Georgia Science

Grade 6

Adopted 2016

Earth and Space Science

S6E1. Obtain, evaluate, and communicate information about current scientific views of the universe and how those views evolved. S6E1

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. S6E1.A

b. Develop a model to represent the position of the solar system in the Milky Way galaxy and in the known universe. S6E1.B

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. S6E1.C

d. Develop and use a model to explain the interaction of gravity and inertia that governs the motion of objects in the solar system. S6E1.D

e. Ask questions to compare and contrast the characteristics, composition, and location of comets, asteroids, and meteoroids. S6E1.E

S6E2. Obtain, evaluate, and communicate information about the effects of the relative positions of the sun, Earth, and moon. S6E2

a. Develop and use a model to demonstrate the phases of the moon by showing the relative positions of the sun, Earth, and moon. S6E2.A

b. Construct an explanation of the cause of solar and lunar eclipses. S6E2.B

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. S6E2.C

S6E3. Obtain, evaluate, and communicate information to recognize the significant role of water in Earth processes. S6E3

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. S6E3.A

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. S6E3.B

c. Ask questions to identify and communicate, using graphs and maps, the composition, location, and subsurface topography of the world's oceans. S6E3.C

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d. Analyze and interpret data to create graphic representations of the causes and effects of waves, currents, and tides in Earth's systems. S6E3.D

S6E4. Obtain, evaluate, and communicate information about how the sun, land, and water affect climate and weather. S6E4

a. Analyze and interpret data to compare and contrast the composition of Earth's atmospheric layers (including the ozone layer) and greenhouse gases. S6E4.A

b. Plan and carry out an investigation to demonstrate how energy from the sun transfers heat to air, land and water at different rates. S6E4.B

c. Develop a model demonstrating the interaction between unequal heating and the rotation of the Earth that causes local and global wind systems. S6E4.C

d. Construct an explanation of the relationship between air pressure, weather fronts, and air masses and meteorological events such as tornados and thunderstorms. S6E4.D

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. S6E4.E

S6E5. Obtain, evaluate, and communicate information to show how Earth's surface is formed. S6E5

a. Ask questions to compare and contrast the Earth's crust, mantle, inner and outer core, including temperature, density, thickness, and composition. S6E5.A

b. Plan and carry out an investigation of the characteristics of minerals and how minerals contribute to rock composition. S6E5.B

c. Construct an explanation of how to classify rocks by their formation and how rocks change through geologic processes in the rock cycle. S6E5.C

d. Ask questions to identify types of weathering, agents of erosion and transportation, and environments of deposition. S6E5.D

e. Develop a model to demonstrate how natural processes (weathering, erosion, and deposition) and human activity change rocks and the surface of the Earth. S6E5.E

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. S6E5.F

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. S6E5.G

h. Plan and carry out an investigation to provide evidence that soil is composed of layers of weathered rocks and decomposed organic material. S6E5.H

S6E6. Obtain, evaluate, and communicate information about the uses and conservation of various natural resources and how they impact the Earth. S6E6

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a. Ask questions to determine the differences between renewable/sustainable energy resources (examples: hydro, solar, wind, geothermal, tidal, biomass) and non-renewable energy resources (examples: nuclear: uranium, fossil fuels: oil, coal, and natural gas), and how they are used in our everyday lives. S6E6.A

b. Design and evaluate solutions for sustaining the quality and supply of natural resources such as water, soil, and air. S6E6.B

c. Construct an argument evaluating contributions to the rise in global temperatures over the past century. S6E6.C