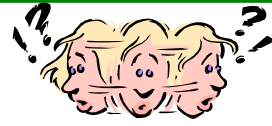


## 2<sup>nd</sup> Grade Science Essential Questions



### Standard 1: Physical Science

? How does motion affect the world?

### Standard 2: Life Science

? Does who we are depend on where we live?

? Does everything serve a purpose?

### Standard 3: Earth Systems Science

? What if weather never changed?

## 2<sup>nd</sup> 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.

#### 2<sup>nd</sup> Grade Students Understand ...

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

### 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.

#### 2<sup>nd</sup> Grade Students Understand ...

- Organisms depend on their habitat's nonliving parts to satisfy their needs.
- Each plant or animal has different structures or behaviors that serve different functions.

### 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.

#### 2<sup>nd</sup> Grade Students Understand ...

- Weather and the changing seasons impact the environment and organisms such as humans, plants, and other animals.

# What's the Intended Learning? 2<sup>nd</sup> Grade Learning Targets (◆) and Supporting Evidence Outcomes

**Essential to Know or Safety Net (E):** Knowledge and skills that are **essential** for all 2<sup>nd</sup> Graders to **master**, with non-mastery leading to intervention  
**Important to Know (I):** Knowledge and skills that are **important** for all 2<sup>nd</sup> Graders to **know** and **mastered** by **most** students  
**Nice to Know (N):** Knowledge and skills that are **introduced** to all 2<sup>nd</sup> 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

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

## Standard 1: Physical Science

◆ **LT1.** I can demonstrate how forces (such as pushes and pulls) cause changes in speed or direction of motion. (DOK 1-2)

2S-1a. Identify and predict how the direction or speed of an object may change due to an outside force (DOK 1-2) (E)

2S-1b. Analyze and interpret observable data about the impact of forces on the motion of objects (DOK 1-2) (E)

## Standard 2: Life Science

◆ **LT2.** I can explain how living things depend on their habitats' non-living parts. (DOK 1-3)

2S-2a. Use evidence to develop a scientific explanation about how organisms depend on their habitat (DOK 2-3) (E)

2S-2b. Analyze and interpret data about nonliving components of a habitat (DOK 1-2) (I)

2S-2c. Assess and provide feedback on other scientific explanations regarding why an organism can survive in its habitat (DOK 1-3) (E)

2S-2d. 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) (DOK 1-2) (I)

◆ **LT3.** I can explain how plants and animals look and act differently to help them survive. (DOK 1-3)

2S-3a. Use evidence to develop an explanation as to why a habitat is or is not suitable for a specific organism (DOK 1-3) (E)

2S-3b. Analyze and interpret data about structures or behaviors of a population that help that population survive (DOK 1-2) (N)

## Standard 3: Earth Systems Science

◆ **LT4.** I can explain how weather and seasons impact living things and the environment. (DOK 1-3)

2S-4a. Use evidence to develop a scientific explanation for how the weather and changing seasons impacts the organisms such as humans, plants, other animals, and the environment (DOK 1-3) (E)

2S-4b. Analyze and interpret data such as temperatures in different locations (Sun or shade) at different times and seasons as evidence of how organisms and the environment are influenced by the weather and changing seasons (DOK 1-3) (I)

2S-4c. Analyze ways in which severe weather contributes to catastrophic events such as floods and forest fires (DOK 1-2) (N)

## 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. Select appropriate tools for data collection. (DOK 1-2) **NoS LT1**
2. Measure the change in speed or direction of an object using appropriate units. (DOK 1-2) **NoS LT1**
3. Collaboratively design an experiment, identifying the constants and variables. (DOK 1-2) **NoS LT 1 & 2**

### Life Science

1. Describe different ways that scientists seek to understand about organisms and their interactions with the environment. (DOK 1) **LT2**
2. Collaborate with other students in developing a scientific explanation about how organisms depend on their habitat. (DOK 1-2) **LT1**
3. Give feedback regarding the advantages of specific structures and behaviors. (DOK 2-3) **LT1**
4. Share observations, and provide and respond to feedback on ideas about the advantages of specific structures and behaviors. (DOK 1-3) **LT1**

### Earth Systems Science

1. Ask testable questions about weather and the seasons. (DOK 2) **LT1**
2. Make predictions, share thinking, and ask others how they know that organisms and the environment are influenced by the weather and changing seasons. (DOK 2-3) **LT1**
3. Select and use appropriate tools to measure, record, and communicate data about the weather using appropriate units. (DOK 1-2) **LT1**