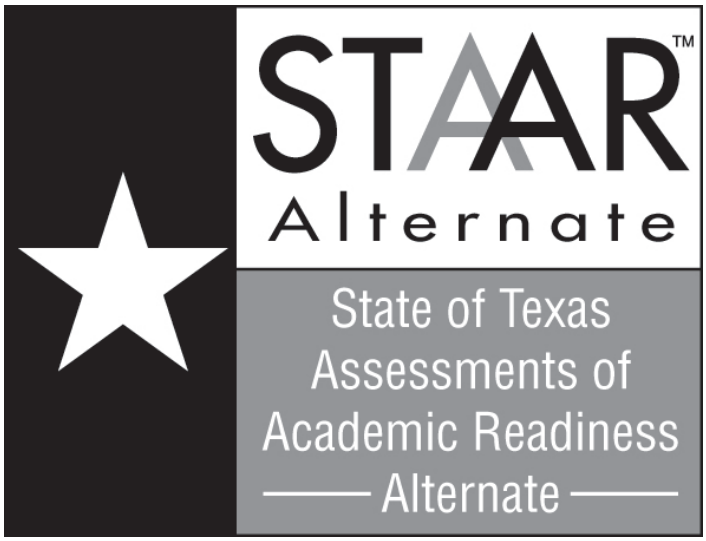


Standardized Assessment Tasks for
STAAR Alternate

Grade 5 Science

Definitions/Examples for STAAR Reporting Category 1 (5.5, 3.5)
Essence Statement A

The following definitions clarify terms used in the grade 5 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.

Levels 3, 2, and 1: pages 5 and 6

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

Levels 3 and 1: pages 5 and 6

The Level 3 and Level 1 assessment tasks focus on changes to physical properties of a material or object made by an applied force. It will be important that the applied force(s) cause a physical change rather than a chemical change.

A **physical change** occurs when a substance changes state but does not change its chemical composition and/or an object or material changes appearance or shape without becoming a new substance. A physical change does not produce a new substance.

Examples of physical changes include:

- water freezing into ice or ice cube melting into water *(state change)*
- cutting a piece of wood into smaller pieces or shredding paper *(size change)*
- sanding/grinding the surface of an object *(texture change)*
- stepping on a can and crushing it *(shape change)*

Examples that are **NOT** physical changes because a chemical reaction occurs and new substances are formed include:

- burning of paper or wood
- rusting of iron
- baking a cake

force – any influence that causes an object to undergo a certain change. Physical changes in matter can be caused with forces like motion, temperature, and pressure.

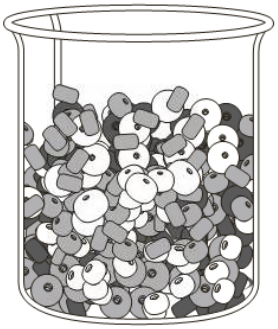
Level 2: page 5

mixture – a composition of two or more substances that do not chemically combine with each other and are capable of being physically separated.

Examples of mixtures include:

A fruit salad with any combination of fruit such as apples, oranges, cherries, strawberries, blueberries, and cantaloupe

A snack mix with any combination of nuts and dried fruit such as pecans, almonds, dried cherries, and dried blueberries



A variety of plastic, wood, glass, and metal beads

Examples that are **NOT** mixtures because a chemical reaction occurs and the ingredients cannot be separated after combined include:

- Baking soda and vinegar
- Flour and eggs

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**
(5.5) Matter and energy. The student knows that matter has measurable physical properties and those properties determine how matter is classified, changed, and used. The student is expected to (A) classify matter based on physical properties, including mass, magnetism, physical state (solid, liquid, and gas), relative density (sinking and floating), solubility in water, and the ability to conduct or insulate thermal energy or electric energy; Readiness Standard (B) identify the boiling and freezing/melting points of water on the Celsius scale; Supporting Standard (C) demonstrate that some mixtures maintain physical properties of their ingredients such as iron filings and sand; Supporting Standard (D) identify changes that can occur in the physical properties of the ingredients of solutions such as dissolving salt in water or adding lemon juice to water. Supporting Standard **(3.5) Matter and energy**. The student knows that matter has measurable physical properties and those properties determine how matter is classified, changed, and used. The student is expected to (C) predict, observe, and record changes in the state of matter caused by heating or cooling. Supporting Standard	**Essence Statement A:** Identifies and classifies matter by its physical properties and determines how matter is changed.

