

Lesson 1: Density

Phase	Instructional Grouping	Materials
Engage	Whole group	<i>For teacher</i> - <b>Engage: Sink or Float?</b> - projector
Explore	Small groups	<i>For each student</i> - <b>Explore: Density Data</b>  <i>For student groups</i> - centimeter cube - marble - penny - piece of white foam cup - piece of candle wax - pinto bean - pony bead - piece of wide, sturdy rubber band - toothpick - craft stick - large, clear, plastic cup - water - paper towels

<b>Explain</b>	Whole group	<p><i>For teacher</i></p> <ul style="list-style-type: none"> <li>- <b>Explain: Making Density Sense</b></li> <li>- projector</li> <li>- chart paper</li> <li>- 7 9-ounce clear plastic cups</li> <li>- 150 mL honey</li> <li>- 150 mL clear syrup</li> <li>- 150 mL blue dish soap</li> <li>- 150 mL water</li> <li>- 150 mL cooking oil</li> <li>- 150 mL rubbing alcohol</li> <li>- 250 mL beaker</li> <li>- 1000 mL glass beaker</li> <li>- red food color</li> <li>- strainer</li> <li>- 6 craft sticks</li> <li>- centimeter cube</li> <li>- marble</li> <li>- penny</li> <li>- piece of white foam cup</li> <li>- piece of candle wax</li> <li>- pinto bean</li> <li>- pony bead</li> <li>- piece of wide, sturdy rubber band</li> <li>- toothpick</li> <li>- paper towels</li> <li>- triple beam balance</li> <li>- flashlight</li> </ul> <p><i>For each student</i></p> <ul style="list-style-type: none"> <li>- <b>Explore: Density Data</b></li> </ul>				
<b>Elaborate</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center; vertical-align: middle;">Student pairs Individual</td> <td style="width: 50%;"></td> </tr> <tr> <td style="text-align: center; vertical-align: middle;">Teacher-led student group Student pairs</td> <td></td> </tr> </table>	Student pairs Individual		Teacher-led student group Student pairs		<p><i>For each student</i></p> <ul style="list-style-type: none"> <li>- <b>Elaborate: Density Matters</b></li> </ul>
Student pairs Individual						
Teacher-led student group Student pairs						
<b>Evaluate</b>	Individual	<p><i>For each student</i></p> <ul style="list-style-type: none"> <li>- <b>Evaluate: Density</b></li> </ul>				

Lesson 2: Solubility

Phase	Instructional Grouping	Materials
Engage	Small groups	<i>For each student</i> - science notebook
Explore	Small groups	<i>For each student</i> - <b>Explore: To Dissolve or Not to Dissolve</b>  <i>For each group of 4–5 students</i> - 15 mL lemon juice - 15 mL corn syrup - 15 mL oil - 15 mL baking soda - 15 mL sugar - 15 mL sand - 15 mL salt - 15 mL chocolate powder - 250 mL water - 50 mL graduated cylinder - 5 mL metric measuring spoon - 8 9-ounce clear plastic cups - 8 craft sticks - permanent marker - timer
Explain	Student pairs Individual Teacher demonstration	<i>For teacher</i> - 250 mL cold water - 250 mL room temperature water - 250 mL warm water - 3 500 mL glass beakers - 3 sugar cubes - 3 metal spoons - 3 Celsius thermometers - 3 timers  <i>For each student</i> - <b>Explore: To Dissolve or Not to Dissolve</b> - <b>Explain: Solubility and Temperature</b>

**Lesson 2**  
**Grade 5**

<b>Elaborate</b>	Small groups	<p><i>For teacher</i></p> <ul style="list-style-type: none"> <li>- table salt</li> <li>- scissors</li> <li>- pushpin</li> <li>- hot plate</li> </ul> <p><i>For each student</i></p> <ul style="list-style-type: none"> <li>- <b>Elaborate: Why Is the Ocean Salty?</b></li> </ul> <p><i>For each group of 4–5 students</i></p> <ul style="list-style-type: none"> <li>- sand</li> <li>- rock salt</li> <li>- play dough</li> <li>- aquarium gravel</li> <li>- 2 small, transparent plastic cups (5–6 oz)</li> <li>- 1 transparent plastic food storage container with lid</li> <li>- 200 mL beaker</li> <li>- 100 mL distilled water</li> <li>- 100 mL graduated cylinder</li> <li>- eyedropper</li> <li>- hand lens</li> <li>- paper towels</li> <li>- aluminum foil, 15 cm x 15 cm square</li> </ul>
	Teacher-led small group	
<b>Evaluate</b>	Individual	<p><i>For each student</i></p> <ul style="list-style-type: none"> <li>- <b>Evaluate: Solubility</b></li> </ul>

