



6th Grade Science Standards

6 th Grade Earth Science Teaching & Learning Framework * Clarification statements not provided on framework							
Quarter 1		Quarter 2		Quarter 3		Quarter 4	
Unit 1 5 weeks	Unit 2 4 weeks	Unit 3 5 weeks	Unit 4 4 weeks	Unit 5 5 weeks	Unit 6 5 weeks	Unit 7 5 weeks	Unit 8 3 weeks
Solar Sys. & Universe	Earth and Moon	Climate and Weather	Water on the Earth	The Dynamic Earth	Rocks and Minerals	Weathering, Erosion, Soil	Energy/ Conservation
<p>S6E1. Obtain, evaluate, and communicate information about current scientific views of the universe and how those views evolved.</p> <p>a. Ask questions to determine changes in models of Earth's position in the solar system, and origins of the universe as evidence that scientific theories change with the addition of new information.</p> <p>b. Develop a model to represent the position of the solar system in the Milky Way galaxy and in the known universe.</p> <p>c. Analyze and interpret data to compare and contrast the planets in our solar system in terms of: size relative to Earth, surface and atmospheric features, relative distance from the sun, and ability to support life.</p> <p>d. Develop and use a model to explain the interaction of gravity and inertia that governs the motion of objects in the solar sys.</p> <p>e. Ask questions to compare and contrast the characteristics, composition, and location of comets, asteroids, and meteoroids.</p>	<p>S6E2. Obtain, evaluate, and communicate information about the effects of the relative positions of the sun, Earth, and moon.</p> <p>a. Develop and use a model to demonstrate the phases of the moon by showing the relative positions of the sun, Earth, and moon.</p> <p>b. Construct an explanation of the alignment of the sun, Earth, and moon during solar and lunar eclipses.</p> <p>c. Analyze and interpret data to relate the tilt of the Earth to the distribution of sunlight throughout the year and its effect on seasons.</p>	<p>S6E4. Obtain, evaluate, and communicate information about how the sun, land, and water affect climate and weather.</p> <p>a. Analyze and interpret data to compare and contrast the composition of Earth's atmospheric layers (including the ozone layer) and greenhouse gases.</p> <p>b. Plan and carry out an investigation to demonstrate how energy from the sun transfers heat to air, land and water at different rates.</p> <p>c. Develop a model demonstrating the interaction between unequal heating and the rotation of the Earth that causes local and global wind systems.</p> <p>d. Construct an explanation of the relationship between air pressure, fronts, and air masses and meteorological events such as tornados and thunderstorms.</p> <p>e. Analyze and interpret weather data to explain the effects of moisture evaporating from the ocean on weather patterns and weather events such as hurricanes.</p>	<p>S6E3. Obtain, evaluate, and communicate information to recognize the significant role of water in Earth processes.</p> <p>a. Ask questions to determine where water is located on Earth's surface (oceans, rivers, lakes, swamps, groundwater, aquifers, and ice) and communicate the relative proportion of water at each location.</p> <p>b. Plan and carry out an investigation to illustrate the role of the sun's energy in atmospheric conditions that lead to the cycling of water.</p> <p>c. Ask questions to identify and communicate, using graphs and maps, the composition, location, and subsurface topography of the world's oceans.</p> <p>d. Analyze and interpret data to create graphic representations of the causes and effects of waves, currents, and tides in Earth's systems.</p>	<p>S6E5. Obtain, evaluate, and communicate information to show how Earth's surface is formed.</p> <p>a. Ask questions to compare and contrast the Earth's crust, mantle, inner and outer core, including temperature, density, thickness, and composition.</p> <p>g. Construct an argument using maps and data collected to support a claim of how fossils show evidence of the changing surface and climate of the Earth.</p> <p>f. Construct an explanation of how the movement of lithospheric plates, called plate tectonics, can cause major geologic events such as earthquakes and volcanic eruptions. (Clarification statement: Include convergent, divergent, and transform boundaries.)</p>	<p>S6E5. Obtain, evaluate, and communicate information to show how Earth's surface is formed.</p> <p>b. Plan and carry out an investigation of the characteristics of minerals and how minerals contribute to rock composition.</p> <p>c. Construct an explanation of how to classify rocks by their formation and how rocks change through geologic processes in the rock cycle.</p>	<p>S6E5. Obtain, evaluate, and communicate information to show how Earth's surface is formed.</p> <p>d. Ask questions to identify types of weathering, agents of erosion and transportation, and environments of deposition.</p> <p>e. Develop a model to demonstrate how natural processes (weathering, erosion, and deposition) and human activity change rocks and the surface of the Earth.</p> <p>h. Plan and carry out an investigation to provide evidence that soil is composed of layers of weathered rocks and decomposed organic material.</p>	<p>S6E6. Obtain, evaluate, and communicate information about the uses & conservation of various natural resources and how they impact the Earth.</p> <p>a. Ask questions to determine the differences between renewable/sustainable energy resources</p> <p>b. Design and evaluate solutions for sustaining the quality and supply of natural resources such as water, soil, and air.</p> <p>c. Construct an argument evaluating contributions to the rise in global temperatures over the past century.</p>
<p>AC Extension: Explain the origins of the solar system (SES1a)</p>	<p>AC Extension: Analyze and interpret data related to short-term natural cyclic fluctuations of climate (ex: El Nino) (SEV2a)</p>	<p>AC Extension: Analyze and interpret data to show how temperature and precipitation produce pattern of climate regions (zones) on Earth (SES5d)</p>	<p>AC Extension: Plan and carry out investigations of how chemical and physical properties impact local aquatic biomes (SEV1e)</p>	<p>AC Extension: Construct an argument using multiple forms of evidence that supports the theory of plate tectonics (i.e. fossils, paleomagnetism, seafloor age, etc...) (SES2e).</p>	<p>AC Extension: Apply the principles of relative age (superposition, etc.) to interpret a geologic cross-section (SES4b)</p>	<p>AC Extension: Develop a model of the processes and geologic hazards that result from both sudden and gradual movements (SES3b)</p>	<p>AC Extension: Design and defend a sustainable energy plan based on scientific principles for your location (SEV3d)</p>