Iowa Science

Fourth Grade

Use evidence to construct an explanation relating the speed of an object to the energy of that object. 4-PS3-1	1 **Use evidence to construct an explanation relating the speed of an object to the energy of that object.** 4-PS3-1
Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents. 4-PS3-2	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
Ask questions and predict outcomes about the changes in energy that occur when objects collide. 4-PS3-3	3 **Ask questions and predict outcomes about the changes in energy that occur when objects collide.** 4-PS3-3
Apply scientific ideas to design, test, and refine a device that converts energy from one form to another. 4-PS3-4	4 **Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.** 4-PS3-4
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	5 **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
Develop a model to describe that light ref an	6 **Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen.** 4-PS4-2

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allows objects to be seen. 4-PS4-2	
Generate and compare multiple solutions that use patterns to transfer information. 4-PS4-3	**7** **Generate and compare multiple solutions that use patterns to transfer information.** 4-PS4-3
Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. 4-LS1-1	**8** **Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.** 4-LS1-1
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	**9** **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
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	**10** **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
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	**11** **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
Analyze and interpret data from maps to describe patterns of Ea ESS	**12** **Analyze and interpret data from maps to describe patterns of Earth's features.** 4-ESS2-2

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Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment. 4-ESS3-1	**13** **Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.** 4-ESS3-1
Generate and compare multiple solutions to reduce the impacts of natural Earth hazards on humans. 4-ESS3-2	**14** **Generate and compare multiple solutions to reduce the impacts of natural Earth hazards on humans.** 4-ESS3-2
Define a simple design problem, reflecting a need or a want, that includes specified criteria for success and constraints on materials, time, or cost. 4-ETS1-1	**15** **Define a simple design problem, reflecting a need or a want, that includes specified criteria for success and constraints on materials, time, or cost.** 4-ETS1-1
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. 4-ETS1-2	**16** **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.** 4-ETS1-2
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. 4-ETS1-3	**17** **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.** 4-ETS1-3