

Curriculum Maps – Science Grade 6

	Sept.	Oct.	Nov.	Dec.	Jan.
G R A D E 6	<p>Scientific Method</p> <ul style="list-style-type: none"> • Skills of inquiry, experimentation, design • Measuring • Metrics <p>Physical Science # 3</p> <ul style="list-style-type: none"> • Recognize that the measurement of volume and mass requires understanding of the sensitivity of measurement tools (e.g., rulers, graduated cylinders, balances) and knowledge and appropriate use of significant digits <p>How are weight and mass different?</p> <p>How can properties of matter be described in terms of weight, mass and density?</p> <p>Physical properties of Matter:</p> <ol style="list-style-type: none"> 1. Differentiate between weight and mass, recognizing that weight is the amount of gravitational pull on an object. 2. Differentiate between volume and mass. Define density. 3. Recognize 	<p>Properties of Matter</p> <ul style="list-style-type: none"> • Mass • Volume • Density <p>Physical Science # 1,2,3</p> <ul style="list-style-type: none"> • Differentiate between weight and mass, recognizing that weight is the amount of gravitational pull on an object. • Differentiate between volume and mass. Define density. • Explain the relationship among the energy provided by the sun, the global patterns of atmospheric movement, and the temperature differences among water, land, and atmosphere • How can we make reliable new discoveries about our world? • Why do we need to control an experiment? • What do you need to draw conclusions? • How are weight and mass different? • Properties of Matter: • 	<p>Properties of Matter</p> <ul style="list-style-type: none"> • Physical changes • Chemical reactions • Melting, boiling point <p>Physical Science #9, 10</p> <ul style="list-style-type: none"> • Recognize that a substance (element or compound) has a melting point and a boiling point, both of which are independent of the amount of the sample • Differentiate between physical changes & chemical changes. <p>How can properties of matter be described in terms of weight, mass, and density?</p> <p>Recognize that the measurement of volume and mass requires understanding of the sensitivity of measurement</p>	<p>Properties of Matter</p> <ul style="list-style-type: none"> • Mixtures • Pure substances • Phase changes <p>Physical Science # 8</p> <ul style="list-style-type: none"> • Differentiate between mixtures and pure substances <p>How do organisms interact with their ecosystems in order to survive?</p> <p>What are the various ways that organisms transfer energy in the food web?</p> <p>Life Science Living Things and their environment:</p> <p>Give examples of ways in which organisms interact and have different functions within an ecosystem that enable the ecosystem to survive.</p> <p>Energy and Living things:</p> <p>Explain the roles and relationships among producers, consumers, and decomposers in the process of energy transfer in a food web.</p> <ul style="list-style-type: none"> • 	<p>Energy</p> <ul style="list-style-type: none"> • Potential energy • Kinetic energy • Forms of energy <p>Physical Science # 13</p> <ul style="list-style-type: none"> • Differentiate between potential and kinetic energy. Identify situations where kinetic energy is transformed into potential energy and vice versa. <p>Knowing that a substance has a melting point and a boiling point, how does the amount of matter have an affect on these temperatures?</p> <p>How would you recognize examples of physical and chemical changes?</p> <p>How are potential and kinetic energy related?</p> <ul style="list-style-type: none"> • Recognize that a substance (element or compound) has a melting point and a boiling point, both of which are independent of the amount of the sample • Differentiate between physical and chemical changes. • Forms of Energy: •

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	Feb.	Mar.	Apr.	May	Jun.
G R A D E 6	<p>Heat Energy</p> <ul style="list-style-type: none"> • Thermal energy • Expansion • Contraction • Equilibrium <p>Physical Science # 14-16</p> <ul style="list-style-type: none"> • Recognize that heat is a form of energy and that temperature change results from adding or taking away heat from a system • Explain the effect of heat on particle motion through a description of what happens to particles during a change in phase • Give examples of how heat moves in predictable ways, moving from warmer objects to cooler ones until they reach equilibrium <p>Recognizing that heat is a form of energy how would changes in heat affect the temperature? How does heat energy affect the motion of molecules, especially during a change of phase? How does heat travel in order to reach equilibrium? Heat Energy: Recognize that heat is a form of energy and that temperature change results from adding or taking away heat from a system</p> <ul style="list-style-type: none"> • 	<p>Heat Energy Transfer</p> <ul style="list-style-type: none"> • Conduction • Convection • Radiation • Water cycle <p>Earth Science # 3, 4</p> <ul style="list-style-type: none"> • Differentiate among radiation, conduction, and convection, the three mechanisms by which heat is transferred through the earth's system. • Explain the relationship among the energy provided by the sun, the global patterns of atmospheric movement, and the temperature differences among water, land, and atmosphere • What are the different ways that heat can be transferred in our daily life? • How does the energy from the sun affect different aspects of the earth? • Earth Science Heat Transfer in the Earth's System: 	<p>Environmental Science</p> <ul style="list-style-type: none"> • Ecosystems • Photosynthesis <p>Life Science # 13, 16</p> <p>Give examples of ways in which organisms interact & have different functions within an ecosystem that enables the ecosystem to survive.</p> <ul style="list-style-type: none"> • How does decomposition affect the ecosystem? • What is the process of photosynthesis and how is energy used in that process? • Explain how dead plants and animals are broken down by other living organisms and how this process contributes to the system as a whole. • Recognize that producers (plants that contain chlorophyll) use the energy from sunlight to make sugars from carbon dioxide and water through a process called photosynthesis. This food can be used immediately, stored for later use, or used by other organisms. 	<p>Environmental Science</p> <ul style="list-style-type: none"> • Plants • Animals • Fungi • Protists <p>Life Science # 14, 15</p> <p>Explain the roles and relationships among producers, consumers, and decomposers in the process of energy transfer in a food web. Explain how dead plants and animals are broken down by other living organisms and how this process contributes to the system as a whole.</p> <ul style="list-style-type: none"> • How has the ecosystem changed over time; especially due to catastrophic events? • Changes in Ecosystems over time: • Identify ways in which ecosystems have changed throughout geologic time 	<p>Environmental Science</p> <ul style="list-style-type: none"> • Migration • Hibernation • Extinction • Adaptation <p>Life Science #17</p> <p>Identify ways in which ecosystems have changed throughout geologic time in response to physical conditions, interactions among organisms, and the actions of humans. Describe how changes may be catastrophes such as volcanic eruptions or ice storms.</p>