

Content Area: Science
Standard: Life Science

Prepared Graduates:

- Analyze how various organisms grow, develop, and differentiate during their lifetimes based on an interplay between genetics and their environment

Grade Level Expectation: First Grade

Concepts and skills students master:

1. Offspring have characteristics that are similar to but not exactly like their parents' characteristics

Evidence Outcomes

Students can:

- a. Use evidence to analyze similarities and differences between parents and offspring in a variety of organisms including both plants and animals
- b. Analyze and interpret data regarding the similarities and differences between parents and offspring
- c. Question peers about evidence used in developing ideas about similarities and differences between parents and offspring
- d. Interpret information represented in pictures, illustrations, and simple charts

21st Century Skills and Readiness Competencies

Inquiry Questions:

- How are you like your parents?
- In what ways do offspring resemble their parents?

Relevance and Application:

- Diversity – or variation – exists within populations of living organisms.
- Family photographs often reveal similar physical traits.
- Parents eye color can be different their child's.

Nature of Science:

- Compare and contrast data, recognizing that this is a process scientists would do in their work.
- Question peers about the evidence used in developing their ideas about the similarities and differences between parents and offspring.

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: First Grade

Concepts and skills students master:

2. An organism is a living thing that has physical characteristics to help it survive

Evidence Outcomes

Students can:

- Identify organisms and use evidence based scientific explanations for **classifying** them into groups
- Analyze and interpret data about the needs of plants and animals
- Use direct observations and other evidence to support ideas concerning physical characteristics that help plants and animals survive

21st Century Skills and Readiness Competencies

Inquiry Questions:

- How do the needs of plants and animals differ?
- What helps a specific plant or animal survive?

Relevance and Application:

- Animals and plants have characteristics that help them survive in the local environment. For example, the thick fur of animals such as raccoons, bears, and mule deer helps them survive the cold winters in Colorado.
- A living thing can be harmed if needed resources are lacking.

Nature of Science:

- Ask testable questions about the needs of an organism.
- Predict the outcome for an organism if a need is removed.

Content Area: Science
Standard: Physical Science

Prepared Graduates:

- Apply an understanding of atomic and molecular structure to explain the properties of matter, and predict outcomes of chemical and nuclear reactions

Grade Level Expectation: First Grade

Concepts and skills students master:

1. Solids and liquids have unique properties that distinguish them

Evidence Outcomes

Students can:

- a. Analyze and interpret observations about solids and liquids and their unique properties
- b. Identify the similarities and differences of two or more groups of solids or liquids
- c. Classify solids and liquids based on their properties, and justify your choice based on evidence

21st Century Skills and Readiness Competencies

Inquiry Questions:

- What do all liquids have in common? What are some differences they can have and still be considered liquids?
- What do all solids have in common? What are some differences they can have and still be considered solids?
- What properties of liquids can be used to sort them?
- What properties of solids can be used to sort them?

Relevance and Application:

- The properties of solids and liquids help us understand how to use matter. For example, we not build a bridge out of tissue because it is not strong enough.
- There are practical reasons for sorting liquids or solids.

Nature of Science:

- Share results of experiments with others.
- Recognize that observations are an important part of science.
- Conduct collaborative experiments.