

# Science: Grade 4

## ENERGY

**1a** Identify that moving objects contain energy. [LC-4-PS3-1A](#)

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**1b** Demonstrate that objects moving faster possess more energy than objects moving slower. [LC-4-PS3-1B](#)

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**2a** Identify examples of how energy can be moved from place to place (i.e., through sound or light traveling; by electrical currents; heat passing from one object to another). [LC-4-PS3-2A](#)

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**3a** Identify the change in energy or the change in objects' motions when objects collide (e.g., speeds as objects interact, direction). [LC-4-PS3-3A](#)

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**4a** Relate an example that demonstrates that energy can be converted from one form to another form (e.g., electric circuits that convert electrical energy into light, motion, sound or heat). [LC-4-PS3-4A](#)

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## WAVES AND THEIR APPLICATIONS IN TECHNOLOGIES FOR INFORMATION TRANSFER

**1a** Describe the properties of waves using a model (e.g., drawings, diagrams) to show amplitude (height) and wavelength. [LC-4-PS4-1A](#)

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**1b** Identify relationships involving wave amplitude, wavelength, and the motion of an object (e.g., when the amplitude increases, the object moves more). [LC-4-PS4-1B](#)

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**1c** Identify amplitude as a measure of energy in a wave. [LC-4-PS4-1C](#)

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**1d** Identify wavelength as the distance between a point on one wave and the identical point on the next wave. [LC-4-PS4-1D](#)

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**2a** Arrange a model to show that light can be seen when light reflected from its surface enters the eye. [LC-4-PS4-2A](#)

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## FROM MOLECULES TO ORGANISMS: STRUCTURE AND PROCESSES

**1a** Identify external macroscopic structures (e.g., bird beaks, eyes, feathers, roots, needles on a pine tree) that support growth, survival, behavior, and reproduction of organisms. [LC-4-LS1-1A](#)

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**1b** Identify internal structures (e.g., heart, muscles, bones) that support growth, survival, behavior, and reproduction of organisms. [LC-4-LS1-1B](#)

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**2a** Identify that sense receptors provide different kinds of information, which is processed by the brain. [LC-4-LS1-2A](#)

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**2b** Identify how animals use their sense receptors to respond to different types of information (e.g., sound, light, odor, temperature) in their surroundings with behaviors that help them survive. LC-4-LS1-2B

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**2c** Identify how animals use their memories to help them survive. LC-4-LS1-2C

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## EARTH'S PLACE IN THE UNIVERSE

**1a** Identify rock formations that show how the Earth's surface has changed over time (e.g., change following earthquakes). LC-4-ESS1-1A

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**1b** Identify older fossils as being found in deeper, older rock layers. LC-4-ESS1-1B

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## EARTH'S SYSTEM

**1a** Use data to compare differences in the shape of the land due to the effects of weathering or erosion. LC-4-ESS2-1A

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**1b** Identify how living things affect the shape of the land. LC-4-ESS2-1B

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**2a** Use maps to locate different land and water features of Earth. LC-4-ESS2-2A

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**2b** Use maps to determine that earthquakes and volcanoes often occur along the boundaries between continents. LC-4-ESS2-2B

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**3a** Identify how plants affect the environment (e.g., some have roots that can stabilize or destabilize the soil). LC-4-ESS2-3A

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**3b** Identify how animals affect the environment (e.g., they disturb rocks, soil, and sediment; some build dams or nests). LC-4-ESS2-3B

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## EARTH AND HUMAN ACTIVITY

**1a** Identify the origins of the natural sources humans use for energy and fuel. LC-4-ESS3-1A

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**1b** Identify environmental effects associated with the use of a given energy resource. LC-4-ESS3-1B

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**2a** Describe solutions to reduce the impact of a natural Earth process (e.g., earthquake, flood, volcanic activity) on humans. LC-4-ESS3-2A

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