

Standard	4 Exceeding	3 Meeting	2 Developing	1 Area of Concern
	Student has independently exceeded grade level expectations and demonstrated a deep level of understanding of the standard.	Student meets grade level expectations with consistency and accuracy.	Student is developing an understanding of, but is not yet meeting grade level expectations and demonstrates inconsistent progress toward standard.	Student is not demonstrating an understanding of the grade level expectation for the standard.
<b>Energy</b>				
4-PS3-1	<ul style="list-style-type: none"> <li>• <b>Use evidence to explain relationship between speed/energy of an object</b> <ul style="list-style-type: none"> <li>➤ Does not include quantitative measures of changes in the speed of an object or definition of energy</li> </ul> </li> </ul>			
4-PS3-2	<ul style="list-style-type: none"> <li>• <b>Make observations to provide evidence of energy transfer from place to place by sound/light/heat and electrical currents</b> <ul style="list-style-type: none"> <li>➤ Do not include quantitative measurement of energy</li> </ul> </li> </ul>			
4-PS3-3	<ul style="list-style-type: none"> <li>• <b>Ask questions/predict outcomes about energy changes when objects collide</b> <ul style="list-style-type: none"> <li>➤ Emphasis on the change in the energy due to the change in speed NOT on forces as objects interact               <ul style="list-style-type: none"> <li>○ Do not include quantitative measurement of energy</li> </ul> </li> </ul> </li> </ul>			
4-PS3-4	<ul style="list-style-type: none"> <li>• <b>Apply scientific ideas to design/test/refine a device that converts energy from one form to another</b> <ul style="list-style-type: none"> <li>➤ Examples of devices could include: electric circuits that convert electrical energy into motion energy of a vehicle, light or sound</li> <li>➤ AND a passive solar heater that converts light into heat</li> <li>➤ Examples of constraints could include: the materials, cost, or time</li> <li>➤ Devices should be limited to those that convert motion energy to electric energy</li> <li>➤ OR use stored energy to cause motion or produce light or sound</li> </ul> </li> </ul>			

4-ESS3-1	<ul style="list-style-type: none"> <li>• <b>Obtain/combine information to describe energy/fuels come from natural resources and that their uses effect the environment</b> <ul style="list-style-type: none"> <li>○ Examples of renewable energy resources could include: wind energy, water behind dams, and sunlight</li> <li>○ OR nonrenewable energy resources are fossil fuels and fissile materials</li> <li>○ Examples of environmental effects could include loss of habitat due to dams, loss of habitat due to surface mining, and air pollution from burning of fossil fuels.</li> </ul> </li> </ul>
<b>Waves: Waves and Information</b>	
4-PS4-1	<ul style="list-style-type: none"> <li>• <b>Develop a model of waves to describe patterns in amplitude, wavelength, ability to make objects move</b> <ul style="list-style-type: none"> <li>➢ Examples of models could include diagrams, analogies, and physical models using wire to illustrate wavelength and amplitude of waves</li> <li>➢ Do not include interference effects, electromagnetic waves, non-periodic waves or quantitative models of amplitude or wavelength</li> </ul> </li> </ul>
4-PS4-3	<ul style="list-style-type: none"> <li>• <b>Generate and compare solutions that use patterns to transfer information</b> <ul style="list-style-type: none"> <li>➢ Examples of solutions could include drums sending coded information through sound waves,</li> <li>➢ OR using a grid of 1's and 0's representing black and white to send information about a picture</li> <li>➢ OR using Morse code to send text</li> </ul> </li> </ul>
<b>Structure, Function and Information Processing</b>	
4-PS4-2	<ul style="list-style-type: none"> <li>• <b>Develop a model describing how light reflecting from an object to the eye allows objects to be seen</b> <ul style="list-style-type: none"> <li>➢ Do not include knowledge of specific colors reflected and seen, the cellular mechanisms of vision, or how the retina works</li> </ul> </li> </ul>
4-LS1-1	<ul style="list-style-type: none"> <li>• <b>Construct an argument that plants/animals have internal/external structures to support survival/growth/behavior/reproduction</b> <ul style="list-style-type: none"> <li>➢ Examples of structures could include thorns, stems, roots, colored petals, heart stomach, lungs, brain and skin</li> <li>➢ Limit to macroscopic structures within plant/animal systems</li> </ul> </li> </ul>

4-LS1-2	<ul style="list-style-type: none"> <li>• <b>Use a model to describe how animals receive information through senses/process it in their brain/and respond in different ways</b> <ul style="list-style-type: none"> <li>➤ Emphasis on systems of information transfer</li> <li>○ Do not include mechanisms by which the brain stores and recalls information or the mechanism of how sensory receptors function</li> </ul> </li> </ul>
<b>Earth's Systems: Processes that Shape the Earth</b>	
4-ESS1-1	<ul style="list-style-type: none"> <li>• <b>Identify evidence from patterns in rock formations/fossils in rock layers to explain changes over time</b> <ul style="list-style-type: none"> <li>➤ Examples of evidence from patterns could include: rock layers with marine shell fossils above rock layers with plant fossils and no shells, indicating a change from land to water over time,</li> <li>➤ AND a canyon with different rock layers in the walls and a river in the bottom indicating that over time a river cut through the rock</li> <li>➤ Do not include specific knowledge of the mechanisms of rock formation or memorization of specific rock formations and layers</li> <li>➤ Limited to relative time</li> </ul> </li> </ul>
4-ESS2-1	<ul style="list-style-type: none"> <li>• <b>Make observations/measurements to provide evidence about effects of weathering/rate of erosion by water/ice/wind/vegetation</b> <ul style="list-style-type: none"> <li>➤ Examples of variables to test could include: angle of slope in the downhill movement of water</li> <li>➤ OR amount of vegetation</li> <li>➤ OR speed of wind</li> <li>➤ OR relative rate of deposition</li> <li>➤ OR cycles of freezing and thawing of water</li> <li>➤ OR cycles of heating and cooling</li> <li>➤ AND volume of water flow</li> <li>➤ Limit learning to a single form of weathering or erosion</li> </ul> </li> </ul>

4-ESS2-2	<ul style="list-style-type: none"><li>• <b>Analyze/interpret data from maps to describe patterns of Earth’s features</b><ul style="list-style-type: none"><li>➤ Maps can include topographic maps of Earth’s land and ocean floor as well as maps of the locations of mountains, continental boundaries, volcanoes and earthquakes.</li></ul></li></ul>
4-ESS3-2	<ul style="list-style-type: none"><li>• <b>Generate/compare multiple solutions to reduce impacts of natural Earth processes on humans</b><ul style="list-style-type: none"><li>➤ Examples of solutions could include: designing an earthquake resistant building and improving monitoring of volcanic activity</li><li>○ Limit learning to earthquakes, floods, tsunamis, and volcanic eruptions</li></ul></li></ul>