

Content Area: Science
Standard: Life Science

Prepared Graduates:
➤ Explain and illustrate with examples how living systems interact with the biotic and abiotic environment

Grade Level Expectation: Second Grade

Concepts and skills students master:
1. Organisms depend on their habitat's nonliving parts to satisfy their needs

Evidence Outcomes

Students can:

- a. Use evidence to develop a scientific explanation about how organisms depend on their habitat.
- b. Analyze and interpret data about nonliving components of a habitat
- c. Assess and provide feedback on other scientific explanations regarding why an organism can survive in its habitat
- d. Use instruments to make observations about habitat components – for example, data can be collected from a fish tank to assess the environmental health (dissolved oxygen, pH, Nitrogen content).

21st Century Skills and Readiness Competencies

Inquiry Questions:

- What are the basic needs of plants and animals?
- How are the basic needs of all living things similar and different?
- How do living things depend on their environment?
- How does an organism respond when basic needs are not met?

Relevance and Application:

- Living things depend on the health of their habitats.
- Different organisms have different needs.

Nature of Science:

- Describe different ways that scientists seek to understand about organisms and their interactions with the environment.
- Collaborate with other students in developing a scientific explanation about how organisms depend on their habitat.

Content Area: Science
Standard: Life Science

Prepared Graduates:

- Analyze the relationship between structure and function in living systems at a variety of organizational levels, and recognize living systems' dependence on natural selection

Grade Level Expectation: Second Grade

Concepts and skills students master:

2. Each plant or animal has different structures or behaviors that serve different functions

Evidence Outcomes | **21st Century Skills and Readiness Competencies**

Students can:

- a. Use evidence to develop an explanation as to why a habitat is or is not suitable for a specific organism
- b. Analyze and interpret data about structures or behaviors of a population that help that population survive

Inquiry Questions:

- What different structures do plants and animals have that perform the same functions? For example, what different structure do plants and animals have to get water?

Relevance and Application:

- A single environment can support a variety of living things that use different kinds and amounts of resources.
- Body designs, such as the skull of a woodpecker or the nose of a dog, serves specific and unique jobs.

Nature of Science:

- Give feedback regarding the advantages of specific structures and behaviors.
- Share observations, and provide and respond to feedback on ideas about the advantages of specific structures and behaviors.

Content Area: Science
Standard: Physical Science

Prepared Graduates:

- Observe, explain, and predict natural phenomena governed by Newton's laws of motion, acknowledging the limitations of their application to very small or very fast objects

Grade Level Expectation: Second Grade

Concepts and skills students master:

1. Changes in speed or direction of motion are caused by forces such as pushes and pulls

Evidence Outcomes

Students can:

- a. Identify and predict how the direction or speed of an object may change due to an outside force
- b. Analyze and interpret observable data about the impact of forces on the motion of objects

21st Century Skills and Readiness Competencies

Inquiry Questions:

- What must be known about a force to predict how it will change an object's motion?
- How does applying a force affect the way an object moves?
- How do an object's properties affect how it will move when a force is applied?

Relevance and Application:

- Technology makes our lives easier by applying what we know about how forces can affect objects such as tires, bicycles, and snow throwers.
- In many recreational activities, such as tug-of-war, there is a relationship between forces and changes in motion.

Nature of Science:

- Select appropriate tools for data collection.
- Measure the change in speed or direction of an object using appropriate units.
- Collaboratively design an experiment, identifying the constants and variables.