Lesson 3: Insulators and Conductors

Phase	Instructional Grouping	Materials
<b>Engage</b>	Whole group	<i>For teacher</i> - <b>Engage: What Would You Do?</b> - projector
<b>Explore</b>	Small groups	<i>For teacher</i> - 7 small, square tissue boxes - 7 16-ounce. plastic cups - cotton balls - newspaper - dish towel - plastic grocery bags - scarf - paper towels - 7 Celsius thermometers - 7 large rubber bands - plastic wrap - box cutter - 600 mL beaker - permanent marker - clock - 2400 mL warm water - large glass beaker (optional) - hot plate (optional) - large Thermos <sup>®</sup> (optional) - heat-resistant gloves (optional)  <i>For student groups</i> - <b>Explore: Data Graph</b>
<b>Explain</b>	Whole group	<i>For each student</i> - <b>Explain: Insulators and Conductors</b>

**Lesson 3**  
**Grade 5**

<b>Elaborate</b>	Small groups	<p><i>For teacher</i></p> <ul style="list-style-type: none"> <li>- wire strippers or scissors</li> </ul> <p><i>For groups of 4–5 students</i></p> <ul style="list-style-type: none"> <li>- <b>Elaborate: Modeling a Flashlight</b></li> <li>- 2 D-cell batteries</li> <li>- small flashlight bulb or car headlight bulb</li> <li>- wire</li> <li>- small piece of cloth</li> <li>- short section of plastic straw</li> <li>- foam square</li> <li>- index card</li> <li>- eraser</li> <li>- marble</li> <li>- toothpick</li> <li>- penny</li> <li>- paper clip</li> <li>- foil</li> <li>- metal brad</li> <li>- screw</li> <li>- nail</li> <li>- metal washer</li> </ul>
	Teacher-led student group	
<b>Evaluate</b>	Individual	<p><i>For each student</i></p> <ul style="list-style-type: none"> <li>- <b>Evaluate: Conductors and Insulators</b></li> </ul>

Lesson 4: Uses of Energy

Phase	Instructional Grouping	Materials
Engage	Whole group	<i>For each student</i> - science notebook
Explore	Small groups	<i>For each student</i> - <b>Explore: Energy Research Data Sheet</b>  <i>For groups of 3–4 students</i> - chart paper or poster board - colored pencils, markers or crayons
Explain	Whole group	<i>For each student</i> - <b>Explain: Uses of Energy</b>
Elaborate	Student pairs Individual	<i>For each student</i> - <b>Elaborate: Energy Seek and Find</b>
	Teacher-led small group	
Evaluate	Individual	<i>For each student</i> - <b>Evaluate: Uses of Energy</b>

Lesson 5: Electrical Energy

Phase	Instructional Grouping	Materials
<b>Engage</b>	Whole group	<i>For teacher</i> <ul style="list-style-type: none"> <li>- <b>Engage: Circuits</b></li> <li>- projector</li> </ul>
<b>Explore</b>	Small groups	<i>For student groups</i> <ul style="list-style-type: none"> <li>- <b>Explore: Building Circuits</b></li> <li>- 1 switch</li> <li>- 4–5 wires</li> <li>- 2 small flashlight bulbs</li> <li>- 2 light bulb holders</li> <li>- 2–3 D-cell batteries</li> <li>- 2–3 battery holders</li> <li>- wire strippers (optional)</li> </ul>
<b>Explain</b>	Whole group	<i>For teacher</i> <ul style="list-style-type: none"> <li>- <b>Explain: Series and Parallel Circuits</b></li> <li>- projector</li> <li>- chart paper</li> </ul> <i>For each student</i> <ul style="list-style-type: none"> <li>- science notebook</li> </ul>
<b>Elaborate</b>	Small groups Student pairs	<i>For each student</i> <ul style="list-style-type: none"> <li>- <b>Elaborate: Circuits and Energy</b></li> </ul>
	Teacher-led student group	
<b>Evaluate</b>	Individual	<i>For each student</i> <ul style="list-style-type: none"> <li>- <b>Evaluate: Electrical Energy</b></li> </ul>



