

<b>Course Name:</b>	Second Grade Science		
<b>Credits:</b>	N/A		
<b>Prerequisites:</b>	N/A		
<b>Description:</b>	A comprehensive of Science topics including: Physical Science, Life Science, Earth Science, and Engineering Design.		
<b>Academic Standards:</b>	Next Generation Science Standards		
<b>Units:</b>	<b>Unit Length:</b>	<b>Unit Standards:</b>	<b>Unit Outcomes:</b>
<b>Solids and Liquids</b>	1 Quarter	<p>I can classify different kinds of materials by their observable properties.</p> <p>I can determine which materials have the properties that are best suited for an intended purpose.</p> <p>I can construct an object made of pieces that can be disassembled and made into a new object.</p> <p>I can explain how some changes can be reversed by heating and cooling.</p>	Everything is made of matter. There are three states of matter.
<b>Insects and Plants</b>	1 Quarter	<p>I can plan and conduct an investigation to determine if plants need sunlight and water to grow.</p> <p>I can develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.</p> <p>I can make observations of plants and animals to compare the diversity of life in different habitats.</p>	All living things have needs to survive in their environment.
<b>Pebbles, Sand, and Silt</b>	1 Quarter	<p>I can compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.</p> <p>I can develop a model to represent the shapes and kinds of land and bodies of water in an area.</p> <p>I can obtain information to identify where water is found on Earth and that it can be solid or liquid.</p>	Earth's landforms and bodies of water are constantly changing.
<b>Engineering Design</b>	1 Quarter	<p>I can 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.</p> <p>I can 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.</p> <p>I can analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.</p>	Making observations and analyzing information can help improve our lives.

Unit Name: Physical Science- <b>Solids and Liquids</b>	<b>Length:</b> 1 quarter
<b>Standards:</b> I can classify different kinds of materials by their observable properties. I can determine which materials have the properties that are best suited for an intended purpose. I can construct an object made of pieces that can be disassembled and made into a new object. I can explain how some changes can be reversed by heating and cooling.	<b>Outcomes:</b> Everything is made of matter. There are three states of matter. Each state has different uses.
<b>Essential Questions:</b> How do properties of materials relate to their use? How do you observe, describe, and compare properties of solids and liquids?	<b>Learning Targets:</b> Solids are made of materials that have different properties. Liquids can be classified by their observable properties. Successful towers are built using the correct materials intended for the task. When heated or cooled, properties of materials are changed.
Topic 1: <b>Solids</b>	<b>Length:</b> 4 weeks
<b>Standard(s):</b> I can describe a solid. I can classify different kinds of materials by their observable properties. I can construct an object made of pieces that can be disassembled and made into a new object. I can determine which materials have the properties that are best suited for an intended purpose.	<b>Academic Vocabulary:</b> solid, liquid, gas, matter, observe, properties, flexible, rigid
Lesson Frame: Solid Objects and Materials	I can: identify solid objects and materials by their properties.
Lesson Frame: Group Solid Objects	I can: sort objects into collections based on their properties.
Lesson Frame: Construct with Solids	I can: use knowledge of material properties to design structures.
<b>Performance Tasks:</b> States of Matter Graphic Organizer Interactive Notebook Completion of Rubric	<b>Notes:</b> Activities may vary depending on individual needs. Baggies of materials in FOSS Kit various videos Solids & Liquids student book: pages 3-30
Topic 2: <b>Liquids</b>	<b>Length:</b> 2 weeks
<b>Standard(s):</b> I can describe a liquid. I can classify different kinds of materials by their observable properties.	<b>Academic Vocabulary:</b> Liquids, bubbly, foamy, viscous, translucent, transparent, flow
Lesson Frame: Liquids in Bottles	I can: describe the properties of liquids.
Lesson Frame: Properties of Liquids	I can: describe how liquids can be different from each other.