Level 3

Prerequisite skill: demonstrate that things can be done to materials to change their physical properties such as cutting, folding, sanding, and melting

The student will be presented a material whose physical properties can be changed when an outside force is applied. The student will determine the original physical properties of the material. The physical properties will be recorded. After a force has been applied, the student will determine the physical properties of the material. The physical properties will be recorded. The student will compare the data. The student will generate a conclusion regarding how the force affected the physical properties of the material.

Predetermined Criteria
1. The student will determine the physical properties of the material before and after the force is applied.
2. The student will compare the data.
3. The student will generate a conclusion regarding how the force affected the physical properties of the material.

Process skill: communicate observations and justify explanations using student-generated data from simple descriptive investigations

Level 2

Prerequisite skill: classify objects by observable properties of the materials from which they are made such as larger and smaller, heavier and lighter, shape, color, and texture

The student will be presented a mixture that contains a combination of at least three items that when combined do not lose their individual physical properties. The student will sort the items in the mixture according to physical properties. The student will match a label to each sorted group. The student will identify a physical property of each group.

Predetermined Criteria
1. The student will sort the items in the mixture according to physical properties.
2. The student will match a label to each sorted group.
3. The student will identify a physical property of each group.

Process skill: communicate observations and provide reasons for explanations using student-generated data from simple descriptive investigations

Level 1

Prerequisite skill: describe, observe, and investigate properties and characteristics of common objects

The student will be presented an object. The student will explore the object. The student will participate in applying a force to the object that will change one of its physical properties. The student will respond to the change in the physical property after the force was applied.

Predetermined Criteria

1. The student will explore the object.
2. The student will participate in applying a force to the object that will change one of its physical properties.
3. The student will respond to the change in the physical property after the force was applied.

Definitions/Examples for STAAR Reporting Category 2 (5.6, 3.6)
Essence Statement B

The following definitions clarify terms used in the grade 5 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.

Levels 3, 2, and 1: page 9

wind – moving air. Wind creates movement and energy.

Level 3: page 9

In the Level 3 assessment task, the student will be investigating the effects of the force of wind on different objects. Objects selected for investigation should vary in weight and size and can be found within the school environment or be student-constructed. Directions for constructing a pinwheel, a weather-vane, and/or a wind-sock are easily found on the Internet.

Examples of appropriate objects for investigation include:

- pinwheel, weather-vane, wind-sock, feather, wind chime, flag, various balls such as ping-pong, tennis, and rubber, tissue or crepe paper streamers, rocks of various sizes, and cotton balls

For this task, the objects to be moved should be different but the wind force should be the same ensuring that only one variable is changed for each trial.

Levels 2 and 1: page 9

Examples of wind created by alternate sources include:

- fan (can cool a person)
- leaf blower (can make cleaning off surfaces easier)
- hair dryer (can help style/dry hair)

Level 1: page 9

In the level 1 assessment task, the student will experience the sensation of wind. In addition to using any of the alternate sources of created wind above, air blown through a straw can also simulate wind.

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 Expectations	**Essence of TEKS Knowledge & Skills Statement / STAAR-Tested Student Expectations**
(5.6) Force, motion, and energy. The student knows that energy occurs in many forms and can be observed in cycles, patterns, and systems. The student is expected to (A) explore the uses of energy, including mechanical, light, thermal, electrical, and sound energy; Readiness Standard (B) demonstrate that the flow of electricity in circuits requires a complete path through which an electric current can pass and can produce light, heat, and sound; Readiness Standard (C) demonstrate that light travels in a straight line until it strikes an object or travels through one medium to another and demonstrate that light can be reflected such as the use of mirrors or other shiny surfaces and refracted such as the appearance of an object when observed through water; Readiness Standard (D) design an experiment that tests the effect of force on an object. Supporting Standard **(3.6) Force, motion, and energy.** The student knows that forces cause change and that energy exists in many forms. The student is expected to (B) demonstrate and observe how position and motion can be changed by pushing and pulling objects to show work being done such as swings, balls, pulleys, and wagons. Supporting Standard	**Essence Statement B:** Recognizes force, motion, and energy and their relationships.

Level 3

Prerequisite skill: investigate the effects on an object by increasing or decreasing amounts of light, heat, and sound energy such as how the color of an object appears different in dimmer light or how heat melts butter

The student will conduct an investigation to determine the effects of the force of the wind on different objects. The student will record observations of the effects of the wind on the objects. The student will compare the collected data.

