

FOSS and SEEd Standards Alignment

Second Grade

Strand 2.1: CHANGES IN EARTH'S SURFACE

Earth has an ancient history of slow and gradual surface changes, punctuated with quick but powerful geologic events like volcanic eruptions, flooding, and earthquakes. Water and wind play a significant role in changing Earth's surface. The effects of wind and water can cause both slow and quick changes to the surface of the Earth. Scientists and engineers design solutions to slow or prevent wind or water from changing the land.

STANDARDS	FOSS	MINIMUM
<p>2.1.1 Develop and use models illustrating the <u>patterns</u> of landforms and water on Earth. Examples of models could include valleys, canyons, or floodplains and could depict water in the solid or liquid state. (ESS2.B)</p>	<p><i>Pebbles, Sand, and Silt</i> Investigation 2: River Rocks Investigation 4: Soil and Water</p>	<p><i>Pebbles, Sand, and Silt</i> Investigation 2: River Rocks Part 4 – 5 classes This doesn't address patterns</p>
<p>2.1.2 Construct an explanation about <u>changes</u> in Earth's surface that happen quickly or slowly. Emphasize the contrast between fast and slow changes. Examples of fast changes could include volcanic eruptions, earthquakes, or landslides. Examples of slow changes could include the erosion of mountains or the shaping of canyons. (ESS1.C)</p>	<p><i>Pebbles, Sand, and Silt</i> Investigation 1: First Rocks Investigation 2: River Rocks Investigation 4: Soil and Water</p>	<p><i>Pebbles, Sand, and Silt</i> Investigation 2: River Rocks Part 1 – 1-2 classes Part 2 – 2 classes Part 4 – 2 classes</p> <p>Investigation 4: Soil and Water Part 1 – 3 classes Part 2 – 5 classes Part 3 – 2 classes Part 4 – 4 classes</p>
<p>2.1.3 Design solutions to slow or prevent wind or water from <u>changing</u> the shape of land. <i>Define the problem by asking questions and gathering information, convey designs through sketches, drawings, or physical models, and compare and test designs.</i> Examples of solutions could include retaining walls, dikes, windbreaks, shrubs, trees, and grass to hold back wind, water, and land. (ESS2.A, ESS2.C, ETS1.A, ETS1.B, ETS1.C)</p>	<p><i>Pebbles, Sand, and Silt</i> Investigation 2: River Rocks Investigation 4: Soil and Water</p>	<p><i>Pebbles, Sand, and Silt</i> Investigation 2: River Rocks Part 4 – 2 classes Investigation 4: Soil and Water Part 4 – 3 classes</p>

Strand 2.2: LIVING THINGS AND THEIR HABITATS

Living things (plants and animals, including humans) need water, air, and resources from the land to survive and live in habitats that provide these necessities. The physical characteristics of plants and animals reflect the habitat in which they live. Animals also have modified behaviors that help them survive, grow, and meet their needs. Humans sometimes mimic plant and animal adaptations to survive in their environment.

STANDARDS	FOSS	MINIMUM
<p>2.2.1 Obtain, evaluate, and communicate information about <u>patterns</u> of living things (plants and animals, including humans) in <u>different habitats</u>. Emphasize the diversity of living things in land and water habitats. Examples of patterns in habitats could include descriptions of temperature or precipitation and the types of plants and animals found in land habitats. (LS2.C, LS4.C, LS4.D)</p>	<p><i>Insects and Plants</i> Investigation 3: Milkweed Bugs Investigation 4: Silkworms Investigation 5: Butterflies</p>	<p><i>Insects and Plants</i> Investigation 1 Part 1 – 1 class</p> <p><i>Insects and Plants</i> Investigation 3: Milkweed Bugs Part 2- 2 classes</p>
<p>2.2.2 Plan and carry out an investigation of the <u>structure and function</u> of plant and animal parts in <u>different habitats</u>. Emphasize how different plants and animals have different structures to survive in their habitat. Examples could include the shallow roots of a cactus in the desert or the seasonal changes in the fur coat of a wolf. (LS1.A, LS4.A, LS4.D)</p>	<p><i>Insects and Plants</i> Investigation 3: Milkweed Bugs Investigation 4: Silkworms</p>	<p><i>Insects and Plants</i> Investigation 2: Brassica Seeds Part 4 – 5-6 classes Investigation 3: Milkweed Bugs Part 2 – 2 classes Investigation 5: Butterflies Part 1 - 3-4 classes</p>
<p>2.2.3 Develop and use a model that mimics the <u>function of an animal dispersing seeds or pollinating plants</u>. Examples could include plants that have seeds with hooks or barbs that attach themselves to animal fur, feathers, or human clothing, or dispersal through the wind, or consumption of fruit and the disposal of the pits or seeds. (LS2.A)</p>	<p><i>Insects and Plants</i> Investigation 2: Brassica Seeds Investigation 5: Butterflies</p>	<p><i>Insects and Plants</i> Investigation 5: Butterflies Part 4 – 3 classes</p>
<p>2.2.4 Design a solution to a human problem by mimicking the <u>structure and function</u> of plants and/or animals and how they use their external parts to help them survive, grow, and meet their needs. <i>Define the problem by asking questions and gathering information, convey designs through sketches, drawings, or physical models, and compare and test designs.</i> Examples could include a human wearing a jacket to mimic the fur of an animal or a</p>	<p><i>Insects and Plants</i> “Student Projects” p. 180</p>	<p><i>Insects and Plants</i> Investigation 5: Butterflies Part 4 – 3 classes</p>

