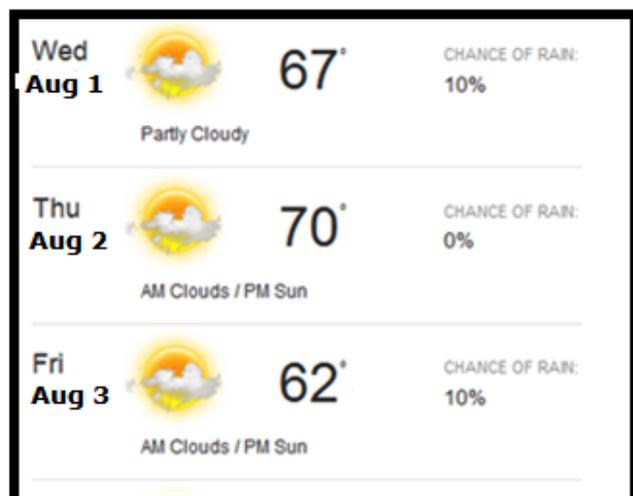
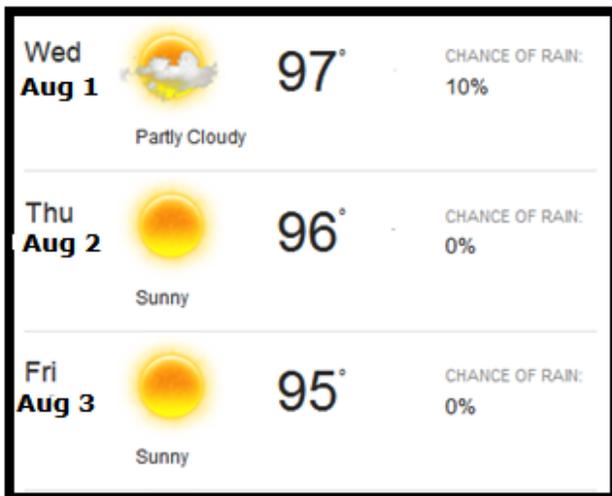
Level 3: page 12

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 13

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

Level 1: page 13

In the Level 1 assessment task, the student will be presented sensory input representing weather conditions. Examples of sensory input for various weather conditions include:

- wind – fan
- rain – spray bottle of water
- sun – heat lamp

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 (7.12, 6.12) Essence Statement D

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 17

ecosystem – an ecosystem is an interactive system that includes all parts of the physical environment such as temperature, soil, and weather and the entire community of organisms that live there such as plants, animals, fungi, and bacteria.

Examples of ecosystems include:

- pond, lake, and wetland
- forest (woodland), grassland, and desert

Level 2: page 17

Examples of behaviors of living things that result from weather conditions include:

- **migration** – Some species of animals migrate to warmer climates and stay there until winter is over. Once the climate in their habitat becomes warm, the animals migrate back. Examples of animals that migrate to other places to escape the freezing temperatures include:
 - certain types of birds like geese and ducks
 - animals like elks, whales, and caribou
 - insects such as termites, Japanese beetle, moths and Monarch butterflies
- **hibernation** (a type of dormancy) – Some animals hibernate, or go into a state of deep sleep or dormancy, to escape from harsh weather in winter. Examples of organisms that hibernate include:
 - certain mammals such as bears, badgers, chipmunks, and hedgehogs
- **dormancy** – Some organisms have a period in their life cycle when metabolic activity is minimized and active development is temporarily suspended, usually due to the onset of cold weather. Many plants and trees go dormant by shedding their leaves and shutting down the growth process. Examples of organisms that have periods of dormancy include:
 - certain plants and trees such as apple trees and rose bushes

Level 1: page 18

In the Level 1 assessment task, the student will explore and participate in sorting living and nonliving things. This can be challenging for the Level 1 student as he or she may think that anything that moves is alive (living). Movement, itself, is not a good distinguishing feature. A ball moves or rolls down a slope but the ball is not living. A car moves but it is powered by an energy source. Living things move by themselves. Even plants open and close their petals or turn toward the sun on their own.

