

Big Understandings Life Science Cluster (5 – 8)

- The growth and survival of organisms depend upon the physical and biological conditions of the environment.
- Body tissues and organs are made up of different kinds of cells.
- The human body and other organisms function as systems

<p><u>Content Standards</u> Students will understand:</p> <p>A. Classifying Life Forms Students will understand that there are similarities within the diversity of all living things</p>	<p>B. Ecology Students will understand how living things depend on one another and on non-living aspects of the environment</p>	<p>C. Cells Students will understand that cells are the basic units of life</p>
<p><u>Performance Indicators</u> Student will be able to:</p> <ol style="list-style-type: none"> 1. Compare systems of classifying organisms including systems used by scientists 2. Decipher the system for assigning a scientific name to every living thing 3. Describe some structural and behavioral adaptations that allow organisms to survive in a changing environment <p>A. Classifying Life Forms</p>	<p>Note: Bold indicators will be assessed</p> <ol style="list-style-type: none"> 1. Describe in general terms the chemical processes of photosynthesis and respiration 2. Analyze how the finite resources in an ecosystem limit the types and populations of organisms within it 3. Describe succession and other ways that ecosystems can change over time 4. Generate examples of the variety of ways that organisms interact 5. Describe various mechanisms found in the natural world for transporting living and non-living matter and the results of such movements <p>B. Ecology</p>	<ol style="list-style-type: none"> 1. Compare and contrast human organ systems with those of other species 2. Prepare and examine microscope slides of single-celled and multi-celled organisms 3. Describe the structure and function of major organs in human systems 4. Identify the causes and effects of diseases, explain their transmission, and identify prevention strategies 5. Describe how body systems work together <p>C. Cells</p>
<p><u>Knowledge / Skills</u></p>		
<p><u>Assessment</u></p>		
<p><u>Resources</u></p>		
<p><u>Instructional Strategies</u></p>		

Big Understandings Physical Science Cluster (5 – 8)

- Matter is made up of tiny particles called atoms.
- Atoms are in constant, random motion.
- When a substance goes through a chemical change, the atoms are rearranged and a different substance with new properties is produced.
- Energy cannot be created or destroyed, only changed from one form to another (Law of Conservation).
- Motion can be described mathematically.

<p>E. Structure of Matter Students will understand the structure of matter and the changes it can undergo</p>	<p>H. Energy Students will understand concepts of energy</p>	<p>I. Motion Students will understand the motion of objects and how forces can change that motion</p>
<p>1. Predict and test whether objects will float or sink based on a qualitative and quantitative understanding of the concepts of density and buoyancy</p> <p>2. Describe the evidence that matter consists of particles called atoms that are made up of certain smaller particle</p> <p>3. Use the periodic table to group elements based on their characteristics (MAP: Alien Periodic Table)</p> <p>4. Describe how a substance can combine with different substances in different ways depending on the conditions and the properties of each substance</p> <p>E. Structure of Matter</p> <p>5. Describe how the motion of the particles of matter determines the state of the matter and vice versa</p> <p>6. Explain how the relatively small number of naturally occurring elements can result in the large variety of substances found in the world</p> <p>7. Investigate the similarities and differences between elements, compounds, and mixtures</p>	<p>1. Analyze the benefits and drawbacks of energy conversions</p> <p>2. Demonstrate that energy cannot be created or destroyed but only changed from one form to another</p> <p>3. Compare and contrast the ways energy travels</p> <p>4. Describe the characteristics of static an current electricity</p> <p>5. Categorize energy sources as renewable or non-renewable and compare how these sources are used by humans</p> <p>6. Describe how energy put into or taken out of a system can cause</p> <p>H. Energy changes in the motion of particles in matter</p>	<p>1. Describe the motion of objects using knowledge of Newton’s Laws</p> <p>2. Use mathematics to describe the motion of objects</p> <p>3. Describe and quantify the ways machines can provide mechanical advantages in producing motion</p> <p>I. Motion</p>

8. Demonstrate the law of conservation of matter		
➤ Use and create a periodic table		
• MAP: Alien Periodic Table		
MAP: Alien Periodic Table		
<ul style="list-style-type: none"> • Journals • Observations • Constructed Response • Graphic Organizers 		