Indiana Science: Grades K-8

Grade 4

Energy	1	Use evidence to construct an explanation relating the speed of an object to the energy of that object. 4-PS3-1
	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
	3	Ask questions and predict outcomes about the changes in energy that occur when objects collide. 4-PS3-3
	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	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
	2	Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen. 4-PS4-2
	3	Generate and compare multiple solutions that use patterns to transfer information. 4-PS4-3
From Molecules to Organisms: Structures and Processes	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
	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	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	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
	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	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
	2	**Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.** 4-ESS3-2
Engineering Design	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
	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	**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