Lesson Frame: Liquid Level	I can: explain how liquids change in containers.
<b>Performance Tasks:</b> Interactive Notebook Completion of Rubric Liquid Properties Graphic Organizer	<b>Notes:</b> Activities may vary depending on individual needs Liquids in bottles FOSS Video: <i>All about Properties of Matter</i> FOSS Online Activity: <i>Falling Bottle Puzzle</i> <i>Solids &amp; Liquids student book: pages 31-37</i>
Topic 3: <b>Solids, Liquids, and Water</b>	<b>Length:</b> 2 weeks
<b>Standard(s):</b> I can explain how some changes can be reversed by heating and cooling.	<b>Academic Vocabulary:</b> disappear, reversible, evaporate, crystal, dissolve, layers, melting, freezing
Lesson Frame: Solids and Water	I can: describe what happens when solids are mixed with water.
Lesson Frame: Liquids and Water	I can: describe what happens when liquids are mixed with water.
Lesson Frame: Changing Properties	I can: describe how properties of materials change when they are heated or cooled.
<b>Performance Tasks:</b> Interactive Notebook Completion of Rubric Solid materials graphic organizer Liquids with water graphic organizer	<b>Notes:</b> Activities may vary depending on individual needs Solids & Liquids student book: pages 44-76 solid materials in bags FOSS activity Heating and Cooling FOSS video Solids and Liquids FOSS activity Change It!

Unit Name: Life Science- <b>Insects and Plants</b>	<b>Length:</b> One Quarter
<b>Standards:</b> I can plan and conduct an investigation to determine if plants need sunlight and water to grow. I can develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants. I can make observations of plants and animals to compare the diversity of life in different habitats.	<b>Outcomes:</b> Plants, animals, and insects depend on their habitats for survival.
<b>Essential Questions:</b> How do plants and insects meet their needs?	<b>Learning Targets:</b> Plants need sunlight and water to grow. Plants depend on other living and nonliving things to pollinate and disperse seeds.. Animals live in the appropriate habitat that provides all of their needs.
<b>Topic 1: Plants Need Sunlight and Water</b>	<b>Length:</b> 2 Weeks
<b>Standard(s):</b> I can plan and conduct an investigation to determine if plants need sunlight and water to grow.	<b>Academic Vocabulary:</b> seed, disperse, pollinate, habitat
Lesson Frame: Observe Plants	I can: make observations of plants with different variables.
Lesson Frame: Identify What Plants Need	I can: determine if plants need sunlight and water to grow.
<b>Performance Tasks:</b> Plan and conduct an investigation to determine if plants need sunlight and water to grow. Completion of Rubric. Graphic Organizers	<b>Notes:</b> Leveled readers library books various videos Activities may vary depending on individual needs
<b>Topic 2: Seed dispersal and plant pollination</b>	<b>Length:</b> 2 weeks
<b>Standard(s):</b> Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.	<b>Academic Vocabulary:</b> seed, mimic, dispersal, pollination
Lesson Frame: How Do Seed Travel?	I can: design a simple model of an animal that mimics seed dispersal.
Lesson Frame: Bees and other insects help some plants move pollen.	I can: investigate how an insect moves pollen.
<b>Performance Tasks:</b> Design a model to show one way seeds are dispersed. Participate in the representation of pollination. Completion of Rubric. Graphic Organizer	<b>Notes:</b> use cheetos or some other food that will stick to children's fingers Leveled readers library books various videos Activities may vary depending on individual needs
<b>Topic 3: Animal Habitats</b>	<b>Length:</b> 4 weeks
<b>Standard(s):</b> I can make observations of plants and animals to compare the diversity of life in different habitats.	<b>Academic Vocabulary:</b> wetland, forest, desert, habitat, diversity, physical features, environment

Lesson Frame: Wetland Habitat	I can: make observations of plants, insects, and animals that live in a wetland habitat.
Lesson Frame: Forest Habitat	I can: make observations of plants, insects, and animals that live in a forest habitat.
Lesson Frame: Desert Habitat	I can: make observations of plants, insects, and animals that live in a desert habitat.
Lesson Frame: Compare Habitats	I can: compare the diversity of life in the different habitats.
<b>Performance Tasks:</b> Design and build a Habitat Completion of Rubric	Notes: Leveled readers library books various videos Activities may vary depending on individual needs

