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Vocabulary

vibrate
investigate
plan
observation
construct
illuminated,
beam of light
materials
design
communicating

Crosscutting Concepts

1-PS4-1  1-PS4-2  1-PS4-3
Cause and Effect:
Simple tests can be designed to gather evidence to support or refute student ideas about causes.

1-PS4-4
Influence of Engineering, Technology, and Science, on Society and the Natural World:
People depend on various technologies in their lives; human life would be very different without technology.

Resources *

* List your recommended texts and resources - we will be collecting them at the end of the year.
<table>
<thead>
<tr>
<th>Grade 1</th>
<th>Science</th>
<th>First Quarter</th>
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<tr>
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<td>Waves and Their Applications in Technologies for Information 1-PS4-2</td>
<td>Waves and Their Applications in Technologies for Information 1-PS4-3</td>
</tr>
<tr>
<td><strong>I CAN STATEMENT</strong></td>
<td></td>
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</tr>
<tr>
<td>☐ I CAN plan an investigation.</td>
<td>☐ I CAN show that sound can make something move.</td>
<td>☐ I CAN plan and do an investigation to find out what happens when I put an objects made of different materials in a beam of light.</td>
</tr>
<tr>
<td>☐ I CAN do my investigation.</td>
<td>☐ I CAN make observations to prove that objects can only be seen in the dark when there is light.</td>
<td>☐ I CAN plan and do an investigation to find out what happens when I put an objects made of different materials in a beam of light.</td>
</tr>
<tr>
<td>☐ I CAN show that vibrating materials can make a sound.</td>
<td></td>
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</tr>
<tr>
<td><strong>Core Idea</strong></td>
<td></td>
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</tr>
<tr>
<td><strong>Wave Properties</strong></td>
<td><strong>Electromagnetic Radiation</strong></td>
<td><strong>Information Technologies and Instrumentation</strong></td>
</tr>
<tr>
<td>Sound can make matter vibrate, and vibrating matter can make sound.</td>
<td>Objects can be seen if light is available to illuminate them or if they give off their own light.</td>
<td>People also use a variety of devices to communicate (send and receive information) over long distances.</td>
</tr>
<tr>
<td><strong>Standard</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.</td>
<td>Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.</td>
<td></td>
</tr>
<tr>
<td>Clarification Statement: Examples of vibrating materials that make sound could include tuning forks and plucking a stretched string. Examples of how sound can make matter vibrate could include holding a piece of paper near a speaker making sound and holding an object near a vibrating tuning fork.</td>
<td>Clarification Statement: Examples of materials could include those that are transparent (such as clear plastic), translucent (such as wax paper), opaque (such as cardboard), and reflective (such as a mirror).</td>
<td></td>
</tr>
<tr>
<td><strong>Science and Engineering Practices</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Planning and Carrying Out Investigations</strong></td>
<td><strong>Constructing Explanations and Designing Solutions</strong></td>
<td><strong>Planning and Carrying Out Investigations</strong></td>
</tr>
<tr>
<td>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>
<td>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>
<td>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>▶ Plan and conduct investigations collaboratively to produce data to serve as the basis for evidence to answer a question.</td>
<td>▶ Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena.</td>
<td>▶ Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena.</td>
</tr>
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First Grade • Second Quarter

Pacing Guide

Introduction to Your Science Pacing Guide

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Vocabulary

predict
relate
seasonal patterns
data

Crosscutting Concepts

1-ESS1-1  1-ESS1-2

Patterns

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

Resources *

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Yvonne Caamal Canul
Superintendent

Mark Coscarella, Ed.D.
Deputy Superintendent

Mara Lud
Executive Director of Instructional Learning

Delsa Chapman
Director of Magnet Programs & High Schools

Many thanks to...
the teachers and administrators who helped develop and revise the pacing guides.
### Core Idea

#### The Universe and its Stars
Patterns of the motion of the sun, moon, and stars in the sky can be observed, described, and predicted.

