

## Curriculum at a Glance



### Grade 6

#### Description:

The Science Department of the Darien Public Schools is dedicated to providing a program that offers students science instruction that begins with a real world phenomenon to promote inquiry, critical thinking, problem solving, and connections across science disciplines. Students develop greater capacity for connecting knowledge across, and between, the physical sciences, life sciences, earth and space sciences, and engineering design through "three-dimensional learning" which refers to the three pillars that support instruction. These three dimensions are: Science and Engineering Practices, Crosscutting Concepts, and Disciplinary Core Ideas.

Unit Name	Essential Skills and Content
<b>Structure and Function of Matter</b>	<ul style="list-style-type: none"><li>• Develop models to describe the atomic composition of simple molecules and extended structures.</li><li>• Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred.</li><li>• Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed.</li></ul>

	<ul style="list-style-type: none"> <li>● Gather and make sense of information to describe that synthetic materials come from natural resources and impact society.</li> </ul>
<b>Energy</b>	<ul style="list-style-type: none"> <li>● Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer.</li> <li>● Plan an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample.</li> <li>● 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 object.</li> </ul>
<b>Growth, Development and Reproduction of Organisms</b>	<ul style="list-style-type: none"> <li>● Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells .</li> <li>● Develop and use a model to describe the function of a cell as a whole and ways the parts of cells contribute to the function.</li> <li>● Use arguments supported by evidence for how the body is a system of interacting subsystems composed of groups of cells .</li> <li>● Use arguments 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.</li> <li>● Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.</li> <li>● Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.</li> <li>● Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.</li> </ul>
<b>Scale and History of the Earth</b>	<ul style="list-style-type: none"> <li>● Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.</li> <li>● Analyze and interpret data to determine scale properties of objects in the solar system.</li> </ul>

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|  | <ul style="list-style-type: none"><li>• Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to organize Earth's 4.6-billion-year-old history.</li></ul> |
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