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**Vocabulary**

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Superintendent

Mark Coscarella, Ed.D.
Deputy Superintendent

Mara Lud
Executive Director of Instructional Learning

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**Crosscutting Concepts**

**K-ESS-2-1**

Patterns

Patterns in the natural world can be observed, used to describe phenomena, and used as evidence.

**K-ESS3-2**

Cause and Effect

Events have causes that generate observable patterns.

**K-PS3-1**

Energy and Matter

Objects may break into smaller pieces and be put together into larger pieces, or change shapes.

**K-PS3-2**

Cause and Effect

Events have causes that generate observable patterns.

**Resources**

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<table>
<thead>
<tr>
<th>Kindergarten</th>
<th>Science</th>
<th>First Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Earth’s Systems: Weather and Climate</strong>&lt;br&gt;K-ESS2-1</td>
<td><strong>Earth and Human Activity: Weather and Climate</strong>&lt;br&gt;K-ESS3-2</td>
<td><strong>Energy: Weather and Climate</strong>&lt;br&gt;K-PS3-1</td>
</tr>
<tr>
<td><strong>I CAN STATEMENT</strong></td>
<td><strong>I CAN</strong> describe the weather.</td>
<td><strong>I CAN</strong> describe how sunlight effects the Earth’s surface.</td>
</tr>
<tr>
<td><strong>Core Idea</strong></td>
<td><strong>Weather and Climate</strong>&lt;br&gt;Weather is the combination of sunlight, wind, snow or rain, and temperature in a particular region at a particular time. People measure these conditions to describe and record the weather and to notice patterns over time.</td>
<td><strong>Natural Hazards</strong>&lt;br&gt;Sunlight warms Earth’s surface.</td>
</tr>
<tr>
<td><strong>Weather and Climate</strong></td>
<td><strong>Use and share observations of local weather conditions to describe patterns over time.</strong>&lt;br&gt;Clarification Statement: Examples of qualitative observations could include descriptions of the weather (such as sunny, cloudy, rainy, and warm); examples of quantitative observations could include numbers of sunny, windy, and rainy days in a month. Examples of patterns could include that it is usually cooler in the morning than in the afternoon and the number of sunny days versus cloudy days in different months.</td>
<td><strong>Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.</strong>&lt;br&gt;Clarification Statement: Emphasis is on local forms of severe weather.</td>
</tr>
<tr>
<td><strong>Standard</strong></td>
<td><strong>Make observations to determine the effect of sunlight on Earth’s surface.</strong>&lt;br&gt;Clarification Statement: Examples of Earth’s surface could include sand, soil, rocks, and water.</td>
<td><strong>Constructing Explanations and Designing Solutions</strong>&lt;br&gt;Constructing explanations and designing solutions in K–2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions.</td>
</tr>
<tr>
<td><strong>Science and Engineering Practices</strong></td>
<td><strong>Asking Questions and Defining Problems</strong>&lt;br&gt;Asking questions and defining problems in grades K–2 builds on prior experiences and progresses to simple descriptive questions that can be tested.</td>
<td><strong>Planning and Carrying Out Investigations</strong>&lt;br&gt;Planning and carrying out investigations to answer questions or test solutions to problems in K–2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions.</td>
</tr>
<tr>
<td><strong>Analyzing and Interpreting Data</strong></td>
<td><strong>Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions.</strong>&lt;br&gt;Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions.</td>
<td><strong>Make observations (firsthand or from media) to collect data that can be used to make comparisons.</strong></td>
</tr>
</tbody>
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Vocabulary

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Superintendent

Mark Coscarella, Ed.D.
Deputy Superintendent

Mara Lud
Executive Director of Instructional Learning

Delsa Chapman
Director of Magnet Programs & High Schools

Crosscutting Concepts

Cause and Effect

Simple tests can be designed to gather evidence to support or refute student ideas about causes.

