

## Third Grade: FOSS Life Science - Structures of Life



Investigation Title and Synopsis	Concepts	Assessments and TE Page Numbers
<p><b>1. Origin of Seeds</b> Students conduct a seed hunt by opening fresh fruit and locating the seeds. They describe and compare seed properties and structures. They investigate the effect water has on the seeds by setting up seed sprouters and observing and recording changes over a week. Students systematically find out how much water lima beans soak up in a day and read about seeds.</p>	<ul style="list-style-type: none"> <li>• Seeds develop in the plant structure called a fruit</li> <li>• Different kinds of fruits have different kinds and numbers of seeds</li> <li>• Seeds have a variety of properties</li> <li>• Seeds undergo changes in the presence of water</li> <li>• A seed is an organism, a living thing</li> <li>• A seed contains the embryo plant and a store of food and water</li> </ul>	<ul style="list-style-type: none"> <li>• Pretest - Assessment Masters (pages 297-302) with Benchmark Assessment (pages 260-271)</li> <li>• Part 1 Embedded Assessment: Teacher Observation: (page 240)/Describe Properties of Seeds/Know fruits contain seeds/Science Notebook Sheet 1 <i>Comparing Seeds</i> (page 185) and Science Notebook Sheet 2 <i>The Sprouting Seed</i> (page 186)</li> <li>• Part 2 Embedded Assessment: (pages 241-242)/ Science Notebook Sheet 3 <i>Response Sheet-Origin of Seeds</i> (page 187)</li> <li>• Part 3 Embedded Assessment: Teacher Observation: <i>Weighing Seeds Accurately</i> (page 243)</li> <li>• Benchmark Assessment I-Check 1 Assessment Master (pages 303-305) with Benchmark Assessment (pages 272-277)</li> </ul>
<p><b>2. Growing Further</b> Students examine germinated seeds to determine similarities and differences in the way the plants grow. They set up a hydroponic Garden to observe the life cycle of a bean plant. Through direct observations and readings, students learn about plant structures and functions.</p>	<ul style="list-style-type: none"> <li>• Germination is the onset of a plant's growth</li> <li>• Plants need water, light, and nutrients to grow</li> <li>• The life cycle is the process a seed growing into a mature plant, which in turn produces seeds</li> <li>• The fruit of the plant develops from the flower</li> </ul>	<ul style="list-style-type: none"> <li>• Part 1 Embedded Assessment: (page 244)/ Teacher Observation <i>Comparing Germinated Seeds</i> and Teacher Sheet (page 215) identify parts of germinated seeds including roots, stems, and leaves</li> <li>• Part 2 Embedded Assessment: (pages 245-246) Science Notebook Sheet 6 <i>Bean Plant Life Cycle</i> (page 191)</li> <li>• Benchmark Assessment I-Check 2 Assessment Master (pages 306-308) with Benchmark Assessment (pages 278-283)</li> </ul>

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<p><b>3. Meet the Crayfish</b>            Students observe and record some of the structures of a crustacean, the crayfish. They investigate crayfish behavior and map where the crayfish spend their time within their habitat. Through readings, organism cards, and a video, students learn about adaptations of organisms in different environments.</p>	<ul style="list-style-type: none"> <li>• Crayfish have observable structures such as legs, pincers, antennae, eyes, swimmerets, tail, and mouthparts</li> <li>• These structures have functions that help the organism survive in its environment</li> <li>• Behavior is what an animal does</li> <li>• Some animals claim a territory that they defend from other animals</li> <li>• Different organisms can live in different environments; organisms have adaptations that allow them to survive</li> </ul>	<ul style="list-style-type: none"> <li>• Part 1 Embedded Assessment: (pages 247-248)/Science Notebook Sheet 3 <i>Response Sheet Origin of Seeds</i> (page 187)/ Notebook Sheet 7 <i>Crayfish Structures</i> (page 191)</li> <li>• Part 2 Embedded Assessment: (pages 249)/ Science Notebook Sheet 10 &amp; 11 <i>Adaptations</i> (pages 195-196)/Identify structural and behavioral adaptations in 4 categories: movement, protection or defense, getting food, &amp; caring for young/(pages 128-132 #7-#13)</li> <li>• Benchmark Assessment I-Check 3 Assessment Master (pages 309-312) with Benchmark Assessment (pages 284-291)</li> </ul>
<p><b>4. Meet the Land Snail</b>            Students study snail structures and behaviors and set up an appropriate habitat for the animals. They compare the structures and behaviors of the snail (a gastropod) to the crayfish (a crustacean). Through readings, students study examples of organisms that change the environment. And they read about what can happen to organisms when environments change.</p>	<ul style="list-style-type: none"> <li>• Land snails have a coiled shell, a large foot on which they glide, and a body with a variety of structures</li> <li>• An organism's structures have functions that help it survive in its habitat</li> <li>• The structures found on different kinds of organisms show some similarities and some differences</li> <li>• Some organisms that lived on Earth died out when environments changed</li> <li>• Organisms can change their environment; this can be detrimental or beneficial</li> </ul>	<ul style="list-style-type: none"> <li>• Part 1 Embedded Assessment: Teacher Observation: Confidence and attentiveness while observing snails and observations made of snail structures using appropriate language (page 250)</li> <li>• Part 2 Embedded Assessment: (pages 251-252)/Science Notebook Sheet 13 <i>Comparing Structures</i> (page 197)</li> <li>• Benchmark Assessment I-Check 4 Assessment Master (pages 313-314) with Benchmark Assessment (pages 291-295)</li> <li>• Posttest Assessment Master (pages 297-302) with Benchmark Assessment (pages 260-271)</li> </ul>



