

### Disciplinary Core Idea

#### **K.LS1.C: Organization for Matter and Energy Flow in Organisms**

All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow. (K-LS1-1)

### Disciplinary Core Idea

#### **K.ESS2.E: Biogeology**

Plants and animals can change their environment. (K-ESS2-2)

### Disciplinary Core Idea

#### **K.ESS3.A: Natural Resources**

Living things need water, air, and resources from the land, and they live in places that have the things they need. Humans use natural resources for everything they do. (K-ESS3-1)

### Disciplinary Core Idea

#### **K.ESS3.C: Human Impacts on Earth Systems**

Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impacts on the land, water, air, and other living things. (K-ESS3-3)

### Disciplinary Core Idea

#### **K.ETS1.B: Developing Possible Solutions**

Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people. (K-ESS3-3)

### Disciplinary Core Idea

#### **K.PS2.A: Forces and Motion**

Pushes and pulls can have different strengths and directions. (K-PS2-2)

### Disciplinary Core Idea

#### **K.PS2.A: Forces and Motion**

Pushing or pulling on an object can change the speed or direction of its motion and can start or stop it. (K-PS2-2)

### Disciplinary Core Idea

#### **K.ETS1.A: Defining and Delimiting Engineering Problems**

A situation that people want to change or create can be approached as a problem to be solved through engineering. Such problems may have many acceptable solutions. (K-PS2-2)

### Disciplinary Core Idea

#### **K.ESS3.B: Natural Hazards**

Some kinds of severe weather are more likely than others in a given region. Weather scientists forecast severe weather so that the communities can prepare for and respond to these events. (K-ESS3-2)

## Disciplinary Core Idea

### **K.ETS1.A: Defining and Delimiting Engineering Problems**

Asking questions, making observations, and gathering information are helpful in thinking about problems. (K-ESS3-2)

## Performance Expectation

### **K-ESS2-2: Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.**

**Clarification Statement:** Examples of plants and animals changing their environment could include a squirrel digs in the ground to hide its food and tree roots can break concrete.

**Assessment Boundary:** none

## Performance Expectation

### **K-ESS3-1: Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live.**

**Clarification Statement:** Examples of relationships could include that deer eat buds and leaves, therefore, they usually live in forested areas; and, grasses need sunlight so they often grow in meadows. Plants, animals, and their surroundings make up a system.

**Assessment Boundary:** none

### Performance Expectation

#### **K-ESS3-3: Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.**

**Clarification Statement:** Examples of human impact on the land could include cutting trees to produce paper and using resources to produce bottles. Examples of solutions could include reusing paper and recycling cans and bottles.

**Assessment Boundary:** none

### Performance Expectation

#### **K-LS1-1: Use observations to describe patterns of what plants and animals (including humans) need to survive.**

**Clarification Statement:** Examples of patterns could include that animals need to take in food but plants do not; the different kinds of food needed by different types of animals; the requirement of plants to have light; and, that all living things need water.

**Assessment Boundary:** none

### Performance Expectation

#### **K-PS2-2: Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.**

**Clarification Statement:** Examples of problems requiring a solution could include having a marble or other object move a certain distance, follow a particular path, and knock down other objects. Examples of solutions could include tools such as a ramp to increase the speed of the object and a structure that would cause an object such as a marble or ball to turn.

**Assessment Boundary:** Assessment does not include friction as a mechanism for change in speed.

## Performance Expectation

**K-ESS3-2: Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.**

**Clarification Statement:** Emphasis is on local forms of severe weather.

**Assessment Boundary:** none

## Science and Engineering Practice

### Developing and Using Models

Modeling in K–2 builds on prior experiences and progresses to include using and developing models (i.e., diagram, drawing, physical replica, diorama, dramatization, or storyboard) that represent concrete events or design solutions.

Use a model to represent relationships in the natural world. (K-ESS3-1)

## Science and Engineering Practice

### Analyzing and Interpreting Data

Analyzing data in K–2 builds on prior experiences and progresses to collecting, recording, and sharing observations.

Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions. (K-LS1-1)

## Science and Engineering Practice

### Engaging in Argument from Evidence

Engaging in argument from evidence in K–2 builds on prior experiences and progresses to comparing ideas and representations about the natural and designed world(s).