Resources *

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<table>
<thead>
<tr>
<th>Kindergarten</th>
<th>Science</th>
<th>Second Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Forces and Interactions: Pushes and Pulls K-PS2-1</strong></td>
<td><strong>Forces and Interactions: Pushes and Pulls K-PS2-1</strong></td>
<td><strong>Notes</strong></td>
</tr>
<tr>
<td><strong>I CAN STATEMENT</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- ☐ I CAN compare the effects of pushing and pulling on objects.
- ☐ I CAN change the speed and direction of objects.

<table>
<thead>
<tr>
<th>Core Idea</th>
</tr>
</thead>
</table>

**Forces and Motion**

Pushes and pulls can have different strengths and directions. Pushing or pulling on an object can change the speed or direction of its motion and can start or stop it.

**Types of Interactions**

When objects touch or collide, they push on one another and can change motion.

<table>
<thead>
<tr>
<th>Standard</th>
</tr>
</thead>
</table>

Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pull on the motions of an object.

**Clarification Statement:** Examples of pushes or pulls could include a string attached to an object, a person stopping a rolling ball, and two objects colliding and pushing on each other.

<table>
<thead>
<tr>
<th>Science and Engineering Practices</th>
</tr>
</thead>
</table>

**Planning and Carrying Out Investigations**

Planning and carrying out investigations to answer questions or test solutions to problems in K–2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions.

- With guidance, plan and conduct an investigation in collaboration with peers.

**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.
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Vocabulary

Crosscutting Concepts

<table>
<thead>
<tr>
<th>Concept</th>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patterns</td>
<td>K-LS1-1</td>
<td>Patterns in the natural and human designed world can be observed and used as evidence.</td>
</tr>
<tr>
<td>Systems and System Models</td>
<td>K-ESS2-2</td>
<td>Systems in the natural and designed world have parts that work together.</td>
</tr>
<tr>
<td>Systems and System Models</td>
<td>K-ESS3-1</td>
<td>Systems in the natural and designed world have parts that work together.</td>
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## Kindergarten Science

### From Molecules to Organisms: Structures and Processes K-LS1-1

**I CAN STATEMENT**

- **I CAN** tell why some things are living and some things are not.
- **I CAN** tell what plants and animals need to live.

**Core Idea**

**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.

**Science and Engineering Practices**

**Analyzing and Interpreting Data**

- 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.

**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.**

### Earth’s Systems K-ESS2-2

**I CAN STATEMENT**

- **I CAN** tell how plants and animals change the environment to meet their needs.

**Core Idea**

**Biogeology**

Plants and animals can change their environment.

**Science and Engineering Practices**

**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, storyboard) that represent concrete events or design solutions.
  - **Use a model to represent relationships in the natural world.**

### Earth and Human Activity K-ESS3-1

**I CAN STATEMENT**

- **I CAN** create a model or drawing to show how plants and animals live together.

**Core Idea**

**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.

**Science and Engineering Practices**

**Developing and Using Models**

- Use a model to represent the relationship between the needs of different plants or 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.
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Crosscutting Concepts

Structure and Function

The shape and stability of structures of natural and designed objects are related to their function(s).

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Kindergarten • Fourth Quarter

Pacing Guide

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## Kindergarten

### Core Idea

#### Earth and Human Activity  K-ESS3-3

**I CAN STATEMENT**

- **☐ I CAN** plan ways to reduce, reuse, and recycle.
- **☐ I CAN** make choices that reduce my impact on the environment.

#### Science and Engineering Practices

**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.

**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 natural and/or designed world.
- Define a simple problem that can be solved through the development of a new or improved object or tool.

**Developing and Using Models**

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

- Develop a simple model based on evidence to represent a proposed object or tool.

**Analyzing and Interpreting Data**

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

- Analyze data from tests of an object or tool to determine if it works as intended.

### Core Idea

#### 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.

**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.

**I CAN**

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

**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.

**I CAN**

- Ask questions, make observations, and gather information to define a simple problem that can be solved through the development of a new or improved object or tool.

**Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.**

**I CAN**

- Build a tool to solve a problem.

**I CAN**

- Draw a picture of a tool solving a problem.

**I CAN**

- Compare two tools and tell which one will better solve a problem.

### Optimizing the Design Solution

Because there is always more than one possible solution to a problem, it is useful to compare and test designs.

- Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.