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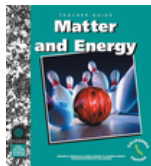
### Earth Science - Sun, Moon, and Stars



Investigation Title and Synopsis	Concepts	Assessments and TE Page Numbers
<p><b>1. The Sun</b>            Students use a compass to study the position of the Sun in the sky at different times during the day. They observe the Sun's position, record, make predictions, and make new observations later in the day to check their predictions. Students explore shadows created by blocking sunlight on the schoolyard. They trace shadows, predict where shadows will be later in the day, and return to check their predictions. Students read about the changing position of the Sun in the sky.</p>	<ul style="list-style-type: none"> <li>• The earth spins on its axis</li> <li>• The sun rises in the east and sets in the west every day</li> <li>• A compass is a tool used to determine directions (east, west, north, and south)</li> <li>• Shadows are the areas of darkness created when a opaque object blocks the light</li> <li>• The shapes of shadows change over a day and depend on the position of the Sun in the sky</li> <li>• Day happens when a location of the Earth is facing toward the Sun</li> <li>• Night happens when a location on Earth is facing away from the Sun</li> <li>• The exact path the Sun takes in the sky varies by season</li> </ul>	<ul style="list-style-type: none"> <li>• Pretest (pages 227-232)</li> <li>• Part 1 Embedded Assessment: (pages 182-183) Science Notebook Sheet 1, <i>Where's the Sun?</i> (page 135)</li> <li>• Part 2 Embedded Assessment: (pages 182-183) Teacher Observation:/Science Notebook Sheet 2 <i>Sun and Shadows</i> (page 136)</li> <li>• Benchmark Assessment I-Check 1 (page 233-235)</li> </ul>
<p><b>2. The Moon</b>            Students observe the Moon in the sky during the day and night for a period of 4 weeks. They record the appearance of the Moon and analyze the data to discover a sequence of changes, the lunar cycle. Students learn the names of the Moon phases and how to predict the next step in the sequence. Concepts are reinforced through simulations, readings, a video, and writing.</p>	<ul style="list-style-type: none"> <li>• Objects in the night sky include the Moon, stars, and other planets</li> <li>• Earth is one of several planets that orbit the Sun in the solar system</li> <li>• The Moon orbits the Earth</li> <li>• The Moon can appear in the sky both night and day</li> <li>• The Moon changes its appearance, or phases, in a regular pattern over 4 weeks</li> <li>• Moon phases is the portion of the illuminated half of the Moon that is visible from Earth</li> </ul>	<ul style="list-style-type: none"> <li>• Part 1 Embedded Assessment: (pages 186-187) Science Notebook Sheet 3 <i>Night-Sky Log</i> (pages 137-138)</li> <li>• Part 2 Embedded Assessment: (pages 188-189) Science Notebook Sheet 5 <i>Phases of the Moon</i> (page 139)</li> <li>• Benchmark Assessment</li> <li>• I-Check 2 (pages 236-237)</li> <li>• Posttest (pages 227-232)</li> </ul>

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<p><b>3. The Stars</b>            Students look to the night sky to observe the stars and are introduced to the constellations people have named. Students engage in simulations to understand why the stars appear to move across the sky during the night and why different stars can be seen from Earth at different seasons. Students read about the role of telescopes in astronomy research and about star scientists.</p>	<ul style="list-style-type: none"> <li>• Stars are suns positioned at great distances from Earth</li> <li>• Groups of stars form patterns called constellations</li> <li>• Stars (constellations) appear to move together across the night sky because Earth rotates</li> <li>• Stars can be observed from Earth's surface only at night</li> <li>• Different constellations can be observed during different seasons because Earth revolves around the Sun</li> <li>• Stars are different sizes and have different brightnesses</li> <li>• Telescopes make distant objects look closer and larger</li> </ul>	<ul style="list-style-type: none"> <li>• Part 1 Embedded Assessment: (pages 190-191)/Science Notebook Sheets 6-8 <i>Star Patterns</i>, <i>Star Gazing Review</i>, <i>All About the Stars</i> (pages 140-142)</li> <li>• Benchmark Assessment I-Check 3 (pages 238-240)</li> </ul>

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 Earth Science – Sun, Moon, and Stars



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### Physical Science - Matter and Energy