Predetermined Criteria
1. The student will conduct an investigation to determine the effects of the force of the wind on different objects.
2. The student will record observations of the effects of the wind on the objects.
3. The student will compare the collected data.

Process skill: communicate observations and justify explanations using student-generated data from simple descriptive investigations

Level 2

Prerequisite skill: identify and discuss how different forms of energy such as light, heat, and sound are important to everyday life

The student will identify an example of wind created by an alternate source. The student will assist in using the example of created wind energy. The student will identify a benefit of the example of created wind energy.

Predetermined Criteria
1. The student will identify an example of wind created by an alternate source.
2. The student will assist in using the example of created wind energy.
3. The student will identify a benefit of the example of created wind energy.

Process skill: plan and conduct simple descriptive investigations such as ways objects move

Level 1

Prerequisite skill: investigate and describe sources of energy including light, heat, and electricity

The student will experience the sensation of wind. The student will participate in using wind to move an object. The student will respond to the object being moved by wind.

Predetermined Criteria
1. The student will experience the sensation of wind.
2. The student will participate in using wind to move an object.
3. The student will respond to the object being moved by wind.

Definitions/Examples for STAAR Reporting Category 3 (5.8, 4.8, 3.8)
Essence Statement C

The following definitions clarify terms used in the grade 5 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 13

weather data for a three-day period for two different seasons – For the Level 3 assessment task, the weather data presented to the student should include temperature, precipitation, and wind conditions.

An example might look like:

Austin, Texas in the spring

Monday March 29	Tuesday March 30	Wednesday March 31
		
Sunny 67° Chance of Rain 0% Wind NW at 17 mph	Sunny 69° Chance of Rain 0% Wind N at 15 mph	Mostly Sunny 65° Chance of Rain 20% Wind S at 14 mph

Austin, Texas in the summer

Monday August 9	Tuesday August 10	Wednesday August 11
		
Sunny 100° Chance of Rain 0% Wind S at 5 mph	Sunny 103° Chance of Rain 0% Wind 0 mph	Sunny 101° Chance of Rain 0% Wind S at 5 mph

Weather data can be obtained from the Internet or be generated by the teacher.

The student will generate a list of appropriate activities for each of the two seasons. The generated list should include several entries. Using the example above, this might look like:

- Spring – fly a kite, plant seeds or flowers, take pictures of bluebonnets, make a bird feeder, go on a nature hike, use a butterfly net
- Summer – swim, go to the beach and/or a water park, build a sand castle, take a boat ride, go canoeing, have a lemonade stand

Levels 2 and 1: pages 13 and 14

Examples of representations of seasonal landscapes or events/weather related activities include:

- Winter
  - scenes of people wearing coats, sweaters, scarves, hats, and gloves and enjoying winter activities
  - landscapes covered with snow or ice, and trees with no leaves
  - actual winter clothing items
- Spring
  - scenes of people flying kites or planting seeds and gardens
  - landscapes covered with wildflowers and flowers with new blooms or buds
  - actual seed packets, kites, or small plants beginning to sprout
- Summer
  - scenes of people wearing summer clothing and enjoying outdoor activities such as swimming in pools or lakes, beach activities, boating, and picnics
  - scenes of Fourth of July parades and fireworks
  - actual items associated with summer such as bathing suits, beach balls, and sand pail and shovel
- Fall
  - scenes of people involved with activities such as raking leaves, carving pumpkins, or visiting a pumpkin patch
  - scenes of Thanksgiving gatherings/meals, turkey, pumpkin pie
  - landscapes covered with colorful trees and piles of fallen leaves
  - actual colorful leaves, pumpkins

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**
(5.8) Earth and space. The student knows that there are recognizable patterns in the natural world and among the Sun, Earth, and Moon system. The student is expected to (A) differentiate between weather and climate; Supporting Standard (B) explain how the Sun and the ocean interact in the water cycle; Supporting Standard (C) demonstrate that Earth rotates on its axis once approximately every 24 hours causing the day/night cycle and the apparent movement of the Sun across the sky; Readiness Standard (D) identify and compare the physical characteristics of the Sun, Earth, and Moon. Supporting Standard **(4.8) Earth and space.** The student knows that there are recognizable patterns in the natural world and among the Sun, Earth, and Moon system. The student is expected to (A) measure and record changes in weather and make predictions using weather maps, weather symbols, and a map key; Supporting Standard (B) describe and illustrate the continuous movement of water above and on the surface of Earth through the water cycle and explain the role of the Sun as a major source of energy in this process; Supporting Standard (C) collect and analyze data to identify sequences and predict patterns of change in shadows, tides, seasons, and the observable appearance of the Moon over time. Supporting Standard	**Essence Statement C:** Recognizes patterns in the natural world and among the Sun, Earth, and Moon system.

