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### Crosscutting Concepts

- **2-PS1-1 Patterns**
  Patterns in the natural and human designed world can be observed.

- **2-PS1-2 Cause and Effect**
  Simple tests can be designed to gather evidence to support or refute student ideas about causes.

- **2-PS1-3 Energy and Matter**
  Objects may break into smaller pieces and be put together into larger pieces, or change shapes.

- **2-PS1-4 Cause and Effect**
  Events have causes that generate observable patterns.

### Resources *

* List your recommended texts and resources - we will be collecting them at the end of the year.

### Vocabulary

<table>
<thead>
<tr>
<th>Construct</th>
<th>Properties</th>
<th>Flexibility</th>
<th>Assemble</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observe</td>
<td>Analyze</td>
<td>Rigid</td>
<td>Disassemble</td>
</tr>
<tr>
<td>Investigation</td>
<td>Task</td>
<td>Bendable</td>
<td>Reassemble</td>
</tr>
<tr>
<td>Properties</td>
<td>Texture</td>
<td>Temperature</td>
<td>Evidence</td>
</tr>
<tr>
<td>Classify</td>
<td>Hardness</td>
<td>Solid</td>
<td>Reversible</td>
</tr>
<tr>
<td>Argument</td>
<td>Strength</td>
<td>Liquid</td>
<td>Irreversible</td>
</tr>
<tr>
<td>Physical</td>
<td>Absorbent</td>
<td>Gas</td>
<td></td>
</tr>
</tbody>
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### Grade 2 Science First Quarter

<table>
<thead>
<tr>
<th>Matter and Its Interactions 2-PS1-1</th>
<th>Matter and Its Interactions 2-PS1-2</th>
<th>Matter and Its Interactions 2-PS1-3</th>
<th>Matter and Its Interactions 2-PS1-4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I CAN STATEMENT</strong></td>
<td><strong>I CAN STATEMENT</strong></td>
<td><strong>I CAN STATEMENT</strong></td>
<td><strong>I CAN STATEMENT</strong></td>
</tr>
<tr>
<td>□ I CAN describe objects based on their physical characteristics.</td>
<td>□ I CAN decide which object would have the best properties for a particular task.</td>
<td>□ I CAN disassemble an object made of small pieces and reassemble it into something new.</td>
<td>□ I CAN construct an argument with evidence that some changes caused by heating can be reversed and some cannot.</td>
</tr>
<tr>
<td>□ I CAN and conduct an investigation to describe and classify different kinds of materials by their observable properties.</td>
<td>□ I CAN analyze and test different materials to determine which materials have the properties that are best suited for an intended purpose.</td>
<td>□ I CAN make observations how an object made of a small set of pieces can be disassembled and made into a new object.</td>
<td>□ I CAN construct an argument with evidence that some changes caused by cooling can be reversed and some cannot.</td>
</tr>
<tr>
<td><strong>Core Idea</strong></td>
<td><strong>Core Idea</strong></td>
<td><strong>Core Idea</strong></td>
<td><strong>Core Idea</strong></td>
</tr>
<tr>
<td>Different kinds of matter exist and many of them can be either solid or liquid, depending on temperature. Matter can be described and classified by its observable properties.</td>
<td>Different properties are suited to different purposes.</td>
<td>A great variety of objects can be built up from a small set of pieces.</td>
<td>Heating or cooling a substance may cause changes that can be observed. Sometimes these changes are reversible, and sometimes they are not.</td>
</tr>
<tr>
<td><strong>Standard</strong></td>
<td><strong>Standard</strong></td>
<td><strong>Standard</strong></td>
<td><strong>Standard</strong></td>
</tr>
<tr>
<td>Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.</td>
<td>Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.</td>
<td>Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object.</td>
<td>Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.</td>
</tr>
<tr>
<td>Clarification Statement: Observations could include color, texture, hardness, and flexibility. Patterns could include the similar properties that different materials share.</td>
<td>Clarification Statement: Examples of properties could include, strength, flexibility, hardness, texture, and absorbency.</td>
<td>Clarification Statement: Examples of pieces could include blocks, building bricks, or other assorted small objects.</td>
<td>Clarification Statement: Examples of reversible changes could include materials such as water and butter at different temperatures. Examples of irreversible changes could include cooking an egg, freezing a plant leaf, and heating paper.</td>
</tr>
<tr>
<td><strong>Science and Engineering Practices</strong></td>
<td><strong>Science and Engineering Practices</strong></td>
<td><strong>Science and Engineering Practices</strong></td>
<td><strong>Science and Engineering Practices</strong></td>
</tr>
<tr>
<td>Planning and Carrying Out Investigations</td>
<td>Analyzing and Interpreting Data</td>
<td>Constructing Explanations and Designing Solutions</td>
<td>Engaging in Argument from Evidence</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 provides data to support explanations or design solutions.</td>
<td>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.</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. ▶ Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena.</td>
<td>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.</td>
</tr>
</tbody>
</table>
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---

