



First Grade: FOSS Life Science - Plants and Animals

Investigation Title and Synopsis	Concepts	Assessments and TE Page Numbers
<p>1. Grass and Grain Seeds Students plant miniature lawns with rye grass and alfalfa. They mow the lawns and observe the response of grass and alfalfa to cutting. They plant individual wheat seeds in clear soda straws and observe how grain seeds germinate and grow. They read about plant needs and view a video on how plants grow.</p>	<ul style="list-style-type: none"> • Seeds are alive • Seeds need water and light to grow into new plants • Some plants dies and some plants continue to grow after they are mowed • Plants have different structures that function in growth and survival • Wheat and other cereals that we eat come from seeds called grains 	<ul style="list-style-type: none"> • Part 1: Anecdotal Notes (page 203) • Part 2: Notebook Sheet 4: <i>Growing and Mowing a Lawn</i> (page 166) • Part 3: Teacher Observation: Compares leaves and roots and explains why they grow in predictable directions/Assessment Checklist (pages 204-206)
<p>2. Stems Students make new plants from stems of houseplants. They put sections of stems from mints and other plants into water and look for evidence that a new plant is forming. Stem pieces that develop roots are planted to make new plants. Students plant pieces of potatoes (modified stems) and observe them grow. They learn about how plants make food. Students read about seed dispersal.</p>	<ul style="list-style-type: none"> • New plants can grow from stems of mature plants • Plants need water and light to grow • Leaves, twigs, and roots develop on stems at the nodes • Potatoes are underground stems • Seeds have structures to help them travel to new locations to grow • Plants make their own food, using sunlight 	<ul style="list-style-type: none"> • Part 1: Notebook Sheet 6: <i>Stem Cuttings</i> (page 168) • Part 2: Teacher Observation: Compares the structures of potato plants to others they have grown/Assessment Checklist (pages 204-206) • Part 3: Anecdotal Notes (page 203)

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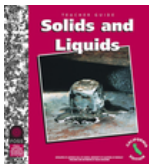
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<p>3. Terrariums Students set up terrariums using seeds and plants from Investigations 1 and 2. They add local animals such as snails, isopods, and worms and provide for the needs of the plants and animals. They learn about other animals and plants through readings and multimedia.</p>	<ul style="list-style-type: none"> • A terrarium is a place where plants and animals live in soil • A habitat is a place where plants and animals live • There are many different kinds of habitats • Plants and animals have structures and animals have behaviors that help them live in their habitat • Changes in a terrarium happen over time and can be recorded 	<ul style="list-style-type: none"> • Part 1: Teacher Observation: Assessment Checklist (pages 204-206)/Notebook Sheet 8: <i>Terrarium Map</i> (page 170) • Part 2: Teacher Observation: Assessment Checklist (pages 204-206)/Notebook Sheet 8: <i>Terrarium Map</i> (page 170) • Part 3: Teacher Observation: Matches plants and animals to their habitat based on their structures and behaviors/Identifies different habitats in the world and some of the plants and animals that live there/Assessment Checklist (pages 204-206)
<p>4. Bulbs and Roots Students plant onion bulbs or garlic cloves in moist cotton and observe as they develop into new plants. They plant parts of roots—carrots and radishes—to discover which parts will develop into new plants. Through a reading, they learn about the shape and functions of different kinds of teeth, and use their own teeth to eat a carrot.</p>	<ul style="list-style-type: none"> • Bulbs are alive • Bulbs need water to start growing • Parts of roots will grow into new plants other parts will not • Animals eat plants • Animal teeth come in different shapes and sizes and are used to capture and eat different kinds of food 	<ul style="list-style-type: none"> • Part 1: Notebook Sheet 11: <i>Growing Bulbs</i> (page 173) • Part 2: Teacher Observation: Knows plant needs and structures and their functions/ Understands functions of different kinds of teeth/ Assessment Checklist (pages 204-206) • End-of-Module Assessment (pages 207-209)



First Grade: FOSS Earth Science - Air and Weather

Investigation Title and Synopsis	Concepts	Assessments and TE Page Numbers
<p>1. Exploring Air Students explore properties of a common gas mixture, air. Using vials, syringes, and tubes, students experience air as matter, discovering that it takes up space and can be compressed and that compressed air builds up pressure that can push objects around. They construct and compare parachutes and balloon rockets. Students read about air and where it's found.</p>	<ul style="list-style-type: none"> • Air is matter • Air takes up space • Air interacts with objects • Air resistance affects how things move • Air is all around objects • Air can be compressed • The pressure from compressed air can move things • Air is a gas 	<ul style="list-style-type: none"> • Part 1: Pre-assessment Notebook Sheet 1: <i>What I Know About Air</i> (page 183) • Part 2: Notebook Sheet 2: <i>Bubbles</i> (page 184) • Notebook Sheet 3: <i>Keep the Towel Dry</i> (page 185) • Part 3: Notebook Sheet 4: <i>Parachutes</i> (page 186) • Part 4: Notebook Sheet 5: <i>Pushing On Air</i> (page 187) • Notebook Sheet 6: <i>Pop-Off</i> (page 188) • Part 5: Anecdotal Notes (page 243) • Part 6: Teacher Observation: (page 244-247) Explains how air moves a balloon rocket • Notebook Sheet 7: <i>What I Have Learned About Air</i> (page 189)
<p>2. Observing Weather Students record weather for 4–8 weeks on a class calendar and in weather journals. They measure temperature with a thermometer and rainfall with a rain gauge. They learn to identify three basic cloud types by matching their observations to a cloud chart. Students read about different kinds of weather.</p>	<ul style="list-style-type: none"> • Weather describes conditions in the outside air and changes over time • The sun warms the land, air, and water • Temperature, precipitation, and cloud types are components of the weather that can be described • Meteorologists are scientists who study weather • There are different kinds of clouds • Rain is water that comes from clouds 	<ul style="list-style-type: none"> • Part 1: Notebook Sheet 9: <i>Weather Conditions</i> (page 191) • Part 2: Teacher Observation: Conduct short interviews with the class meteorologists each day to assess students' skills when monitoring the weather/Assessment Checklist (pages 244-247) • Part 3: Anecdotal Notes (page 243) • Part 4: Notebook Sheet 14: <i>Weather and Rain</i> (page 196)

