Nebraska Science

# Grade 4

**Waves: Waves and Information** SC.4.2

1 **Gather, analyze, and communicate evidence of waves and the information they transfer.** SC.4.2.1

- a Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move. SC.4.2.1.A
- b Generate and compare multiple solutions that use patterns to transfer information. SC.4.2.1.B

**Energy: Conservation and Transfer** SC.4.4

2 **Gather, analyze and communicate evidence of energy conservation and transfer.** SC.4.4.2

- a Use evidence to construct an explanation relating the speed of an object to the energy of that object. SC.4.4.2.A
- b Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electrical currents. SC.4.4.2.B
- c Ask questions and predict outcomes about the changes in energy that occur when objects collide. SC.4.4.2.C
- d Apply scientific ideas to design, test, and refine a device that converts energy from one form to another. SC.4.4.2.D
- e 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. SC.4.4.2.E
- f Obtain and combine information to describe that energy and fuels are derived from natural resources and that their uses affect the environment. SC.4.4.2.F

**Structure, Function, and Information Processing** SC.4.6

3 **Gather and analyze data to communicate an understanding of structure, function and information processing of living things.** SC.4.6.3

- a Develop a model to describe that light reflecting from objects and entering the eyes allows objects to be seen. SC.4.6.3.A
- b Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. SC.4.6.3.B
- c 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. SC.4.6.3.C

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**Earth's Systems: Processes That Shape the Earth** SC.4.13

4 **Gather and analyze data to communicate an understanding of Earth's systems and processes that shape the Earth.** SC.4.13.4

a Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time. SC.4.13.4.A

b Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation. SC.4.13.4.B

c Analyze and interpret data from maps to describe patterns of Earth's features. SC.4.13.4.C

d Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans. SC.4.13.4.D