

PRESTON PUBLIC SCHOOLS
Science Curriculum Revision to Align with NGSS
Unit Plan Organizer
5th Grade

Grade Level	Unit Name	Unit Theme/Description	NGS Standards Included
5	Matter and Its Interactions	Students will identify types of matter and the particles that make it up using modeling. Students will change matter by melting, evaporating, and dissolving to prove that although the physical appearance has changed, the same amount of matter still exists. Students will use a variety of properties to identify matter. Students will also focus on physical and chemical changes that occur when mixing matter.	<p>5-PS1-1. Develop a model to describe that matter is made of particles too small to be seen (Incorporates DCI PS1.A);</p> <p>5-PS1-2. Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved (Incorporates DCI PS1.A and DCI PS1.B);</p> <p>5-PS1-3. Make observations and measurements to identify materials based on their properties (Incorporates DCI PS1.A);</p> <p>5-PS1-4. Conduct an investigation to determine whether the mixing of two or more substances results in new substances (Incorporates DCI PS1.B).</p> <p>Science & Engineering Practices: --Develop a model to describe phenomena. Make observations and measurements to produce data to serve as the basis for evidence for an explanation of a phenomenon. --Conduct an investigation collaboratively to produce data to serve as the basis for evidence,</p>

			using fair tests in which variables are controlled and the number of trials considered.
5	Transfer of Energy and Matter through Organisms in an Ecosystem	Students will identify solar energy and the two forms of energy solar energy provides life on Earth. Students will conduct experiments to gather evidence to support how plants get materials they need for growth from either water, air, or the soil. Students will also create food chains and food webs to describe the movement of matter among organisms in an ecosystem.	<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 (Incorporates DCI PS3.D and LS1.C);</p> <p>5-LS1-1. Support an argument that plants get the materials they need for growth chiefly from air and water (Incorporates DCI LS1.C);</p> <p>5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment (Incorporates DCI LS2.A and LS2.B).</p> <p>Science & Engineering Practices: --Use models to describe phenomena; --Support an argument with evidence, data, or a model.</p> <p>Cross-cutting Concepts: --Energy can be transferred in various ways and between objects. Matter is transported into, out of, and within systems.</p>
5	Motion, Forces and Interactions	Students will differentiate between various types of forces. Students will investigate a variety of objects to observe that the force of gravity is constant on Earth and pulls things down towards its center. Students will also investigate a variety of ways to overcome gravity.	<p>5-PS2-1. Support an argument that the gravitational force exerted by Earth on objects is directed down (Incorporates DCI PS2.B);</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 (Incorporates DCI ETS1.A);</p> <p>3-5-ETS1-2. Generate and compare</p>

			<p>multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem (Incorporates DCI ETS1.B); 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 (Incorporates DCI ETS1.B and DCI ETS1.C)</p> <p>Science & Engineering Practices: --Support an argument with evidence, data, or a model. Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence, using fair tests in which variables are controlled and the number of trials considered; --Generate and compare multiple solutions to a problem based on how well they meet the criteria and constraints of the design problem.</p> <p>Cross-cutting Concepts: --Cause and effect relationships are routinely identified and used to explain change.</p>
5	Earth and Human Activity	Students research how science is related to various professions, ways to conserve energy and ways that communities work together to keep their environment clean. Students will identify ways that humans pollute the air, soil, and water on Earth and work in groups to think of ways to stop pollution. Students will also classify renewable and nonrenewable energy resources.	<p>5-ESS3-1. Obtain and combine information about ways individual communities use science ideas to protect the Earth’s resources and environment. (Incorporates DCI ESS3.C).</p> <p>Science & Engineering Practices: --Obtain and combine information from books and/or other reliable media to explain phenomena or solutions to a design problem.</p>
5	Earth’s Place in Space	Students will classify stars, patterns of	5-ESS1-1. Support an argument that

		<p>stars, and the effects of rotation and revolution. Students will identify the sun as the center of the solar system and compare and contrast the eight planets that orbit the sun. Students will identify the phases of the moon and determine which phase will appear at certain times of the month. Students will also create models, graph data, and trace shadows.</p>	<p>differences in the apparent brightness of the sun compared to other stars is due to their relative distances from Earth (Incorporates DCI ESS1.A); 5-ESS1-2. Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky (Incorporates DCI ESS1.B).</p> <p>Science & Engineering Practices: --Support an argument with evidence, data, or a model and represent data in graphical displays (bar graphs, pictographs and/or pie charts) to reveal patterns that indicate relationships.</p>
5	Earth's Systems	<p>Students will learn the difference between each of Earth's systems, and ways that each system interacts to help make Earth what it is today. Students will model layers of Earth, the water cycle, land forms, and more. Students will learn each system in isolation. After each system, students will learn how each system depends on or interacts with the previous systems.</p>	<p>5-ESS2-1. Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact (Incorporates DCI ESS2.A); 5-ESS2-2. Describe and graph the amounts and percentages of water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth (Incorporates DCI ESS2.C).</p> <p>Science & Engineering Practices: --Develop a model using an example to describe a scientific principle; --Describe and graph quantities such as area and volume to address scientific questions.</p>