

Science Grade 4 Scope & Sequence

Time Frame	Unit	NGSS Standard(s)/Outcome(s)	Essential/Guiding Questions
<p style="text-align: center;">Fall Beginning of the school year. 1st unit</p>	<p style="text-align: center;">Interdependent Relationships in Ecosystems</p>	<p>3-LS4-3 Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.</p> <p>3-LS4-4 Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.</p>	<ul style="list-style-type: none"> ● What do organisms need to survive in their environment? ● Why do some organisms form groups? ● How do organisms interact in groups so as to benefit individuals? ● Why do populations increase and decrease in an ecosystem? ● How does the environment influence populations of organisms over multiple generations? ● What are some ways in which an ecosystem can change? ● What happens to the ecosystem when the environment changes?
<p style="text-align: center;">Fall/Winter 2nd unit</p>	<p style="text-align: center;">Energy</p>	<p>4-PS3-1 Use evidence (e.g., measurements, observations, patterns) to construct an explanation relating the speed of an object to the energy of that object.</p> <p>4-PS3-2 Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.</p> <p>4-PS3-3 Ask questions and predict outcomes about the changes in energy that occur when objects collide.</p> <p>4-PS3-4 Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.</p>	<ul style="list-style-type: none"> ● What evidence do you have that objects move at different speeds? ● What evidence do you have that objects move at different speeds? ● What evidence do you have that shows the faster an object moves the more energy it has? ● What evidence do you have energy can be transferred from place to place? ● How is energy transferred from one place to another? ● What evidence do you have that electric currents are transferred from place to place? ● What evidence do you have that electric currents are transferred from place to place? ● How are nonrenewable fuels used to

		<p>4-ESS3-1 Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.</p>	<p>provide energy?</p> <ul style="list-style-type: none"> ● What are the effects of using nonrenewable fuels? ● How are renewable energy resources beneficial to the environment? ● How can we create a device that will transfer energy from one form to another?
<p>Winter/ Spring 3rd unit</p>	<p>Waves</p>	<p>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.</p> <p>4-PS4-3 Generate and compare multiple solutions that use patterns to transfer information.</p>	<ul style="list-style-type: none"> ● What are waves? ● What are some examples of waves? ● How do waves move? ● How do waves allow the transfer of energy and information? ● How do waves allow people to see, hear and communicate?
<p>Final Unit</p>	<p>Earth Systems</p>	<p>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.</p> <p>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.</p> <p>4-ESS2-2 Analyze and interpret data from maps to describe patterns of Earth's features.</p> <p>4-ESS3-2 Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.</p>	<ul style="list-style-type: none"> ● What is erosion and what causes it? ● How does water and wind shape and reshape the Earth's surface? ● What is erosion and what causes it? ● What is weathering? ● What variables affect the rate of erosion? ● How do the amount of impervious surfaces affect the rate of erosion? ● How do varying surfaces affect the rate of erosion? ● How does vegetation affect the rate of erosion? ● What happens to the material after it is eroded? ● What patterns are observed to describe the location of Earth's features? ● What variables affect the rate of

			<p>erosion?</p> <ul style="list-style-type: none">● How do various surfaces within a landscape affect the rate of erosion?● What changes can be made to slow or prevent erosion?● What effects does erosion have on the health of a community?
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