



# Kindergarten • First Quarter Pacing Guide



# Science

## Introduction to Your Science Pacing Guide

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### Vocabulary

### 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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# Kindergarten

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# First Quarter

Earth's Systems: Weather and Climate K-ESS2-1	Earth and Human Activity: Weather and Climate K-ESS3-2	Energy: Weather and Climate K-PS3-1	Energy: Weather and Climate K-PS3-2
<b>I CAN STATEMENT</b>			
<input type="checkbox"/> <b>I CAN</b> describe the weather.	<input type="checkbox"/> <b>I CAN</b> be prepared for severe weather.	<input type="checkbox"/> <b>I CAN</b> describe how sunlight effects the Earth's surface.	<input type="checkbox"/> <b>I CAN</b> build something to protect the ground from the hot sun.
<b>Core Idea</b>			
<b>Weather and Climate</b> 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.	<b>Natural Hazards</b> 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.	<b>Conservation of Energy and Energy Transfer</b> Sunlight warms Earth's surface.	<b>Conservation of Energy and Energy Transfer</b> Sunlight warms Earth's surface.
<b>Standard</b>			
<b>Use and share observations of local weather conditions to describe patterns over time.</b>  <i>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.</i>	<b>Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.*</b>  <i>Clarification Statement: Emphasis is on local forms of severe weather.</i>	<b>Make observations to determine the effect of sunlight on Earth's surface.</b>  <i>Clarification Statement: Examples of Earth's surface could include sand, soil, rocks, and water.</i>	<b>Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.</b>  <i>Clarification Statement: Examples of structures could include umbrellas, canopies, and tents that minimize the warming effect of the sun.</i>
<b>Science and Engineering Practices</b>			
<b>Analyzing and Interpreting Data</b>  Analyzing data in K–2 builds on prior experiences and progresses to collecting, recording, and sharing observations. <ul style="list-style-type: none"> <li>▶ Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions.</li> </ul>	<b>Asking Questions and Defining Problems</b>  Asking questions and defining problems in grades K–2 builds on prior experiences and progresses to simple descriptive questions that can be tested. <ul style="list-style-type: none"> <li>▶ Ask questions based on observations to find more information about the designed world.</li> </ul>	<b>Planning and Carrying Out Investigations</b>  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. <ul style="list-style-type: none"> <li>▶ Make observations (firsthand or from media) to collect data that can be used to make comparisons.</li> </ul>	<b>Constructing Explanations and Designing Solutions</b>  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. <ul style="list-style-type: none"> <li>▶ Use tools and materials provided to design and build a device that solves a specific problem or a solution to a specific problem.</li> </ul>

DRAFT - Revised



# Kindergarten • Second Quarter Pacing Guide



# Science

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### Vocabulary

### 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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Forces and Interactions: Pushes and Pulls K-PS2-1	Forces and Interactions: Pushes and Pulls K-PS2-1	Notes	Notes
<b>I CAN STATEMENT</b>			
<input type="checkbox"/> <b>I CAN</b> compare the effects of pushing and pulling on objects.	<input type="checkbox"/> <b>I CAN</b> change the speed and direction of objects.		
<b>Core Idea</b>			
<b>Forces and Motion</b> 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. <b>Types of Interactions</b> When objects touch or collide, they push on one another and can change motion.	<b>Forces and Motion</b> 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.		
<b>Standard</b>			
<b>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.</b>  <i>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.</i>	<b>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.</b>  <i>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.]</i>		
<b>Science and Engineering Practices</b>			
<b>Planning and Carrying Out Investigations</b>  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. <ul style="list-style-type: none"> <li>▶ With guidance, plan and conduct an investigation in collaboration with peers.</li> </ul>	<b>Analyzing and Interpreting Data</b>  Analyzing data in K–2 builds on prior experiences and progresses to collecting, recording, and sharing observations. <ul style="list-style-type: none"> <li>▶ Analyze data from tests of an object or tool to determine if it works as intended.</li> </ul>		



# Kindergarten • Third Quarter Pacing Guide



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### Vocabulary

### Crosscutting Concepts

**K-LS1-1**

**Patterns**

Patterns in the natural and human designed world can be observed and used as evidence.

**K-ESS2-2**

**Systems and System Models**

Systems in the natural and designed world have parts that work together.

**K-ESS3-1**

**Systems and System Models**

Systems in the natural and designed world have parts that work together.

### Resources \*

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

Earth's Systems K-ESS2-2

Earth and Human Activity K-ESS3-1

## 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.

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

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

## 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.

### Biogeology

Plants and animals can change their environment.

### 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.

## Standard

**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.*

**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.*

**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.*

## Science and Engineering Practices

### 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.

### 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.

### 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.



# Kindergarten • Fourth Quarter Pacing Guide



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<b>Vocabulary</b>
<b>Crosscutting Concepts</b>
<p><b>Structure and Function</b></p> <p>The shape and stability of structures of natural and designed objects are related to their function(s).</p>
<b>Resources *</b>

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# Fourth Quarter

Earth and Human Activity K-ESS3-3	Engineering Design K-2-ETS1-1	Engineering Design K-2-ETS1-2	Engineering Design K-2-ETS1-3
<b>I CAN STATEMENT</b>			
<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>I CAN</b> plan ways to reduce, reuse, and recycle.</li> <li><input type="checkbox"/> <b>I CAN</b> make choices that reduce my impact on the environment.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>I CAN</b> build a tool to solve a problem.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>I CAN</b> draw a picture of a tool solving a problem.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>I CAN</b> compare two tools and tell which one will better solve a problem.</li> </ul>
<b>Core Idea</b>			
<p><b>Human Impacts on Earth Systems</b></p> <p>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.</p>	<p><b>Defining and Delimiting an Engineering Problem</b></p> <p>Asking questions, making observations, and gathering information are helpful in thinking about problems</p>	<p><b>Developing Possible Solutions</b></p> <p>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.</p>	<p><b>Optimizing the Design Solution</b></p> <p>Because there is always more than one possible solution to a problem, it is useful to compare and test designs.</p>
<b>Standard</b>			
<p><b>Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.</b></p> <p><i>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></p>	<p><b>Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.</b></p>	<p><b>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.</b></p>	<p><b>Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.</b></p>
<b>Science and Engineering Practices</b>			
<p><b>Obtaining, Evaluating, and Communicating Information</b></p> <p>Obtaining, evaluating, and communicating information in K-2 builds on prior experiences and uses observations and texts to communicate new information.</p> <ul style="list-style-type: none"> <li>▶ Communicate solutions with others in oral and/or written forms using models and/or drawings that provide detail about scientific ideas.</li> </ul>	<p><b>Asking Questions and Defining Problems</b></p> <p>Asking questions and defining problems in K-2 builds on prior experiences and progresses to simple descriptive questions.</p> <ul style="list-style-type: none"> <li>▶ Ask questions based on observations to find more information about the natural and/or designed world.</li> <li>▶ Define a simple problem that can be solved through the development of a new or improved object or tool.</li> </ul>	<p><b>Developing and Using Models</b></p> <p><b>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 story board) that represent concrete events or design solutions.</b></p> <ul style="list-style-type: none"> <li>▶ Develop a simple model based on evidence to represent a proposed object or tool.</li> </ul>	<p><b>Analyzing and Interpreting Data</b></p> <p>Analyzing data in K-2 builds on prior experiences and progresses to collecting, recording, and sharing observations.</p> <ul style="list-style-type: none"> <li>▶ Analyze data from tests of an object or tool to determine if it works as intended.</li> </ul>