**Vocabulary**

<table>
<thead>
<tr>
<th>Evidence</th>
<th>Plate tectonics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural</td>
<td>Map</td>
</tr>
<tr>
<td>Rapid</td>
<td>Model</td>
</tr>
<tr>
<td>Processes</td>
<td>Diagram</td>
</tr>
<tr>
<td>Solution</td>
<td>Pattern</td>
</tr>
<tr>
<td>Erosion</td>
<td>Compare</td>
</tr>
</tbody>
</table>

**Crosscutting Concepts**

<table>
<thead>
<tr>
<th>2-ESS1-1</th>
<th>Stability and Change: Things may change slowly or rapidly.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-ESS2-1</td>
<td>Stability and Change: Things may change slowly or rapidly.</td>
</tr>
<tr>
<td>2-ESS2-2</td>
<td>Patterns: Patterns in the natural world can be observed.</td>
</tr>
<tr>
<td>2-ESS2-3</td>
<td>Patterns: Patterns in the natural world can be observed.</td>
</tr>
</tbody>
</table>

**Resources * **

- Evidence
- Natural
- Rapid
- Processes
- Solution
- Erosion
- Compare

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Yvonne Caamal Canul
Superintendent

Mark Coscarella, Ed.D.
Deputy Superintendent

Mara Luda
Executive Director of Instructional Learning

Delsa Chapman
Director of Magnet Programs & High Schools

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Lansing School District
# Grade 2 Science Second Quarter

<table>
<thead>
<tr>
<th>Core Idea</th>
<th>Earth’s Systems 2-ESS2-1</th>
<th>Earth’s Systems 2-ESS2-2</th>
<th>Earth’s Systems 2-ESS2-3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I CAN STATEMENT</strong></td>
<td>☐ I CAN research how some of Earth’s natural events happen quickly, and some slowly.</td>
<td>☐ I CAN compare solutions for wind and water erosion.</td>
<td>☐ I CAN create a model of the land and water in a local or regional area.</td>
</tr>
<tr>
<td></td>
<td>☐ I CAN use information to provide evidence that Earth events can occur quickly or slowly.</td>
<td>☐ I CAN compare solutions designed to slow or prevent wind or water from changing the shape of the land on the natural world.</td>
<td>☐ I CAN develop a model to represent the shapes and kinds of land and bodies of water in a Michigan area.</td>
</tr>
<tr>
<td></td>
<td>☐ I CAN observe changes in Earth’s physical events.</td>
<td>☐ I CAN develop a model to represent the shapes and kinds of land and bodies of water in an area.</td>
<td>☐ I CAN obtain information to identify where water is found and that it can be solid or liquid.</td>
</tr>
</tbody>
</table>

## I CAN STATEMENT

- **I CAN** research how some of Earth’s natural events happen quickly, and some slowly.
- **I CAN** use information to provide evidence that Earth events can occur quickly or slowly.
- **I CAN** observe changes in Earth’s physical events.

## Core Idea

### The History of Planet Earth

Some events happen very quickly; others occur very slowly, over a time period much longer than one can observe.

**I CAN ST ATEMENT:** Examples of events and timescales could include volcanic explosions and earthquakes, which happen quickly and erosion of rocks, which occurs slowly.

**Clarification Statement:** Examples of solutions could include different designs of dikes and windbreaks to hold back wind and water, and different designs for using shrubs, grass, and trees to hold back the land.

### Earth Materials and Systems

Wind and water can change the shape of the land.

