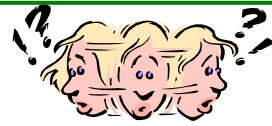


1st Grade Science Essential Questions



Standard 1: Physical Science

? What if states of matter stayed the same?

Standard 2: Life Science

? Why aren't all organisms identical to their parents?

? What does it mean to be alive?

Standard 3: Earth Systems Science

? How do Earth's materials support life?

1st Grade Science Curriculum Dashboard



Colorado Science Standard #1: Physical Science

K-12 Students Understand ...

- ✦ Newton's laws describe motion.
- ✦ Atoms combine or decay to form new substances.
- ✦ Energy exists in various forms, is transformed, and conserved.

1st Grade Students Understand ...

- Solids and liquids have unique properties that distinguish them.

Colorado Science Standard #2: Life Science

K-12 Students Understand ...

- ✦ A relationship exists between structure and function in living systems at a variety of organizational levels, and living systems depend on natural selection.
- ✦ Living things interact with the environment.
- ✦ Genetics and the environment affect how organisms grow, develop, and change.
- ✦ Changes in species (biological evolution) explain the diversity of life.

1st Grade Students Understand ...

- Offspring have characteristics that are similar to, but not exactly like their parents' characteristics.
- An organism is a living thing that has physical characteristics to help it survive.

Colorado Science Standard #3: Earth Science Systems

K-12 Students Understand ...

- ✦ Earth's geologic history and place in space are relevant to the processes that have shaped our planet.
- ✦ Earth's geosphere, atmosphere, hydrosphere, and biosphere interact as a complex system.
- ✦ Humans are dependent on the diversity of resources provided by Earth and Sun.

1st Grade Students Understand ...

- Earth's materials can be compared and classified based on their properties

What's the Intended Learning? 1st Grade Learning Targets (◆) and Supporting Evidence Outcomes

draft June 20, 2011

Essential to Know or Safety Net (E): Knowledge and skills that are **essential** for all 1st Graders to **master**, with non-mastery leading to intervention
Important to Know (I): Knowledge and skills that are **important** for all 1st Graders to **know** and **mastered by most students**
Nice to Know (N): Knowledge and skills that are **introduced** to all 1st Graders and **mastered by advanced students**



DOK =Depth of Knowledge
 1 = Recall of facts or a simple task
 2 = Skills and Concepts require students to make decisions or question
 3 = Strategic Thinking requires students to explain or generalize information
 4 = Extended Thinking requires developing & thinking over time or complex analysis

1 = Grade Level
 S = Science
 1 = Refers to Learning Target #
 a = Refers to specific Evidence Outcome

Standard 1: Physical Science

- ◆ **LT1.** I can describe and compare solids and liquids. (DOK 1-3)
- 1S-1a. Analyze and interpret observations about solids and liquids and their unique properties (DOK 1-3) (E)
- 1S-1b. Identify the similarities and differences of two or more groups of solids or liquids (DOK 1-2) (E)
- 1S-1c. Classify solids and liquids based on their properties, and justify your choice based on evidence (DOK 1-3) (E)

Standard 2: Life Science

- ◆ **LT2.** I recognize offspring have some similar characteristics to their parents. (DOK 1-2)
- 1S-2a. Use evidence to analyze similarities and differences between parents and offspring in a variety of organisms including both plants and animals (DOK 1-2) (E)
- 1S-2b. Analyze and interpret data regarding the similarities and differences between parents and offspring (DOK 1-2) (I)
- 1S-2c. Question peers about evidence used in developing ideas about similarities and differences between parents and offspring (DOK 1-2) (N)
- ◆ **LT3.** I can explain why living things have characteristics that help them survive. (DOK 1-3)
- 1S-3a. Identify organisms and use evidence based scientific explanations for classifying them into groups (DOK 1-3) (E)
- 1S-3b. Analyze and interpret data about the needs of plants and animals (DOK 1-2) (E)
- 1S-3c. Use direct observations and other evidence to support ideas concerning physical characteristics that help plants and animals survive (DOK 1-3) (I)

Standard 3: Earth Systems Science

- ◆ **LT4.** I can compare and sort Earth's materials. (DOK 1-3)
- 1S-4a. Using a variety of tools, identify and classify Earth's materials based on their properties (DOK 1-3) (I)
- 1S-4b. Sort, group, and classify Earth's materials based on observations and explorations (DOK 1-2) (I)
- 1S-4c. Make predictions about how a material on Earth might be useful based on its properties (DOK 1-3) (I)
- 1S-4d. Communicate ideas about the differences between soils from different places (DOK 1-2) (I)
- 1S-4e. Analyze the impact of reducing, reusing, and recycling various materials (DOK 1-3) (I)

K-5 Nature of Science Learning Targets

The K-5 Nature of Science Learning Targets (NoS LT) describe the ethical and critical thinking skills a student develops as a result of mastering the Grade Level Understandings.

NoS LT 1. I can ask a testable question, conduct an experiment, collect and analyze data, and share my conclusion

NoS LT 2. I can conduct ethical research and identify a valid experiment.

Physical Science

1. Share results of experiments with others. (DOK 1-2) **NoS LT1**
2. Recognize that observations are an important part of science. (DOK 1) **NoS LT1**
3. Conduct collaborative experiments. (DOK 2-4) **NoS LT2**

Life Science

1. Compare and contrast data, recognizing that this is a process scientists would do in their work. (DOK 1-2) **NoS LT1**
2. Question peers about the evidence used in developing their ideas about the similarities and differences between parents and offspring. (DOK 2) **NoS LT2**
3. Ask testable questions about the needs of an organism. (DOK 2) **NoS LT1**
4. Predict the outcome for an organism if a need is removed. (DOK 2-3) **NoS LT2**

Earth Systems Science

1. The same materials can be sorted in a number of ways based on different characteristics. (DOK 1-2) **NoS LT1**
2. Scientists make predictions based on what they know. (DOK 1) **NoS LT2**