#### Earth and the Solar System
Seasonal patterns of sunrise and sunset can be observed, described, and predicted.

### Standard

#### Use observations of the sun, moon, and stars to describe patterns that can be predicted.
Clarification Statement: Examples of patterns could include that the sun and moon appear to rise in one part of the sky, move across the sky, and set; and stars other than our sun are visible at night but not during the day.

#### Make observations at different times of year to relate the amount of daylight to the time of year.
Clarification Statement: Emphasis is on relative comparisons of the amount of daylight in the winter to the amount in the spring or fall.

### 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.

#### 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 more formal investigations, based on fair tests, which provide evidence to support an explanation or design a solution.
- Make observations (firsthand or from media) to collect data that can be used to make comparisons.
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<tr>
<td><strong>Science and Engineering Practices</strong></td>
<td></td>
</tr>
</tbody>
</table>

### I CAN STATEMENT

☐ I CAN explain how plants and animals will grow up to look in some ways like their parent.

☐ I CAN investigate and tell about likenesses and differences among the same kind of a plant or animal.

### Core Idea

**A: Inheritance of Traits**
Young animals are very much, but not exactly like, their parents. Plants also are very much, but not exactly, like their parents.

**B: Variation of Traits**
Individuals of the same kind of plant or animal are recognizable as similar but can also vary in many ways.

### Standard

Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.

Clarification Statement: Examples of patterns could include features plants or animals share. Examples of observations could include leaves from the same kind of plant are the same shape but can differ in size; and, a particular breed of dog looks like its parents but is not exactly the same. Assessment Boundary: Assessment does not include inheritance or animals that undergo metamorphosis or hybrids.

### Science and Engineering Practices

**Constructing Explanations and Designing Solutions**

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.

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Vocabulary
- mimicking
- external parts
- survive
- off-spring
- predators
- environment

Crosscutting Concepts

1-LS1-1 Structure and Function
The shape and stability of structures of natural and designed objects are related to their function(s).

1-LS1-2 Patterns
Patterns in the natural and human designed world can be observed and used as evidence.

Resources *

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First Grade • Fourth Quarter

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### Grade 1 Science

#### Fourth Quarter

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<th>From Molecules to Organisms: Structures and Processes 1-LS1-1</th>
<th>From Molecules to Organisms: Structures and Processes 1-LS1-2</th>
<th>Notes</th>
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<tbody>
<tr>
<td><strong>I CAN STATEMENT</strong></td>
<td><strong>I CAN STATEMENT</strong></td>
<td></td>
</tr>
<tr>
<td>☐ I CAN describe a human problem that will be solved.</td>
<td>☐ I CAN explain that plants and animals have young.</td>
<td></td>
</tr>
<tr>
<td>☐ I CAN design a solution by telling what helps the plant/animal grow and survive and how they use information they get from the world around them.</td>
<td>☐ I CAN tell how animal parents help their young to survive.</td>
<td></td>
</tr>
<tr>
<td>☐ I CAN use materials to solve the problem and will copy the way an animal or a plant survives.</td>
<td>☐ I CAN explain if my plan worked.</td>
<td></td>
</tr>
</tbody>
</table>

### Core Idea

**Structure and Function**

All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water, and air. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow.

**Information Processing**

Animals have body parts that capture and convey different kinds of information needed for growth and survival. Animals respond to these inputs with behaviors that help them survive. Plants also respond to some external inputs.

### Standard

**Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.**

**Clarification Statement:** Examples of human problems that can be solved by mimicking plant or animal solutions could include designing clothing or equipment to protect bicyclists by mimicking turtle shells, and animal scales; stabilizing structures by mimicking animal tails and roots on plants; keeping out intruders by mimicking thorns on branches and animal quills; and, detecting intruders by mimicking eyes and ears.

**Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.**

**Clarification Statement:** Examples of patterns of behaviors could include the signals that offspring make (such as crying, cheeping, and other vocalizations) and the responses of the parents (such as feeding, comforting, and protecting the offspring).

### Science and Engineering Practices

**Constructing Explanations and Designing Solutions**

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.

- Use materials to design a device that solves a specific problem or a solution to a specific problem.

**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 use media to obtain scientific information to determine patterns in the natural world.