Lesson 6: Alternative Energy Resources

Phase	Instructional Grouping	Materials
<b>Engage</b>	Individual	<i>For each student</i> - <b>Engage: Natural Resources</b>
<b>Explore</b>	Small groups	<i>For each student</i> - <b>Explore: Alternative Energy Resources</b>  <i>For Expert Group 1</i> - <b>Explore: Wind Energy</b>  <i>For Expert Group 2</i> - <b>Explore: Solar Energy</b>  <i>For Expert Group 3</i> - <b>Explore: Hydroelectric Energy</b>  <i>For Expert Group 4</i> - <b>Explore: Geothermal Energy</b>
<b>Explain</b>	Whole group	<i>For each student</i> - <b>Explore: Alternative Energy Resources</b> - <b>Explain: Biofuels</b>
<b>Elaborate</b>	Small groups	<i>For each group of 3–4 students</i> - <b>Elaborate: Everyone Is an Engineer</b> - <b>Explore: Alternative Energy Resources</b> - chart paper or poster board - crayons or markers
	Teacher-led group	
<b>Evaluate</b>	Individual	<i>For each student</i> - <b>Evaluate: Alternative Energy Resources</b>

Lesson 7: Rotation of Earth

Phase	Instructional Grouping	Materials
<b>Engage</b>	Whole group	<p><i>For teacher</i></p> <ul style="list-style-type: none"> <li>- <b>Engage: What Do You Know?</b></li> <li>- projector</li> </ul>
<b>Explore</b>	Small groups	<p><b>Activity 1</b></p> <p><i>For teacher</i></p> <ul style="list-style-type: none"> <li>- box cutter</li> </ul> <p><i>For groups of 2–3 students</i></p> <ul style="list-style-type: none"> <li>- <b>Explore: Activity 1–Timeline</b></li> <li>- scissors</li> <li>- metric ruler</li> <li>- pencil-top eraser</li> <li>- flashlight</li> <li>- white map pencil or crayon</li> <li>- 12" x 18" sheet of black construction paper with 7-inch slit</li> <li>- clear tape</li> <li>- dimly lit area</li> </ul> <p><b>Activity 2</b></p> <p><i>For teacher</i></p> <ul style="list-style-type: none"> <li>- box cutter</li> <li>- permanent marker</li> </ul> <p><i>For groups of 3–4 students</i></p> <ul style="list-style-type: none"> <li>- <b>Explore: Activity 2–Timeline</b></li> <li>- copy-paper box or similar container with flashlight hole cut into it</li> <li>- 3" diameter white foam ball</li> <li>- pushpin</li> <li>- metal brad for paper</li> <li>- flashlight</li> <li>- clear tape</li> <li>- dimly lit area</li> </ul>
<b>Explain</b>	Whole group	<p><i>For each student</i></p> <ul style="list-style-type: none"> <li>- <b>Explain: Rotation of Earth</b></li> </ul>

<b>Elaborate</b>	Small groups	<i>For each student</i> <ul style="list-style-type: none"><li>- <b>Elaborate: Using the Sun to Tell Time</b></li><li>- clear, plastic plate</li><li>- dry erase marker (dark color)</li><li>- metric ruler</li><li>- compass</li><li>- sunglasses</li><li>- science notebook</li></ul>
	Teacher-led student group	
<b>Evaluate</b>	Individual	<i>For each student</i> <ul style="list-style-type: none"><li>- <b>Evaluate: Rotation of Earth</b></li></ul>

