



# Greenwich Public Schools Curriculum Overview

## Kindergarten: Science

### *Families as Partners in Learning*

In Kindergarten, instructional time is focused on properties and changes in matter, use observations of weather to identify patterns over time and to predict and respond to severe weather; develop a physical model or drawing to determine how the shape of an object helps it function to solve a given problem and compare the effectiveness of two objects designed to solve a problem.

All Kindergarten units of study are directly aligned with the approved Next Generation Science Standards

The GPS Science Program uses the practice of inquiry-based science instruction, applying science concepts to real-world scenarios. Students are required to communicate results and their process to teachers and peers, using a variety of methods to demonstrate their learning and construct viable arguments and critique the reasoning of others, engaging in evidence-based arguments.

Unit	Student Learning Expectations
<p><b>Unit 1: Properties of Matter</b></p> <p><b>Enduring Understandings:</b></p> <ul style="list-style-type: none"> <li>● Matter can be solid or liquid.</li> <li>● Different types of matter are better for different jobs.</li> <li>● Heating and cooling matter can cause changes.</li> <li>● Some changes in matter</li> </ul>	<p><b>Students will Do:</b></p> <ul style="list-style-type: none"> <li>● Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties. [Clarification Statement: Observations could include color, texture, hardness, and flexibility. Patterns could include the similar properties that different materials share.]</li> <li>● Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.</li> <li>● Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object. [Clarification Statement: Examples of pieces could include blocks, building bricks, or other assorted small objects.]</li> </ul>



<p>can be reversed and some can not.</p>	<ul style="list-style-type: none"> <li>Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot. [Clarification Statement: Examples of reversible changes could include materials such as water and butter at different temperatures. Examples of irreversible changes could include cooking an egg, freezing a plant leaf, and heating paper.]</li> </ul> <p><b>Science and Engineering Practices:</b></p> <ul style="list-style-type: none"> <li>Asking questions (for science) and defining problems (for engineering)</li> <li>Planning and carrying out investigations</li> <li>Analyzing and interpreting data</li> <li>Constructing explanations (for science) and designing solutions (for engineering)</li> <li>Engaging in argument from evidence</li> </ul> <p>Click <a href="#">Next Generation Science Standards</a> to learn more.</p>
<p><b>Unit 2: Science Launch</b></p> <p><b>Enduring Understandings:</b></p> <ul style="list-style-type: none"> <li>Students learn about the world around them through asking questions and making observations.</li> <li>Data analysis, interpretation and evaluation help students to apply science concepts in multiple contexts.</li> </ul>	<p><b>Students will Do:</b></p> <ul style="list-style-type: none"> <li>Students will make observations about the world around them.</li> <li>Students will use senses to collect data.</li> <li>Students will document their observations with accurate drawings and words (when appropriate).</li> <li>Students will organize their pages appropriately (Drawing a picture and writing a label next to the picture).</li> </ul>
<p><b>Unit 3: Weather</b></p> <p><b>Enduring Understandings:</b></p>	<p><b>Students will Do:</b></p> <ul style="list-style-type: none"> <li>Make observations to determine the effect of sunlight on Earth’s surface. [Clarification Statement: Examples of Earth’s surface could include sand, soil, rocks, and water]</li> </ul>



<ul style="list-style-type: none"> <li>• Weather is the combination of sunlight, wind, snow, or rain, and temperature in a particular region, at a particular time.</li> <li>• Sunlight warms Earth's surfaces.</li> </ul>	<ul style="list-style-type: none"> <li>• Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.</li> <li>• Use and share observations of local weather conditions to describe patterns over time. [Clarification Statement: Examples of qualitative observations could include descriptions of the weather (such as sunny, cloudy, rainy, and warm); examples of quantitative observations could include numbers of sunny, windy, and rainy days in a month. Examples of patterns could include that it is usually cooler in the morning than in the afternoon and the number of sunny days versus cloudy days in different months.]</li> <li>• Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather. [Clarification Statement: Emphasis is on local forms of severe weather.]</li> </ul> <p><b>Science and Engineering Practices:</b></p> <ul style="list-style-type: none"> <li>• Asking questions (for science) and defining problems (for engineering)</li> <li>• Developing and using models</li> <li>• Analyzing and interpreting data</li> <li>• Constructing explanations (for science) and designing solutions (for engineering)</li> </ul>
<p><b>Unit 4: Environmental Tools</b></p> <p><b>Enduring Understandings:</b></p> <ul style="list-style-type: none"> <li>• Scientists design tools to solve problems.</li> <li>• Scientists test their designs and compare them to others.</li> <li>• Scientists observe their designs to gather information.</li> </ul>	<p><b>Students will Do:</b></p> <ul style="list-style-type: none"> <li>• Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.</li> <li>• Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.</li> <li>• Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.</li> </ul> <p><b>Science and Engineering Practices:</b></p> <ul style="list-style-type: none"> <li>• Asking questions (for science) and defining problems (for engineering)</li> <li>• Planning and carrying out investigations</li> </ul>



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|  | <ul style="list-style-type: none"><li>• Constructing explanations (for science) and designing solutions (for engineering)</li><li>• Obtaining, evaluating, and communicating information</li></ul> |
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