

**State: GA**

**Subject: Science (GSE)**

**Grade Level: 4**

Standard	Study Island Topic
<b>Earth and Space Science</b>	
<b>S4E1. Obtain, evaluate, and communicate information to compare and contrast the physical attributes of stars and planets.</b>	
<p><b>S4E1.a</b> Ask questions to compare and contrast technological advances that have changed the amount and type of information on distant objects in the sky.</p>	<ul style="list-style-type: none"> <li>• <b>The Study of the Universe</b></li> </ul>
<p><b>S4E1.b</b> Construct an argument on why some stars (including the Earth's sun) appear to be larger or brighter than others.</p>	<ul style="list-style-type: none"> <li>• <b>The Study of the Universe</b></li> </ul>
<p><b>S4E1.c</b> Construct an explanation of the differences between stars and planets.</p>	<ul style="list-style-type: none"> <li>• <b>The Study of the Universe</b></li> </ul>
<p><b>S4E1.d</b> Evaluate strengths and limitations of models of our solar system in describing relative size, order, appearance and composition of planets and the sun.</p>	<ul style="list-style-type: none"> <li>• <b>The Solar System</b></li> </ul>
<b>S4E2. Obtain, evaluate, and communicate information to model the effects of the position and motion of the Earth and the moon in relation to the sun as observed from the Earth.</b>	
<p><b>S4E2.a</b> Develop a model to support an explanation of why the length of day and night change throughout the year.</p>	<ul style="list-style-type: none"> <li>• <b>The Earth, Moon &amp; Sun System</b></li> </ul>
<p><b>S4E2.b</b> Develop a model based on observations to describe the repeating pattern of the phases of the moon (new,</p>	<ul style="list-style-type: none"> <li>• <b>The Earth, Moon &amp; Sun System</b></li> </ul>

crescent, quarter, gibbous, and full).

**S4E2.c** Construct an explanation of how the Earth's orbit, with its consistent tilt, affects seasonal changes.

- **The Earth, Moon & Sun System**

**S4E3. Obtain, evaluate, and communicate information to demonstrate the water cycle.**

**S4E3.a** Plan and carry out investigations to observe the flow of energy in water as it changes states from solid (ice) to liquid (water) to gas (water vapor) and changes from gas to liquid to solid.

- **The Water Cycle**

**S4E3.b** Develop models to illustrate multiple pathways water may take during the water cycle (evaporation, condensation, and precipitation).

- **The Water Cycle**

**S4E4. Obtain, evaluate, and communicate information to predict weather events and infer weather patterns using weather charts/maps and collected weather data.**

**S4E4.a** Construct an explanation of how weather instruments (thermometer, rain gauge, barometer, wind vane, and anemometer) are used in gathering weather data and making forecasts.

- **Weather Tools & Climate**

**S4E4.b** Interpret data from weather maps, including fronts (warm, cold, and stationary), temperature, pressure, and precipitation to make an informed prediction about tomorrow's weather.

- **Weather Forecasting**

**S4E4.c** Ask questions and use observations of cloud types (cirrus, stratus, and cumulus) and data of weather conditions to predict weather events.

- **Weather Forecasting**

**S4E4.d** Construct an explanation based on research to communicate the difference

- **Weather Tools & Climate**

between weather and climate.

<b>Physical Science</b>	
<b>S4P1. Obtain, evaluate, and communicate information about the nature of light and how light interacts with objects.</b>	
<b>S4P1.a</b> Plan and carry out investigations to observe and record how light interacts with various materials to classify them as opaque, transparent, or translucent.	<ul style="list-style-type: none"><li>• <b>Behavior of Light</b></li></ul>
<b>S4P1.b</b> Plan and carry out investigations to describe the path light travels from a light source to a mirror and how it is reflected by the mirror using different angles.	<ul style="list-style-type: none"><li>• <b>Behavior of Light</b></li></ul>
<b>S4P1.c</b> Plan and carry out an investigation utilizing everyday materials to explore examples of when light is refracted.	<ul style="list-style-type: none"><li>• <b>Behavior of Light</b></li></ul>
<b>S4P2. Obtain, evaluate, and communicate information about how sound is produced and changed and how sound and/or light can be used to communicate.</b>	
<b>S4P2.a</b> Plan and carry out an investigation utilizing everyday objects to produce sound and predict the effects of changing the strength or speed of vibrations.	<ul style="list-style-type: none"><li>• <b>Production &amp; Uses of Sound &amp; Light</b></li></ul>
<b>S4P2.b</b> Design and construct a device to communicate across a distance using light and/or sound.	<ul style="list-style-type: none"><li>• <b>Production &amp; Uses of Sound &amp; Light</b></li></ul>
<b>S4P3. Obtain, evaluate, and communicate information about the relationship between balanced and unbalanced forces.</b>	
<b>S4P3.a</b> Plan and carry out an investigation on the effects of balanced and unbalanced forces on an object and communicate the results.	<ul style="list-style-type: none"><li>• <b>Force &amp; Motion</b></li></ul>

<p><b>S4P3.b</b> Construct an argument to support the claim that gravitational force affects the motion of an object.</p>	<ul style="list-style-type: none"> <li>• <b>Force &amp; Motion</b></li> </ul>
<p><b>S4P3.c</b> Ask questions to identify and explain the uses of simple machines (lever, pulley, wedge, inclined plane, wheel and axle, and screw) and how forces are changed when simple machines are used to complete tasks.</p>	<ul style="list-style-type: none"> <li>• <b>Simple Machines</b></li> </ul>
<p><b>Life Science</b></p>	
<p><b>S4L1. Obtain, evaluate, and communicate information about the roles of organisms and the flow of energy within an ecosystem.</b></p>	
<p><b>S4L1.a</b> Develop a model to describe the roles of producers, consumers, and decomposers in a community.</p>	<ul style="list-style-type: none"> <li>• <b>Energy Flow in Ecosystems</b></li> </ul>
<p><b>S4L1.b</b> Develop simple models to illustrate the flow of energy through a food web/food chain beginning with sunlight and including producers, consumers, and decomposers.</p>	<ul style="list-style-type: none"> <li>• <b>Energy Flow in Ecosystems</b></li> </ul>
<p><b>S4L1.c</b> Design a scenario to demonstrate the effect of a change on an ecosystem.</p>	<ul style="list-style-type: none"> <li>• <b>Effects of Changes in Ecosystems</b></li> </ul>
<p><b>S4L1.d</b> Use printed and digital data to develop a model illustrating and describing changes to the flow of energy in an ecosystem when plants or animals become scarce, extinct or over-abundant.</p>	<ul style="list-style-type: none"> <li>• <b>Effects of Changes in Ecosystems</b></li> </ul>