Investigation Title and Synopsis	Concepts	Assessments and TE Page Numbers
<p><b>1. Energy</b> Students investigate different forms of energy(light,sound, and motion) and determine ways that energy is converted to make things happen.They explore ways that energy forms are carried from one place to another. Students explore energy working with materials(batteries,bulbs, candles,solar cells, springs toys, rolling balls), through reading, and through video.</p>	<ul style="list-style-type: none"> <li>• Energy makes things happen</li> <li>• Energy takes many forms</li> <li>• Most of the energy used by organisms, including humans, comes from the Sun in the form of light</li> <li>• Stored energy can be converted to other forms of energy</li> <li>• Machines and living things can convert energy into motion and heat</li> <li>• Energy can be carried from one place to another by waves, electric current, and moving objects</li> </ul>	<ul style="list-style-type: none"> <li>• Pretest (pages 349-353)</li> <li>• Part 1 Embedded Assessment: (pages 294-295) Science Notebook Sheet 3 <i>Energy Sources Questions</i> (page 205)</li> <li>• Part 2 Embedded Assessment: (pages 296-297)/ Science Notebook Sheet 5 Response Sheet <i>Energy</i> (page 207)</li> <li>• Benchmark Assessment I-Check 1 Assessment Masters (pages 354-356)</li> </ul>
<p><b>2. Light</b> Students use mirrors to reflect light and learn that light travels in straight lines. They are introduced to blocked light(shadows), light absorption, and to white light as a mixture of all colors of light. They investigate firsthand and through simulations, video, and readings how the appearance of an object is affected by the color of light striking it.</p>	<ul style="list-style-type: none"> <li>• Light is form of energy that travels in straight lines from light source</li> <li>• Light can reflect off surfaces that it strikes</li> <li>• An object is seen only when light from that object enters an eye</li> <li>• White light is mixture of all colors</li> <li>• Light can be absorbed by matter</li> <li>• The apparent color of an object is the result of the light it reflects</li> <li>• The apparent color of an object is affected by the color of light striking it</li> <li>• A shadow is created when objects block light</li> </ul>	<ul style="list-style-type: none"> <li>• Embedded Assessment: Teacher Observation: for Part 1 (page 298)</li> <li>• Part 2 Embedded Assessment: (pages 299-300)/ Teacher Observation: Ability to use mirrors effectively to redirect a beam of light/Science Notebook Sheet 13 <i>Throw a little light on sight questions</i> (page 215)</li> <li>• Benchmark Assessment I-Check 2 Assessment Masters (pages 357-359)</li> </ul>

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<p><b>3. Matter</b> Students work with different states of matter, measure mass and volume using metric standards and tools, and solve problems using their knowledge of metric measurement. They develop a set of defining characteristics for states of matter. They read about the difference between opinion and evidence.</p>	<ul style="list-style-type: none"> <li>• The behavior of a sample of matter in an open container indicates its state</li> <li>• The gram(g) is the standard unit of measure used to quantify mass in the metric system</li> <li>• Volume is a measure of the three-dimensional space occupied by matter</li> <li>• The liter (L) is the standard for measuring fluid volume in the metric system</li> <li>• Opinion is based on belief; scientific evidence is based on observation</li> </ul>	<ul style="list-style-type: none"> <li>• Part 1 Embedded Assessment: (page 301)/ Science Notebook Sheet 14 <i>Solids, Liquids, or Gases?</i> (page 216) Teacher observation (pages 121,129)/ Identifying states of matter</li> <li>• Part 2 Embedded Assessment: (pages 302-303)/ Science Notebook Sheet 18 <i>Opinion and Evidence Questions?</i> (page 220)</li> <li>• Part 3 Embedded Assessment: (page 304)/ Science Notebook Sheet 19 <i>Measuring Volume</i> (page 221)/Teacher Observation: Compares measurements and checks predictions</li> <li>• Benchmark Assessment I-Check 3 Assessment Masters (pages 360-362)</li> </ul>
<p><b>4. Changing Matter</b> Students use the thermometer to measure and record temperatures as they explore melting of common substances. The class conducts an evaporation investigation, and students use data to draw conclusions. Students combine substances and observe the results of a chemical reaction. They read about atoms and elements.</p>	<ul style="list-style-type: none"> <li>• Degree Celsius(*C) is the unit used when scientists measure temperature</li> <li>• Melting occurs when solids are heated</li> <li>• Different substances melt at different temperatures</li> <li>• Evaporation occurs when a liquids are heated</li> <li>• When two substances are combined, a reaction may occur, producing a new substance with unique properties</li> <li>• Matter is made of small particles, atoms</li> </ul>	<ul style="list-style-type: none"> <li>• Part 1 Embedded Assessment: (page 305)/ Teacher observation: Ability to measure accurately and record systematically/Science Notebook Sheet 20 <i>Measuring Temperature</i> (page 222)</li> <li>• Part 2 Embedded Assessment: (page 306) Science Notebook Sheet 21 <i>Melting</i> (page 224)</li> <li>• Benchmark Assessment I-Check 4 Assessment Masters (pages 363-365)</li> <li>• Posttest (pages 349-353)</li> </ul>