

Grade 4

Adopted 2013

Energy 4-PS3

Students who demonstrate understanding can:

- 4-PS3-1. Use evidence to construct an explanation relating the speed of an object to the energy of that object. 4-PS3-1
- 4-PS3-2. Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents. 4-PS3-2
- 4-PS3-3. Ask questions and predict outcomes about the changes in energy that occur when objects collide. 4-PS3-3
- 4-PS3-4. Apply scientific ideas to design, test, and refine a device that converts energy from one form to another. 4-PS3-4

Waves and their Applications in Technologies for Information Transfer 4-PS4

Students who demonstrate understanding can:

- 4-PS4-1. Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move. 4-PS4-1
- 4-PS4-2. Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen. 4-PS4-2
- 4-PS4-3. Generate and compare multiple solutions that use patterns to transfer information. 4-PS4-3

From Molecules to Organisms: Structures and Processes 4-LS1

Students who demonstrate understanding can:

- 4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. 4-LS1-1
- 4-LS1-2. Use a model to describe that animals' receive different types of information through their senses, process the information in their brain, and respond to the information in different ways. 4-LS1-2

Earth's Place in the Universe 4-ESS1

Students who demonstrate understanding can:

- 4-ESS1-1. Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time. 4-ESS1-1

Earth's Systems 4-ESS2

Students who demonstrate understanding can:

- 4-ESS2-1.** Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation. **4-ESS2-1**
- 4-ESS2-2.** Analyze and interpret data from maps to describe patterns of Earth's features. **4-ESS2-2**
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**Earth and Human
Activity** **4-ESS3**

Students who demonstrate understanding can:

- 4-ESS3-1.** Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment. **4-ESS3-1**
- 4-ESS3-2.** Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans. **4-ESS3-2**
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Engineering Design **3-5-ETS1**

Students who demonstrate understanding can:

- 3-5-ETS1-1.** Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. **3-5-ETS1-1**
- 3-5-ETS1-2.** Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. **3-5-ETS1-2**
- 3-5-ETS1-3.** Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved. **3-5-ETS1-3**