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<p>3. Wind Explorations Students look for evidence of moving air. They observe and describe wind speed using pinwheels, an anemometer, and a wind scale. They observe bubbles and construct wind vanes to find the wind's direction. Flying kites, they feel the strength of the wind and its direction. Students read how meteorologists gather information on the weather.</p>	<ul style="list-style-type: none"> • Wind is moving air • Wind speed and wind direction are components of weather that can be measured with anemometers and wind vanes • Wind scales are tools used to describe the speed of the wind 	<ul style="list-style-type: none"> • Part 1: Anecdotal Notes (page 243) • Part 2: Notebook Sheet 16: <i>Weather and an Anemometer</i> (page 198) • Part 3: Teacher Observation: Compares pinwheel to anemometers; both indicate wind speed/Assessment Checklist (pages 244-247) • Part 4: Notebook Sheet 17: <i>Weather and a Wind Vane</i> (page 199) • Part 5: Teacher Observation: Explains how anemometers and wind vanes help fly a kite/ Assessment Checklist (pages 244-247)
<p>4. Looking for Change Students organize monthly weather data, using graphs to describe weather trends. They continue to measure and record weather throughout the year, to compare the seasons. Students read about the seasonal weather patterns.</p>	<ul style="list-style-type: none"> • Weather conditions change over time • Weather observations can be organized compared, and predicted • The Sun heats the Earth during the day • Each season has a typical weather pattern that can be observed, compared, and predicted 	<ul style="list-style-type: none"> • Part 1: Notebook Sheet 19: <i>Weather Graph</i> (page 201) • Part 2: Notebook Sheet 20: <i>Seasons</i> (page 202) • End of Module Assessment (pages 248-251)



First Grade: FOSS

Physical Science - Solids and Liquids



Investigation Title and Synopsis	Concepts	Assessments and TE Page Numbers
<p>1. Solids Students explore solid objects, such as pieces of wood, plastic, and metal. They observe, describe, and sort the objects according to their properties. They construct towers (and other structures), using the properties inherent in the materials to accomplish the task.</p>	<ul style="list-style-type: none"> • Solids are one state of matter • Solid materials have properties that separate them from other states of matter • Solids can be sorted by their properties • Solid materials have distinct uses, based on their properties 	<ul style="list-style-type: none"> • Part 1: Pre-assessment Anecdotal Notes (page 239) • Teacher Observation: Identifies the properties of solid objects and sorts objects based on a property/Assessment Checklist (pages 240-242) • Part 2: Notebook Sheet 2: <i>Sorting Circle</i> (page 184) • Part 3: Teacher Observation: Identifies the properties of a solid used for specific purposes in construction/Assessment Checklist (pages 240-242)
<p>2. Liquids Students investigate liquids in a variety of settings to become familiar with their properties. They play games to rehearse precise liquids vocabulary. Students use representational materials to enhance their understanding of the unique behaviors of liquids.</p>	<ul style="list-style-type: none"> • Liquids are one state of matter • Liquids have many properties • Liquids pour and flow • Liquids take the shape of their container • The surface of liquid is level with respect to the ground 	<ul style="list-style-type: none"> • Part 1: Anecdotal Notes (page 239) • Part 2: Teacher Observation: Uses new vocabulary accurately/Assessment Checklist (pages 240-242) • Part 3: Notebook Sheet 6: <i>Liquids in Containers</i> (page 188) and Notebook Sheet 7: <i>Liquid Level in a Bottle</i> (page 189)

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<p>3. Bits and Pieces Students work with beans, rice, and cornmeal to find out how solids behave when the pieces are small. They shake, rattle, and roll the materials in bottles, pour them from container to container, and separate them using screens.</p>	<ul style="list-style-type: none"> • Solid materials come in all sizes and shapes • Particles of solid materials can pour like liquids, but maintain their shape • Solid materials can support denser materials on their surface • Mixtures of solid particles can be separated with a screen 	<ul style="list-style-type: none"> • Part 1: Anecdotal Notes (page 239) • Part 2: Anecdotal Notes (page 239) • Part 3: Teacher Observation: Compares liquids and solids/Assessment Checklist (pages 240-242) • Part 4: Notebook Sheet 12: <i>Bead Mix A</i> (page 194) and Notebook Sheet 13: <i>Bead Mix B</i> (page 195)
<p>4. Solids and Liquids with Water Students investigate interactions between solids and water and liquids and water. They observe, describe, record, and organize the results. They test toothpaste to determine if it is a solid or a liquid. They investigate melting and freezing of familiar liquids.</p>	<ul style="list-style-type: none"> • Some solids change when mixed with water; others do not • Some solids dissolve in water; evaporation leaves the solid behind • Some liquids mix with water; other liquids form a layer above or below water • Heating and cooling solids and liquids can change them from one state to another 	<ul style="list-style-type: none"> • Part 1: Anecdotal Notes (page 239) • Part 2: Notebook Sheet 15: <i>Liquid with Water</i> (page 197) • Part 3: Teacher Observation: (pages 240-242) • Part 4: Teacher Observation: (pages 240-242) Accurately reports observations • End of Module Assessment (pages 243-246)