

## NCPS Science Unit Map - Grade 7

### Parent Curriculum Guide

These scientific and engineering practices are developed in each unit throughout the year:

- Asking questions (for science) and defining problems (for engineering)
- Developing and using models
- Planning and carrying out investigations
- Analyzing and interpreting data
- Using mathematics and computational thinking
- Constructing explanations (for science) and designing solutions (for engineering)
- Engaging in argument from evidence
- Obtaining, evaluating, and communicating information

Science Topic	Student Learning Expectations
<b>Properties of Matter</b>	<p>Students will explore how atomic and molecular interactions explain the properties of matter that we see and feel.</p> <p><b>Through class discussion and explorations students will</b></p> <ul style="list-style-type: none"> <li>● apply understanding that pure substances have characteristic physical and chemical properties and are made from a single type of atom or molecule.</li> <li>● provide molecular level accounts to explain states of matters and changes between states.</li> <li>● develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved.</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> </ul>
<b>From Molecules to Organisms: Structures and Processes</b>	<p>Students will understand the role of cells in body systems and how those systems work to support the life functions of the organism.</p> <p><b>Through class discussion and explorations students will</b></p> <ul style="list-style-type: none"> <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 argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.</li> <li>● Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different</li> </ul>

	numbers and types of cells.
<b>Climate and Climate Change</b>	<p>Students will understand that we live on a planet with a dynamically changing climate and will explore ways that human activities impact Earth's other systems.</p> <p><b>Through class discussion and explorations students will</b></p> <ul style="list-style-type: none"><li>• Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process.\</li><li>• Collect data to provide evidence for how the motions and complex interactions of air masses result in changes in weather conditions.</li><li>• Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates.</li><li>• Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.</li></ul>