Unit Name: Earth Science- <b>Pebbles, Sand, and Silt</b>	<b>Length:</b> 1 quarter
<b>Standards:</b> I can compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land. I can define weathering. I can define erosion. I can develop a model to represent the shapes and kinds of land and bodies of water in an area. I can obtain information to identify where water is found on Earth and that it can be solid or liquid.	<b>Outcomes:</b> Earth is made up of landforms and water that is constantly changing.
<b>Essential Questions:</b> How are Earth's landforms and bodies of water changing overtime?	<b>Learning Targets:</b> Earth's landforms are changed by erosion and weathering. Earth has many different landforms. Earth has different types of water sources. Earth's water sources can be solid or liquid.
Topic 1: <b>Soil and Water</b>	<b>Length:</b> 3 weeks
<b>Standard(s):</b> I can compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land. I can define weathering. I can define erosion.	<b>Academic Vocabulary:</b> erosion, weathering
Lesson Frame: Soil and Water	I can: describe different types of soil.
Lesson Frame: Erosion	I can: explain the process of erosion.
Lesson Frame: Weathering	I can: tell how weathering is different from erosion.
<b>Performance Tasks:</b> Soil- graphic organizer interactive notebook completion of rubric	<b>Notes:</b> FOSS student book p. 3-23, 44-49, 68-78 FOSS video- All About Soil Various erosion and weathering videos
Topic 2: <b>Landforms</b>	<b>Length:</b> 3 weeks
<b>Standard(s):</b> I can develop a model to represent the shapes and kinds of land and bodies of water in an area.	<b>Academic Vocabulary:</b> pond, river, stream, ocean, lake, landforms, volcano, valley, canyon, mesa, butte, beach, delta, plain, mountain, plateau, hill, island
Lesson Frame: Land and Water	I can: design a landform to represent the land and water on Earth. I can: label the different types of land and water on my landform.
Lesson Frame: Types of Land	I can: name and describe landforms found on Earth.
Lesson Frame: Types of Water	I can: name and describe water found on Earth.

<b>Performance Tasks:</b> Land/water graphic organizer Land/water model Interactive notebook completion of rubric	Notes: FOSS student book p.24-30 Various Videos Various books Land/water model
Topic 3: <b>Natural Water Sources</b>	<b>Length:</b> 2 weeks
<b>Standard(s):</b> I can obtain information to identify where water is found on Earth and that it can be solid or liquid.	<b>Academic Vocabulary:</b> Fresh water, salt water, streams, rivers, lake, ocean, glaciers, precipitation
Lesson Frame: Where is Water Found?	I can: name where water is found on Earth.
Lesson Frame: States of Water	I can: name different states that water can be in.
<b>Performance Tasks:</b> States of water graphic organizer Interactive Notebook Completion of Rubric	Notes: FOSS student book p. 50-67 Various videos

<b>Unit Name: Engineering Design</b>	<b>Length:</b> One Quarter
<p><b>Standards:</b>  I can 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.  I can 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.  I can analyze data from test of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.</p>	<p><b>Outcomes:</b>  By designing and modifying an existing design, you are able to improve the outcome of a tool's purpose or performance.</p>
<p><b>Essential Questions:</b>  How can you design or improve a given tool to improve its function to solve a problem?</p>	<p><b>Learning Targets:</b>  Understand that by asking questions, making observations and gathering information, you are able to design and modify a tool that will solve a given problem.</p>
<b>Topic 1: STEM-Pumpkin Picker</b>	<b>Length:</b> 1 week
<p><b>Standard(s):</b>  I can 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.  I can 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.  I can analyze data from test of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.</p>	<p><b>Academic Vocabulary:</b>  engineer, sketch, design, modify</p>
Lesson Frame: Pumpkin Picker	I can: design a pumpkin picker that will pick many pumpkins at one time using the given material.
<p><b>Performance Tasks:</b>  Design and build a model to represent an object that can improve or solve a given problem.</p>	<p><b>Notes:</b>  Use various materials to build and solve the given problem.</p>
<b>Topic 2: STEM-Turkey Transporter</b>	<b>Length:</b> 1 week

