Georgia Science

Grade 4

Adopted 2016

Earth and Space Science

S4E1. Obtain, evaluate, and communicate information to compare and contrast the physical attributes of stars and planets. S4E1

a. Ask questions to compare and contrast technological advances that have changed the amount and type of information on distant objects in the sky. S4E1.A

b. Construct an argument on why some stars (including the Earth's sun) appear to be larger or brighter than others. S4E1.B

c. Construct an explanation of the differences between stars and planets. S4E1.C

d. Evaluate strengths and limitations of models of our solar system in describing relative size, order, appearance and composition of planets and the sun. S4E1.D

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. S4E2

a. Develop a model to support an explanation of why the length of day and night change throughout the year. S4E2.A

b. Develop a model based on observations to describe the repeating pattern of the phases of the moon (new, crescent, quarter, gibbous, and full). S4E2.B

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

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. S4E3.A

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

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

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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. S4E4.A

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. S4E4.B

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

d. Construct an explanation based on research to communicate the difference between weather and climate. S4E4.D

Physical Science

S4P1. Obtain, evaluate, and communicate information about the nature of light and how light interacts with objects. S4P1

a. Plan and carry out investigations to observe and record how light interacts with various materials to classify them as opaque, transparent, or translucent. S4P1.A

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. S4P1.B

c. Plan and carry out an investigation utilizing everyday materials to explore examples of when light is refracted. S4P1.C

S4P2. Obtain, evaluate, and communicate information about how sound is produced and changed and how sound and/or light can be used to communicate. S4P2

a. Plan and carry out an investigation utilizing everyday objects to produce sound and predict the effects of changing the strength or speed of vibrations. S4P2.A

b. Design and construct a device to communicate across a distance using light and/or sound. S4P2.B

S4P3. Obtain, evaluate, and communicate information about the relationship between balanced and unbalanced forces. S4P3

a. Plan and carry out an investigation on the effects of balanced and unbalanced forces on an object and communicate the results. S4P3.A

b. Construct an argument to support the claim that gravitational force affects the motion of an object. S4P3.B

c. 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. S4P3.C

Life Science

S4L1. Obtain, evaluate, and communicate information about the roles of organisms and the flow of energy within an ecosystem. S4L1

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a. Develop a model to describe the roles of producers, consumers, and decomposers in a community. S4L1.A

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. S4L1.B

c. Design a scenario to demonstrate the effect of a change on an ecosystem. S4L1.C

d. 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. S4L1.D