



### 4<sup>th</sup> Grade Science Teaching & Learning Framework

Quarter 1		Quarter 2		Quarter 3		Quarter 4	
Unit 1 4 weeks	Unit 2 5 weeks	Unit 3 4 weeks	Unit 4 5 weeks	Unit 5 5 weeks	Unit 6 4 weeks	Unit 7 3 weeks	Unit 8 6 weeks
Earth & Moon	Stars & Planets	Ecosystems	Water	Weather	Light	Sound	Forces and Motion
<p><b>S4E2. Obtain, evaluate &amp; communicate information to model the effects of the position &amp; motion of the Earth &amp; the moon in relation to the sun as observed from the Earth.</b></p> <p>a. Develop a model to support an explanation of why the length of a day &amp; night change throughout the year.</p> <p>b. Develop a model based on observations to describe the repeating pattern of the phases of the moon (new, crescent, quarter, gibbous &amp; full)</p> <p>c. Construct an explanation of how the Earth's orbit, with its consistent tilt, affects seasonal change.</p>	<p><b>S4E1. Obtain, evaluate, &amp; communicate information to compare &amp; contrast the physical attributes of stars &amp; planets.</b></p> <p>a. Compare &amp; contrast technological advances that have changed the amount &amp; type of information on distant objects in the sky.</p> <p>b. Construct an argument on why some stars appear to be larger or brighter than other stars</p> <p>c. Construct an explanation of the differences between stars &amp; planets in the sky.</p> <p>d. Evaluate strengths &amp; limitations of models of our solar system in describing relative size, order, appearance, &amp; composition of planets &amp; the sun.</p>	<p><b>S4L1. Obtain, evaluate, &amp; communicate information about the roles of organisms &amp; the flow of energy within an ecosystem.</b></p> <p>a. Develop a model to describe the roles of producers, consumers, &amp; decomposers in a community.</p> <p>b. Develop simple models to illustrate the flow of energy through a food web/food chain beginning with sunlight &amp; including producers, consumers &amp; decomposers.</p> <p>c. Design a scenario to demonstrate the effect of a change on an ecosystem.</p> <p>d. Use printed &amp; digital data to develop a model illustrating &amp; describing changes to the flow of energy in an ecosystem when plants or animals become scarce, extinct, or over-abundant.</p>	<p><b>S4E3. Obtain, evaluate, and communicate information to demonstrate the water cycle.</b></p> <p>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.</p> <p>b. Develop models to illustrate multiple pathways water may take during the water cycle (evaporation, condensation, and precipitation).</p>	<p><b>S4E4. Obtain, evaluate, and communicate information to predict weather events and infer weather patterns using weather charts/maps and collected weather data.</b></p> <p>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.</p> <p>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.</p> <p>c. Ask questions and use observations of cloud types (cirrus, stratus, and cumulus) and data of weather conditions to predict weather events.</p> <p>d. Construct an explanation based on research to communicate the difference between weather and climate.</p>	<p><b>S4P1. Obtain, evaluate, &amp; communicate information about the nature of light &amp; how light interacts with objects.</b></p> <p>a. Plan &amp; carry out investigations to observe &amp; record how light interacts with various materials to classify them as opaque, transparent, or translucent.</p> <p>b. Plan &amp; carry out investigations on the path of light travels from a light source to a mirror &amp; how it is reflected by the mirror using different angles.</p> <p>c. Plan &amp; carry out an investigation utilizing everyday materials to explore examples of refraction.</p> <p><b>S4P2. Obtain, evaluate &amp; communicate information about how sound is produced &amp; changed &amp; how sound &amp;/or light can be used to communicate.</b></p> <p>b. Design &amp; construct a device to communicate across a distance using light &amp;/or sound.</p>	<p><b>S4P2. Obtain, evaluate &amp; communicate information about how sound is produced &amp; changed &amp; how sound &amp;/or light can be used to communicate.</b></p> <p>a. Plan &amp; carry out an investigation utilizing everyday objects to produce sound &amp; predict the effects of changing the strength or speed of vibrations.</p> <p>b. Design &amp; construct a device to communicate across a distance using light &amp;/or sound.</p>	<p><b>S4P3. Obtain, evaluate, and communicate information about the relationship between balanced and unbalanced forces.</b></p> <p>a. Plan &amp; carry out an investigation on the effects of balanced &amp; unbalanced forces on an object &amp; communicate the results.</p> <p>b. Construct an argument to support the claim that gravitational force affects the motion of an object.</p> <p>c. Ask questions to identify &amp; explain the uses of simple machines &amp; how forces are changed when simple machines are used to complete tasks.</p>