Construct an argument with evidence to support a claim. (K-ESS2-2)

## Science and Engineering Practice

### Obtaining, Evaluating, and Communicating Information

Obtaining, evaluating, and communicating information in K–2 builds on prior experiences and uses observations and texts to communicate new information.

Communicate solutions with others in oral and/or written forms using models and/or drawings that provide detail about scientific ideas. (K-ESS3-3)

## Science and Engineering Practice

### Analyzing and Interpreting Data

Analyzing data in K–2 builds on prior experiences and progresses to collecting, recording, and sharing observations.

Analyze data from tests of an object or tool to determine if it works as intended. (K-PS2-2)

## Science and Engineering Practice

### Asking Questions and Defining Problems

Asking questions and defining problems in K–2 builds on prior experiences and progresses to simple descriptive questions.

Ask questions based on observations to find more information about the designed world. (K-ESS3-2)

## Science and Engineering Practice

### Obtaining, Evaluating, and Communicating Information

Obtaining, evaluating, and communicating information in K–2 builds on prior experiences and uses observations and texts to communicate new information.

Read grade-appropriate texts and/or use media to obtain scientific information to describe patterns in the natural world. (K-ESS3-2)

## Crosscutting Concept

### Patterns

Patterns in the natural and human designed world can be observed and used as evidence. (K-LS1-1)

### Crosscutting Concept

#### **Cause and Effect**

Events have causes that generate observable patterns. (K-ESS3-3)

### Crosscutting Concept

#### **Systems and System Models**

Systems in the natural and designed world have parts that work together. (K-ESS2-2), (K-ESS3-1)

### Crosscutting Concept

#### **Cause and Effect**

Simple tests can be designed to gather evidence to support or refute student ideas about causes. (K-PS2-2)

## Crosscutting Concept

### **Cause and Effect**

Events have causes that generate observable patterns. (K-ESS3-2)

## Connection to Nature of Science

### **Science Knowledge Is Based on Empirical Evidence**

Scientists look for patterns and order when making observations about the world. (K-LS1-1)

## Connection to Engineering, Technology, and Applications of Science

### **Influence of Science, Engineering, and Technology on Society and the Natural World**

People depend on various technologies in their lives; human life would be very different without technology. (K-ESS3-2)

## Connection to Engineering, Technology, and Applications of Science

### **Interdependence of Science, Engineering, and Technology**

People encounter questions about the natural world every day. (K-ESS3-2)

## Common Core State Standards for ELA/Literacy

### **Reading Informational Text**

#### **RI.K.1 - Key Ideas and Details**

With prompting and support, ask and answer questions about key details in a text. (K-ESS2-2)

## Common Core State Standards for ELA/Literacy

### **Speaking & Listening**

#### **SL.K.5 - Presentation of Knowledge and Ideas**

Add drawings or other visual displays to descriptions as desired to provide additional detail. (K-ESS3-1)

## Common Core State Standards for ELA/Literacy

### Card Type name

#### W.K.1 - Text Types and Purposes

Use a combination of drawing, dictating, and writing to compose opinion pieces in which they tell a reader the topic or the name of the book they are writing about and state an opinion or preference about the topic or book. (K-ESS2-2)

## Common Core State Standards for ELA/Literacy

### Card Type name

#### W.K.2 - Text Types and Purposes

Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic. (K-ESS2-2), (K-ESS3-3)

## Common Core State Standards for ELA/Literacy

### Card Type name

#### W.K.7 - Research to Build and Present Knowledge

Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them). (K-LS1-1)

**Common Core State Standards for Mathematics**

**Counting & Cardinality**

**K.CC - undefined**

Counting and Cardinality (K-ESS3-1)

**Common Core State Standards for Mathematics**

**Measurement & Data**

**K.MD.A.2 - Describe and compare measurable attributes.**

Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. (K-LS1-1)

**Common Core State Standards for Mathematics**

**Mathematical Practices**

**MP.2 - Reason abstractly and quantitatively**

Reason abstractly and quantitatively. (K-ESS3-1)

**Common Core State Standards for Mathematics**

**Mathematical Practices**

**MP.4 - Model with mathematics**

Model with mathematics. (K-ESS3-1)