

Elementary - 2nd Grade Science

North Boone CUSD 200

UNITS (3/3 SELECTED)

- Unit 1: Matter
- Unit 2: Earth's Surface Changes
- Unit 3: Habitats - Plants & Their Needs

SUGGESTED DURATION

30 lessons
20 lessons
30 lessons

Unit 1: Matter

Elementary - 2nd Grade Science - Last Updated on June 4, 2019

STANDARDS

2-PS1-1.: Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.

2-PS1-2.: Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.

2-PS1-4.: Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.

PRIORITY STANDARDS

2-PS1-1.	Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.
2-PS1-4.	Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.

Unit 1: Matter

Elementary - 2nd Grade Science - Last Updated on June 4, 2019

DESIRED RESULTS

Enduring Understandings	Essential Question(s)
<p>Different kinds of matter exist.</p> <p>Many kinds of matter can be either solid or liquid, depending on temperature.</p> <p>Matter can be described and classified by its observable properties</p> <p>Heating or cooling a substance may cause changes that can be observed. Sometimes these changes are reversible, and sometimes they are not.</p>	<p>How do we describe matter?</p> <p>What are the properties of solids?</p> <p>What are the properties of liquids and gases?</p> <p>How do heating and cooling affect matter?</p>

Students will know (Knowledge):	Students will be able to (Skills):
<ul style="list-style-type: none">• Key concepts and vocabulary associated with matter, including: matter, property, solid, liquid, gas, mass, pattern, volume, melt, heat, burn, cool, freeze, thermometer, temperature, evaporate, condense• Everything that takes up space is matter• Properties that define the different states of matter• Ways to compare and describe matter using properties such as color, mass, shape, taste, thickness, living, nonliving• How solids can be described by observable properties such as size, shape, color, and mass• Natural solids are found in nature; and, human-made materials are made by people• Some properties of solids include: having shape, color, and texture; and being breakable• Liquids take the shape of the container• Gasses have no shape or volume of their own and fill whatever space is available• How temperature changes matter through heating and cooling• Clues that heating may be causing a chemical change	<ul style="list-style-type: none">• Use key concepts and vocabulary associated with matter in discussions, inquiry activities, and performance tasks• Generate and record observations about matter, solids, changes in state between liquids and gases, and how heating or cooling can change matter• Observe and examples of solids, liquids, and gases in the classroom and sort them by their properties• Use the sense of touch to describe matter• Make a material and test its properties to determine if it is a solid• plan and conduct an investigation to determine whether an object is a solid• Investigate to find what happens to the shape of water in in different containers• Plan and carry out an investigation to see the gas in bubbles• Observe water change from a solid to a liquid to a gas• Observe how heat affects ice• Explore (via simulation) how heating and cooling can change matter and which changes can be reversed

Unit 1: Matter

Elementary - 2nd Grade Science - Last Updated on June 4, 2019

Students will know (Knowledge):	Students will be able to (Skills):
	<ul style="list-style-type: none">• Observe how different objects are affected by heating and cooling• Predict and depict how butter changes when heated and cooled.

Unit 2: Earth's Surface Changes

Elementary - 2nd Grade Science - Last Updated on June 4, 2019

STANDARDS

2-ESS1-1.: Use information from several sources to provide evidence that Earth events can occur quickly or slowly.

2-ESS2-1.: Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.

PRIORITY STANDARDS

2-ESS1-1.	Use information from several sources to provide evidence that Earth events can occur quickly or slowly.
------------------	---

Unit 2: Earth's Surface Changes

Elementary - 2nd Grade Science - Last Updated on June 4, 2019

DESIRED RESULTS

Enduring Understandings	Essential Question(s)
Some events happen very quickly; others occur very slowly, over a time period much longer than one can observe.	How do wind and water change Earth's surface?
Wind and water can change the shape of the land.	How does Earth's surface change quickly?
	How can people slow the changes to Earth's surface?