(3.8) Earth and space. The student knows there are recognizable patterns in the natural world and among objects in the sky. The student is expected to (D) identify the planets in Earth's solar system and their position in relation to the Sun. Supporting Standard	

Level 3

Prerequisite skill: identify the importance of weather and seasonal information to make choices in clothing, activities, and transportation

The student will be presented weather data for a three-day period for two different seasons. The student will determine the weather characteristics for each season. The student will generate a list of appropriate activities for each season. The student will justify why the activities are appropriate for each season.

Predetermined Criteria
1. The student will determine the weather characteristics for each season.
2. The student will generate a list of appropriate activities for each season.
3. The student will justify why the activities are appropriate for each season.

Process skill: make predictions based on observable patterns

Level 2

Prerequisite skill: identify characteristics of the seasons of the year and day and night

The student will be presented descriptions of each season and representations of seasonal landscapes or events for all four seasons. The student will match the representations to the description of the season. The student will identify the representations for the current season of the year. The student will arrange the remaining representations into sequential order beginning with the current season.

Predetermined Criteria
1. The student will match the representations to the description of the season.
2. The student will identify the representations for the current season of the year.
3. The student will arrange the remaining representations into sequential order beginning with the current season.

Level 1

Prerequisite skill: identify events that have repeating patterns, including seasons of the year and day and night

The student will be presented a representation for the current season and a representation for the season that follows. Representations for weather-related activities associated with each season will also be provided. The student will explore the representations. The student will participate in pairing the representations of weather-related activities to the representations of the seasons. The student will experience a weather-related activity associated with the current season.

Predetermined Criteria

1. The student will explore the representations.
2. The student will participate in pairing the representations of weather-related activities to the representations of the seasons.
3. The student will experience a weather-related activity associated with the current season.

Definitions/Examples for STAAR Reporting Category 4 (5.10, 3.10)
Essence Statement D

The following definitions clarify terms used in the grade 5 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.

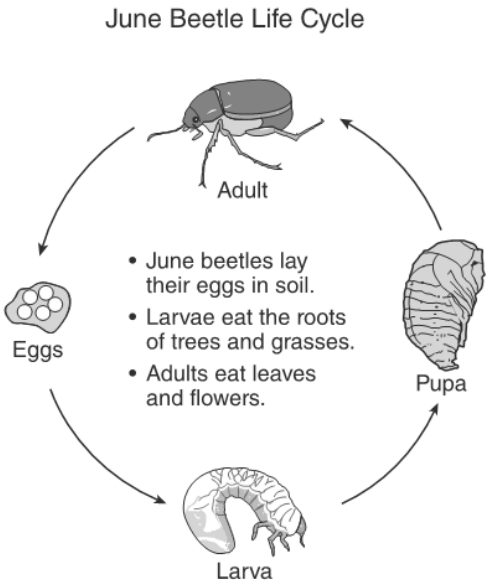
Levels 3, 2, and 1: pages 19 and 20

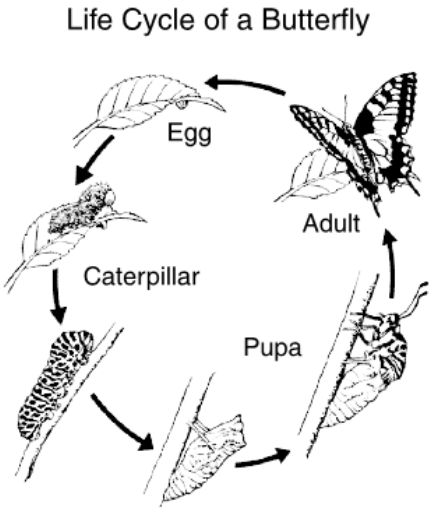
life cycle – The series of changes (stages) in the growth and development of an organism from its beginning as a life form to its mature state in which offspring are produced; and then the cycle begins again.