webbed foot to design a better swimming fin. (LS1.A, LS1.D, ETS1.A, ETS1.B, ETS1.C)		
--	--	--

Strand 2.3: PROPERTIES OF MATTER

All things are made of matter which exists with different forms and properties. Matter can be described and classified by its observable properties. Materials with certain properties are well-suited for specific uses. Heating or cooling some types of matter may or may not irreversibly change their properties.

STANDARDS	FOSS	MINIMUM
<p>2.3.1 Plan and carry out an investigation to classify different kinds of materials based on patterns in their observable properties. Examples could include sorting materials based on similar properties such as strength, color, flexibility, hardness, texture, or whether the materials are solids or liquids. (PS1.A)</p>	<p>Solids and Liquids Investigation 1: Solids Investigation 2: Liquids Investigation 3: Bits and Pieces</p> <p>Pebbles, Sand, and Silt Investigation 1: First Rocks Investigation 3: Using Rocks</p>	<p>Solids and Liquids Investigation 1: Solids Part 1 – 2 classes Part 2 – 2 classes Part 3 – 1 class Part 4 – 3 classes Part 5 – 2-3 classes Investigation 2: Liquids Part 1 – 1 class Part 2 – 1 class Part 3 – 2-3 classes Investigation 3: Bits and Pieces Part 1 – 1 class Part 2 – 1 class Part 3 – 1 class</p>
<p>2.3.2 Construct an explanation showing how the properties of materials influence their intended use and function. Examples could include using wood as a building material because it is lightweight and strong or the use of concrete, steel, or cotton due to their unique properties. (PS1.A)</p>	<p>Solids and Liquids Investigation 1: Solids Investigation 3: Bits and Pieces Investigation 4: Solids, Liquids and Water</p> <p>Pebbles, Sand, and Silt Investigation 3: Using Rocks</p>	<p>Solids and Liquids Investigation 4: Solids, Liquids and Water Part 4 – 3 classes</p>

<p>2.3.3 Develop and use a model to describe how an object, made of a small set of pieces, can be disassembled and reshaped into a new object with a different <u>function</u>. Emphasize that a great variety of objects can be built from a small set of pieces. Examples of pieces could include wooden blocks or building bricks. (PS1.A)</p>	<p><i>Solids and Liquids</i> Investigation 1: Solids Investigation 4: Solids, Liquids and Water</p>	<p><i>Solids and Liquids</i> Investigation 1: Solids Part 4 – 3 classes (perhaps consider changing the focus question to better match the standard)</p>
<p>2.3.4 Obtain, evaluate, and communicate information about changes in matter <u>caused</u> by heating or cooling. Emphasize that some changes can be reversed and some cannot. Examples of reversible changes could include freezing water or melting crayons. Examples of irreversible changes could include cooking an egg or burning wood. (PS1.B)</p>	<p><i>Solids and Liquids</i> Investigation 4: Solids, Liquids and Water</p>	<p><i>Solids and Liquids</i> Investigation 4: Solids, Liquids and Water Part 4 – 3 classes</p>