Students will know (Knowledge):	Students will be able to (Skills):
<ul style="list-style-type: none">• Key concepts and vocabulary associated with Earth's surface changes, including: erosion, rock, soil, flood, weathering, sand, landslide, earthquake, volcano, erupt, lava, coast, windbreak, natural, resource• How water and wind can change the surface of Earth• How different landforms, including sea arches, sand dunes, canyons, and rock pedestals, were formed by weathering and erosion• How the land changes after the eruption of a volcano• Different parts of a volcano, including: crater, lava flow, ash cloud, and flank• Three causes of landslides, including: erosion, rain, and human activity• Different structures used to prevent wind and water erosion, including: sea walls, breakwaters, plantings• Different methods used to stop erosion from beaches and farm fields	<ul style="list-style-type: none">• Use key concepts and vocabulary associated with Earth's surface changes in discussions, inquiry activities, and performance tasks• Generate and record observations about events that cause rapid changes to Earth's surface and how people change the surface of Earth• Formulate questions about how water affects rock, changes to Earth that happen quickly, and how to slow changes to Earth's surface• Model what happens when wind erodes land• Model a quick change to Earth's surface• Contrast rapid changes to Earth's surface from such things as landslides, earthquakes, and volcanic eruptions against slow changes such as weathering• Model a volcanic eruption to observe how Earth's surface is changed• Model a quick change to Earth's surface by drawing a before-and-after picture of an earthquake, a volcano, a landslide, or a flood• Investigate how waves affect a beach• Explore (via simulation) how wind and windbreaks can affect farm soil and the production of crops• Design and test a way to slow down wind erosion at the beach and then compare its effectiveness with ways designed by classmates

Unit 2: Earth's Surface Changes

Elementary - 2nd Grade Science - Last Updated on June 4, 2019

Students will know (Knowledge):	Students will be able to (Skills):
	<ul style="list-style-type: none">• Design a solution for flooding and compare it to solutions designed by classmates

Unit 3: Habitats - Plants & Their Needs

Elementary - 2nd Grade Science - Last Updated on June 4, 2019

STANDARDS

2-LS2-1.: Plan and conduct an investigation to determine if plants need sunlight and water to grow.

2-LS2-2.: Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.

2-LS4-1.: Make observations of plants and animals to compare the diversity of life in different habitats.

PRIORITY STANDARDS

2-LS2-1.	Plan and conduct an investigation to determine if plants need sunlight and water to grow.
2-LS4-1.	Make observations of plants and animals to compare the diversity of life in different habitats.

Unit 3: Habitats - Plants & Their Needs

Elementary - 2nd Grade Science - Last Updated on June 4, 2019

DESIRED RESULTS

Enduring Understandings	Essential Question(s)
<p>There are many different kinds of living things in any area they exist in different places on land and in water.</p> <p>Plants depend on water and light to grow.</p> <p>Plants depend on animals for pollination or to move their seeds around.</p>	<p>What is a habitat?</p> <p>Why do plants need water?</p> <p>Why do plants need light?</p> <p>How do plants get help making new plants?</p>

Students will know (Knowledge):	Students will be able to (Skills):
<ul style="list-style-type: none"> • Key concepts and vocabulary associated with habitats and plants and their needs, including: habitat, predator, prey, shelter, food chain, flower, stem, leaves, root, germinate, nutrient, mineral, seed, seedling, fruit, pollen, pollination, dispersal • How plants and animals get what they need from their habitat • How a habitat is just right for the plants and animals that live there • How plant parts, including stems, leaves, flowers, and roots, help a plant live and grow • The function of plant roots, including bringing water into the plant and anchoring the plant • What seeds need to grow into plants, including the right temperature, nutrients, and water • Why roots grow down and shoots grow up • Plants need light, air, water and food to live and grow • Leaves use light, water, and air to make food which is stored to use when there is no light available to make food • Different ways that seeds can travel, including by wind, water, or animals (including humans) • How flowers make seeds that become plants 	<ul style="list-style-type: none"> • Use key concepts and vocabulary associated with habitats and plants and their needs in discussions, inquiry activities, and performance tasks • Sort pictures of plants and animals that live in different habitats • Make a model of a habitat for humans • Generate and record observations about what plants need to live and the interdependency of plants and animals • Investigate to determine if a seed needs water to grow or not • Plan and carry out an investigation to find out if plants need water to continue growing • Draw before-and-after pictures demonstrating that plants need water • Investigate what happens to a plant after one week with no sunlight on its leaves • Observe how the shape and size of a leaf affects how much light the leaf can take in • Research how to care for a plant • Plan an investigation to help answer remaining questions about plants • Develop and use a model of a flower in order to investigate how an insect pollinates a flower

Unit 3: Habitats - Plants & Their Needs

Elementary - 2nd Grade Science - Last Updated on June 4, 2019

Students will know (Knowledge):	Students will be able to (Skills):
<ul style="list-style-type: none">• Animals like bees, hummingbirds, butterflies, and birds move pollen from one flower to another to help the flower make seeds• Fruit helps seeds grow and stay safe• Bees and flowers need each other: bees need the flowers for nectar; and, flowers need bees to transfer pollen	<ul style="list-style-type: none">• Contrast two different seed structures (via simulation) to see which will be carried better by wind and which by animals• Make a model of a seed and describe how it can be dispersed by an animal