**I CAN** find information on the location and types of water around the world.

**Clarification Statement:** Examples of solutions could include different designs of dikes and windbreaks to hold back wind and water, and different designs for using shrubs, grass, and trees to hold back the land.

**Clarification Statement:** Examples of solutions could include different designs of dikes and windbreaks to hold back wind and water, and different designs for using shrubs, grass, and trees to hold back the land.

### Plate Tectonics and Large-Scale System Interactions

Maps show where things are located. One can map the shapes and kinds of land and water in any area.

**Obtain information to identify where water is found on Earth and that it can be solid or liquid.**

**Obtain information to identify where fresh water is found on Earth, including the Great Lakes and Great Lakes Basin.**

### The Roles of Water in Earth’s Surface Processes

Water is found in the ocean, rivers, lakes, and ponds. Water exists as solid ice and in liquid form.

**Obtain information to identify where water is found on Earth and that it can be solid or liquid.**

**Obtain information to identify where fresh water is found on Earth, including the Great Lakes and Great Lakes Basin.**

## 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.

- Make observations from several sources to construct an evidence-based account for natural phenomena.
- Compare multiple solutions to a problem.

### Constructing Explanations and Designing Solutions

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- Compare multiple solutions to a problem.

### 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.

- Develop a model to represent patterns in the natural world.

### 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.

- Obtain information using various texts, text features (e.g., headings, tables of contents, glossaries, electronic menus, icons), and other media that will be useful in answering a scientific question.
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Vocabulary

Observation
Illustrate
Function
Physical model
Plan
Conduct
Investigation

Crosscutting Concepts

2-ETS1-2  
Structure and Function

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

Resources *

Vocabulary

Observation
Illustrate
Function
Physical model
Plan
Conduct
Investigation

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## Grade 2 Science Third Quarter

### I CAN STATEMENT

- **Engineering Design 2-ETS1-1**
  - I CAN build or improve a tool to solve a problem by asking questions, making observations and gathering information.

- **Engineering Design 2-ETS1-2**
  - I CAN draw a picture of a tool that will illustrate how its shape will solve a problem.

- **Engineering Design 2-ETS1-3**
  - I CAN analyze test data to compare two tools and tell which one will better solve a problem.

### Core Idea

**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. Asking questions, making observations, and gathering information are helpful in thinking about problems. Before beginning to design a solution, it is important to clearly understand the problem.

**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.

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

### Standard

- **Asking Questions and Defining Problems**
  - 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.

- **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.**

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

### Science and Engineering Practices

**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(s).
  - 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 include using and developing models (i.e., diagram, drawing, physical replica, diorama, dramatization, or storyboard) 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**
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Second Grade • Fourth Quarter

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<th>Habitat</th>
<th>Living</th>
<th>Nonliving</th>
<th>Categorize</th>
<th>Disperse</th>
<th>Mimic</th>
<th>Pollination</th>
</tr>
</thead>
</table>

Crosscutting Concepts

<table>
<thead>
<tr>
<th>2-LS4-1</th>
<th>2LS2-1</th>
<th>2-LS2-2</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Structure and Function</td>
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<th>Science</th>
<th>Fourth Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Core Idea</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Biodiversity and Humans</strong></td>
<td>Interdependent Relationships in Ecosystems</td>
<td>Interdependent Relationships in Ecosystems</td>
</tr>
<tr>
<td>There are many different kinds of living things in any area, and they exist in different places on land and in water.</td>
<td>Plants depend on water and light to grow.</td>
<td>Plants depend on animals for pollination or to move their seeds around.</td>
</tr>
<tr>
<td><strong>Standard</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>I CAN STATEMENT</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ I CAN compare the many different types of plants and animals that live in different habitats.</td>
<td>☐ I CAN investigate if plants need water and sunlight to grow.</td>
<td>☐ I CAN create a model that spreads seeds or pollen just like animals do.</td>
</tr>
<tr>
<td>☐ I CAN make observations of plants and animals to compare the diversity of life in different habitats.</td>
<td>☐ I CAN plan and conduct an investigation to determine if plants need sunlight and water to grow.</td>
<td>☐ I CAN develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.</td>
</tr>
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<td></td>
<td></td>
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<td>▶ Make observations (firsthand or from media) to collect data which can be used to make comparisons.</td>
<td>▶ Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence to answer a question.</td>
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