Lesson 8: Ecosystem Interactions

Phase	Instructional Grouping	Materials
Engage	Small groups	<i>For teacher</i> - chart paper
	Whole group	<i>For each student</i> - <b>Engage: Is It an Organism?</b>
Explore	Small groups	<i>For each student</i> - <b>Explore: Energy Flows</b>  <i>For each group of 3–4 students</i> - <b>Explore: Organism Cards</b>
	Small groups	<i>For each student</i> - <b>Explain: Food Chain/Food Web Vocabulary</b>
Elaborate	Individual	<i>For each student</i> - <b>Elaborate: 100% Needed</b> - 1 card from <b>Explore: Organism Cards</b> - 1 die
	Teacher-led small group	<i>For each student</i> - <b>Elaborate: 100% Needed</b>  <i>For Intervention group</i> - 1 card from <b>Explore: Organism Cards</b> - 1 die
Evaluate	Individual	<i>For each student</i> - <b>Evaluate: Ecosystem Interactions</b>

Lesson 9: Structures and Functions

Phase	Instructional Grouping	Materials
Engage	Whole group	<p><i>For each student</i></p> <ul style="list-style-type: none"> <li>- half a straw</li> <li>- index card</li> <li>- paper towels</li> </ul> <p><i>For student groups</i></p> <ul style="list-style-type: none"> <li>- cup of water</li> </ul>
Explore	Small groups	<p><i>For each student</i></p> <ul style="list-style-type: none"> <li>- <b>Explore: Structures and Functions Data Sheet</b></li> </ul> <p><i>For Station 1</i></p> <ul style="list-style-type: none"> <li>- <b>Explore: Station 1—Hold Your Breath!</b></li> <li>- 2–4 timers or stopwatches</li> </ul> <p><i>For Station 2</i></p> <ul style="list-style-type: none"> <li>- <b>Explore: Station 2—Jump High!</b></li> <li>- meter stick</li> <li>- tape</li> </ul> <p><i>For Station 3</i></p> <ul style="list-style-type: none"> <li>- <b>Explore: Station 3—Jump Far!</b></li> <li>- 2 meter sticks</li> </ul> <p><i>For Station 4</i></p> <ul style="list-style-type: none"> <li>- <b>Explore: Station 4—20-meter Dash!</b></li> <li>- meter stick</li> <li>- 2 timers</li> </ul>
Explain	Whole group	<p><i>For each student</i></p> <ul style="list-style-type: none"> <li>- <b>Explain: Animals and Their Environments</b></li> </ul>
Elaborate	Student pairs Individual	<p><i>For teacher</i></p> <ul style="list-style-type: none"> <li>- <b>Elaborate: Create-a-Character Patterns</b></li> <li>- 8 brown paper bags</li> </ul>
	Teacher-led student group	<p><i>For each student</i></p> <ul style="list-style-type: none"> <li>- <b>Elaborate: Create a Character</b></li> <li>- scissors</li> <li>- glue or tape</li> <li>- markers, colored pencils, or crayons</li> </ul>
Evaluate	Individual	<p><i>For each student</i></p> <ul style="list-style-type: none"> <li>- <b>Evaluate: Structures and Functions</b></li> </ul>

Lesson 10: Learned Behaviors and Inherited Traits

Phase	Instructional Grouping	Materials
Engage	Whole group	<i>For teacher</i> <ul style="list-style-type: none"> <li>- <b>Engage: Basketball Player</b></li> <li>- projector</li> </ul>
Explore	Small groups	<i>For teacher</i> <ul style="list-style-type: none"> <li>- <b>Explore: Learned Behavior or Inherited Trait?</b></li> <li>- 3 sheets of cardstock—pink, blue, green</li> <li>- 3 craft sticks</li> <li>- 3 markers—pink, blue, green</li> <li>- dry erase markers (mixed colors)</li> <li>- chart paper</li> </ul>
Explain	Whole group	<i>For each student</i> <ul style="list-style-type: none"> <li>- <b>Explain: Behaviors and Traits</b></li> </ul>
Elaborate	Small groups Individual	<i>For each student</i> <ul style="list-style-type: none"> <li>- white paper</li> <li>- markers, colored pencils, or crayons</li> <li>- craft supplies (pom poms, craft sticks, construction paper, tissue paper, chenille stems, glue, tape, squiggly eyes, toothpicks, cupcake papers, etc.)</li> </ul>
	Teacher-led student group	
Evaluate	Individual	<i>For each student</i> <ul style="list-style-type: none"> <li>- <b>Evaluate: Learned Behaviors and Inherited Traits</b></li> </ul>