Some characteristics that distinguish **living things from nonliving** include:

- Living things —
 - grow and develop
 - reproduce
 - have basic needs such as food, air, and water (obtain and use energy)
 - respond to stimuli
 - adapt to their environment
 - are made of cells
- Nonliving things do not have any of the characteristics listed above. Nonliving things do not grow, reproduce, need food, air and water, respond to stimuli, or adapt to the environment. Nonliving things are not made of cells.

Note: It will be important for the teacher to carefully choose the living and nonliving things that the student will explore and participate in sorting.

Examples of things the teacher might choose for exploration and sorting:

- Living things – a classroom pet such as a hamster, guinea pig, bird, and fish, insect(s) in a jar or bug cage; a plant or flower growing in soil
- Nonliving things – book, coin, pencil, block of wood, and computer

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.

<p>TEKS Knowledge & Skills Statement / STAAR-Tested Student Expectations</p>	<p>Essence of TEKS Knowledge & Skills Statement / STAAR-Tested Student Expectations</p>
<p>(7.12) Organisms and environments. The student knows that living systems at all levels of organization demonstrate the complementary nature of structure and function. The student is expected to</p> <ul style="list-style-type: none"> (B) identify the main functions of the systems of the human organism, including the circulatory, respiratory, skeletal, muscular, digestive, excretory, reproductive, integumentary, nervous, and endocrine systems; Supporting Standard (D) differentiate between structure and function in plant and animal cell organelles, including cell membrane, cell wall, nucleus, cytoplasm, mitochondrion, chloroplast, and vacuole; Supporting Standard (F) recognize that according to cell theory all organisms are composed of cells and cells carry on similar functions such as extracting energy from food to sustain life. Supporting Standard <p>(6.12) Organisms and environments. The student knows all organisms are classified into Domains and Kingdoms. Organisms within these taxonomic groups share similar characteristics which allow them to interact with the living and nonliving parts of their ecosystem. The student is expected to</p> <ul style="list-style-type: none"> (D) identify the basic characteristics of organisms, including prokaryotic or eukaryotic, unicellular or multicellular, autotrophic or heterotrophic, and mode of reproduction, that further classify them in the currently recognized Kingdoms. Supporting Standard 	<p>Essence Statement D: Recognizes the classification of organisms.</p>

Level 3

Prerequisite skill: observe and describe the physical characteristics of environments and how they support populations and communities within an ecosystem

Using reference materials, the student will determine characteristics of a given ecosystem. The student will generate a graphic organizer showing the animals and plants that are supported by the ecosystem. The student will be presented a representation of an animal or plant that cannot be supported by the ecosystem. The student will justify why the animal or plant cannot be supported by the ecosystem.

Predetermined Criteria

1. The student will determine characteristics of a given ecosystem.
2. The student will generate a graphic organizer showing the animals and plants that are supported by the ecosystem.
3. The student will justify why the animal or plant cannot be supported by the ecosystem.

Process skill: construct maps, graphic organizers, simple tables, charts, and bar graphs using tools and current technology to organize, examine, and evaluate measured data

Level 2

Prerequisite skill: identify factors in the environment, including temperature and precipitation, that affect growth and behavior such as migration, hibernation, and dormancy of living things

Using reference materials, the student will identify typical weather conditions for a given location during a specific season of the year. The student will identify the animals and plants that live in that location. The student will identify behaviors of living things that result from weather conditions.

Predetermined Criteria

1. The student will identify typical weather conditions for a given location during a specific season of the year.
2. The student will identify the animals and plants that live in that location.
3. The student will identify behaviors of living things that result from weather conditions.

Process skill: make predictions based on observable patterns

Level 1

Prerequisite skill: differentiate between living and nonliving things based upon whether they have basic needs and produce offspring

The student will explore living and nonliving things. The student will participate in sorting living and nonliving things. The student will participate in providing water to a living thing.

Predetermined Criteria

1. The student will explore living and nonliving things.
2. The student will participate in sorting living and nonliving things.
3. The student will participate in providing water to a living thing.