<p><b>Standard(s):</b> I can 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. I can 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. I can analyze data from test of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.</p>	<p><b>Academic Vocabulary:</b> engineer, sketch, design, modify, transporter</p>
Lesson Frame: Turkey Transporter	I can: design a tool that will transport a turkey with the given material.
<p><b>Performance Tasks:</b> Design and build a model to represent an object that can improve or solve a given problem.</p>	<p>Notes: Use various materials to build and solve the given problem.</p>
Topic 3: STEM-Pilgrim Shelter	<b>Length:</b> 1 week
<p><b>Standard(s):</b> I can 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. I can 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. I can analyze data from test of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.</p>	<p><b>Academic Vocabulary:</b> engineer, sketch, design, modify , shelter</p>
Lesson Frame: Pilgrim Shelter	I can: use the given material to design a shelter for pilgrims.
<p><b>Performance Tasks:</b> Design and build a model to represent an object that can improve or solve a given problem.</p>	<p>Notes: Use various materials to build and solve the given problem.</p>
Topic 4: <b>STEM-Float your Boat</b>	<b>Length:</b> 1 week
<p><b>Standard(s):</b> I can 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. I can 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. I can analyze data from test of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.</p>	<p><b>Academic Vocabulary:</b> engineer, sketch, design, modify , float</p>

Lesson Frame: Float Your Boat	I can: use the given material to design a boat that will float and hold cargo.
<b>Performance Tasks:</b> Design and build a model to represent an object that can improve or solve a given problem.	<b>Notes:</b> Use various materials to build and solve the given problem.
<b>Topic 5: STEM-Block the Water</b>	<b>Length:</b> 1 week
<b>Standard(s):</b> I can 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. I can 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. I can analyze data from test of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.	<b>Academic Vocabulary:</b> engineer, sketch, design, modify
Lesson Frame: Block the Water	I can: design a tool that will block water from flowing through a given space.
<b>Performance Tasks:</b> Design and build a model to represent an object that can improve or solve a given problem.	<b>Notes:</b> Use various materials to build and solve the given problem.
<b>Topic 6: STEM-The Green House</b>	<b>Length:</b> 1 week
<b>Standard(s):</b> I can 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. I can 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. I can analyze data from test of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.	<b>Academic Vocabulary:</b> engineer sketch design modify greenhouse
Lesson Frame: The Green House	I can: use the given material to create a structure like a greenhouse to help a plant grow.
<b>Performance Tasks:</b> Design and build a model to represent an object that can improve or solve a given problem.	<b>Notes:</b> Use various materials to build and solve the given problem.

Topic 7: <b>STEM-Seed Transporter</b>	<b>Length:</b> 1 week
<b>Standard(s):</b> I can 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. I can 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. I can analyze data from test of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.	<b>Academic Vocabulary:</b> engineer, sketch, design, modify, transporter
Lesson Frame: Seed Transporter	I can: design a tool that will transport seeds to a new location for growth.
<b>Performance Tasks:</b> Design and build a model to represent an object that can improve or solve a given problem.	Notes: Use various materials to build and solve the given problem.
Topic 8: <b>STEM-The Nature of Objects</b>	<b>Length:</b> 1 week
<b>Standard(s):</b> I can 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. I can 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. I can analyze data from test of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.	<b>Academic Vocabulary:</b> engineer, sketch, design, modify
Lesson Frame: The Nature of Objects	I can: collect items from nature to use in the construction of objects for given purposes.
<b>Performance Tasks:</b> Design and build a model to represent an object that can improve or solve a given problem.	Notes: Use various materials to build and solve the given problem.