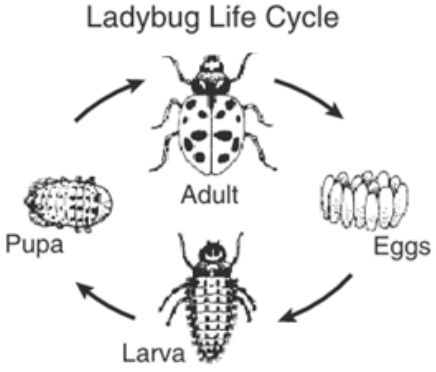
Level 3: page 19

life cycle of an insect – The Level 3 assessment task is specifically about a life cycle of an insect. In Predetermined Criteria 1, it will be important to remember that the task requires a fact about **each** stage in the insect life cycle.

- Butterflies, beetles, flies, bees, spiders, and wasps are examples of insects.
- Purposes for structures in adult phases might be: the antennae on a beetle enable it to feel out its environment and target food; the wings on an adult butterfly enable it to move about for food, shelter, and find a mate; and the hard shell-like covering on a ladybug protects its delicate wings and also protects it from predators.



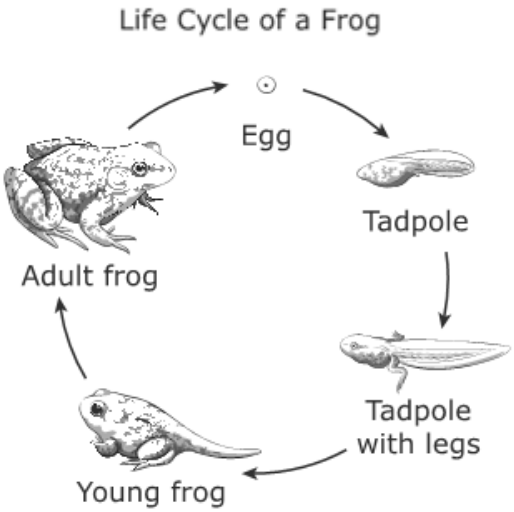


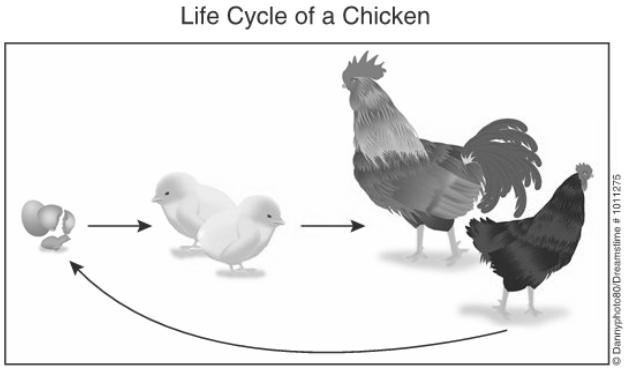


Level 2: page 19

life cycle of an animal – In the Level 2 assessment task, the student is asked to identify the first and last stages of an animal's life cycle. The first stage will correspond to the beginning stage and the last stage will correspond to the adult stage.

- See examples of a frog and chicken life cycle below:

