

Standards for Lesson Plans Track and Explore

Lesson	Standards Incorporated
Trail Walk	<p>5-LS1-1 Support an argument that plants get the materials they need for growth chiefly from air and water.</p> <p>MS-LS4-4 Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment.</p>
Animal Encounter	<p>5-PS3-1 Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun.</p> <p>5-LS2-1 Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.</p> <p>MS-LS1-6 Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.</p> <p>MS-LS2-1 Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem. AE</p> <p>MS-LS2-3 Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.</p> <p>MS-LS2-4 Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.</p> <p>Interdependent Relationships in Ecosystems</p> <p>MS-LS2-2 Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.</p> <p>MS-LS1-4 Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.</p>
Water Quality	<p>MS-ETS1-1 Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant</p>

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	<p>scientific principles and potential impacts on people and the natural environment that may limit possible solutions.</p> <p>MS-ETS1-2 Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.</p> <p>5-ESS3-1 Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.</p> <p>MS-ESS3-3 Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.</p>
<p>Physics Track</p>	<p>MS-PS2-1 Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects.</p> <p>MS-PS2-2 Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.</p> <p>MS-PS2-5 Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.</p>
<p>Physics Champions Club</p>	<p>3-5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.</p> <p>3-5-ETS1-2 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.</p> <p>3-5-ETS1-3 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.</p> <p>MS-PS2-1 Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects.</p> <p>MS-PS2-2 Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the</p> <p>MS-PS3-1 Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an</p>

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	<p>object and to the speed of an object.</p> <p>object.</p> <p>MS-PS3-2 Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.</p> <p>MS-PS3-5 Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the</p> <p>MS-ETS1-2 Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.</p> <p>object.</p> <p>MS-ETS1-1 Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.</p> <p>MS-ETS1-3 Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.</p>
Microscopes	<p>MS-LS1-1 Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.</p> <p>MS-LS1-2 Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function.</p>