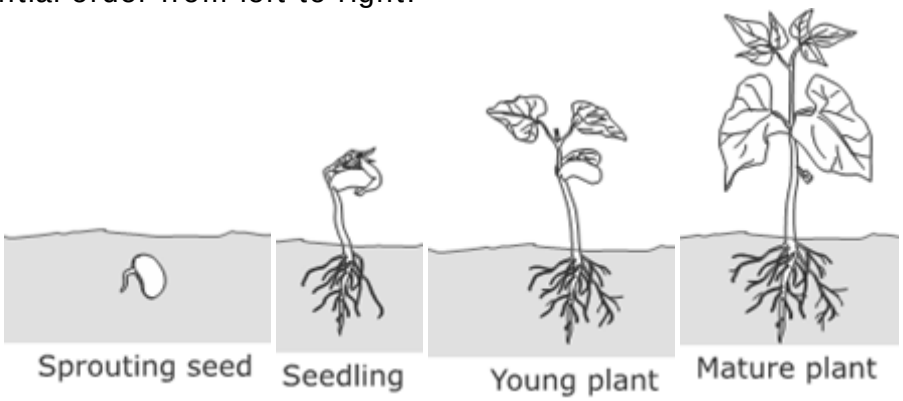


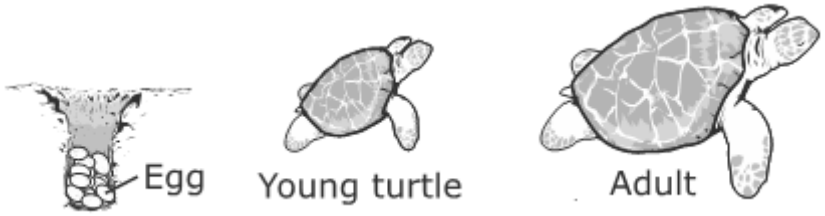


Level 1: page 20

life cycle of an organism – The Level 1 assessment task focuses on first (beginning) and last (adult) stages of an organism and a structural change in the last stage. Organisms are living things, such as plants and animals, including people.

- Examples could include people (baby, child, adult), a plant or turtle as shown below. It would be appropriate to present the representations of the life cycle stages in sequential order from left to right.





In the Level 1 assessment task, the student will respond to a structural change in the last stage of a life cycle of an organism. The structural change should help the adult organism survive. Examples of structural changes include:

- As a butterfly grows and develops into an adult, it becomes a creature with wings. The new external structure (wings) allows the butterfly to fly from plant to plant and obtain its food by sucking the juices of flowers and other plant parts.
- As a tadpole grows and develops into an adult frog, it becomes a creature with legs. The new external structure (legs) enables the frog to leave the water environment and move on to land to find food.
- As a seed sprouts and grows into a mature plant, various structures develop that help the plant survive:
    - Roots absorb water and minerals from the soil.
    - The stem supports the flowers, leaves, and branches and transports water and nutrients throughout the plant.
    - Leaves capture and absorb sunlight to make food the plant needs (photosynthesis).
    - Flower petals attract insects and bees to pollinate the flower. After pollination, seeds develop in a part of the flower. This helps the plant reproduce.

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**
(5.10) Organisms and environments. The student knows that organisms undergo similar life processes and have structures that help them survive within their environments. The student is expected to (A) compare the structures and functions of different species that help them live and survive such as hooves on prairie animals or webbed feet in aquatic animals; Readiness Standard (B) differentiate between inherited traits of plants and animals such as spines on a cactus or shape of a beak and learned behaviors such as an animal learning tricks or a child riding a bicycle; Readiness Standard (C) describe the differences between complete and incomplete metamorphosis of insects. Supporting Standard **(3.10) Organisms and environments**. The student knows that organisms undergo similar life processes and have structures that help them survive within their environments. The student is expected to (C) investigate and compare how animals and plants undergo a series of orderly changes in their diverse life cycles such as tomato plants, frogs, and lady bugs. Supporting Standard	**Essence Statement D:** Knows that organisms undergo life processes and have structures that help them survive within their environments.

Level 3

Prerequisite skill: investigate and record some of the unique stages that insects undergo during their life cycle

The student will be presented reference materials depicting the life cycle of a specific insect. The student will determine a fact about each stage which will be recorded and presented randomly to the student along with other facts and nonfacts provided by the teacher. The student will organize the facts by stage. The student will determine a purpose for one of the structures evident in the insect's adult stage.

Predetermined Criteria
1. The student will determine a fact about each stage.
2. The student will organize the facts by stage.
3. The student will determine a purpose for one of the structures evident in the insect's adult stage.

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

Level 2

Prerequisite skill: observe and record life cycles of animals such as a chicken, frog, or fish

The student will be presented pictures or representations of the stages in the life cycle of an animal in random order. The student will match a picture or representation of each life cycle stage to a description of each stage presented in random order. The student will identify the first and last stage of the life cycle. The teacher will add the remaining stages to complete the sequential order. The student will identify a difference in the animal's appearance between the first stage and the last stage.

Predetermined Criteria
1. The student will match a picture or representation of each life cycle stage to a description of each stage presented in random order.
2. The student will identify the first and last stage of the life cycle.
3. The student will identify a difference in the animal's appearance between the first stage and the last stage.

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

Level 1

Prerequisite skill: describe life cycles of organisms

The student will be presented representations of life cycle stages of an organism focusing on a structural change from the first stage to the last stage. The student will explore the representations. The student will acknowledge the first stage of the organism. The student will respond to the structural change in the last stage.

Predetermined Criteria
1. The student will explore the representations.
2. The student will acknowledge the first stage of the organism.
3. The student will respond to the structural change in the last stage.