

# 6th Grade Science Curriculum Map

Month	CCA	I Can	DOK	Lit Standards
August and September  Structure & Transformation of matter  <u><b>Critical Vocabulary:</b></u>  Property, Characteristic Property, solubility, conductivity, density, mixture, homogeneous mixture, heterogeneous mixture, physical change, chemical change, open system, closed system, solution, matter, mass, and volume.	<p><b>SC-M6 1.1.1</b>  <b>Students will explain how or why mixtures can be separated using physical properties.</b></p> <p><b>A mixture of substances often can be separated into the original substances by using one or more of its characteristic physical properties.</b>            DOK 2</p> <p><b>SC-06-1.1.2</b>  <b>Students will identify and describe evidence of chemical and physical changes in matter.</b></p> <p><b>In chemical reactions, the total mass is conserved. Substances are often classified into groups if they react in similar ways. The patterns that allow classification can be used to infer or understand real life applications for those substances.</b>            DOK 2</p> <p><i>SC-06-4.6.3</i>  <i>Students will understand that, on its own, heat travels only from higher temperature object/region to lower temperature object or region. Heat will continue to flow in this manner</i></p>	<p>1. I can explain why/how mixtures can be separated using physical properties.</p> <p>2. I can identify/describe evidence of chemical and physical changes in matter.</p> <p>3. I can identify/describe evidence of chemical and physical properties in matter.</p> <p>4. I can identify/describe that the total mass is conserved.</p> <p>5. I can analyze that heat travels only from higher temperature to a lower temperature.</p>	<p>2</p> <p>2</p>	<p>RD.3 Follow precisely a multi-step procedure when carrying out experiments, taking measurements, or performing technical tasks.</p> <p>RD.4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6 – 8 texts and topics.</p> <p>RD.7 Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually</p>

	<p><i>until the objects reach the same temperature. For example, a cup of hot water will continue to cool down until it comes to the same temperature as the surrounding area. Usually when heat is transferred to or from an object, the temperature changes. The temperature increases if heat is added and the temperature decreases if the heat is removed.</i></p>			(e.g., in a flowchart, diagram, model, graph, or table.)
<p>October and November</p> <p>Motion and Forces</p> <p><b><u>Critical Vocabulary:</u></b>  <b>Position, One-dimensional motion, Force, Balanced force, Unbalanced force, Friction, Motion, Speed, Reference point, Speeding up, Slowing down, Steady speed, steep, interaction.</b></p>	<p><b>SC-06-1.2.1</b>  <b>Students will describe friction and make inferences about its effects on the motion of an object.</b></p> <p><b>When an unbalanced force (friction) acts on an object, the change in speed or direction depends on the size and direction of the force.</b>  <b>DOK 3</b></p>	<ol style="list-style-type: none"> <li>1. I can describe friction.</li> <li>2. I can make inferences about its effect on motion of an object.</li> <li>3. I can analyze unbalanced/balanced forces that act on an object.</li> </ol>	3	<p>RD.3 Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.</p> <p>RD.4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6 – 8 texts and topics.</p>

				RD.7 Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table.)
December  Energy Transformations  <u>Critical Vocabulary</u> Seasons Temperature Heat Photosynthesis Heat Transfer Convection Conduction Radiation Rays Energy	<b>SC-06-4.6.1</b> <b>Students will describe or explain the cause and effect relationships between oceans and climate.</b>  <b>Oceans have a major effect on climate, because water in the oceans holds a large amount of heat.</b> DOK 2  <b>SC-06-4.6.2</b> <b>Students will describe:</b> <ul style="list-style-type: none"> <li>the effect of the Sun's energy on the Earth system;</li> <li>the connection/relationship between the Sun's energy and seasons.</li> </ul> <b>The Sun is the major source of</b>	1. I can describe the effect of the Sun's energy on Earth.(This means I know that the sun plays a role in the water cycle, winds, and ocean currents).  2. I can explain how and why seasons occur on Earth.(This means I can describe the relationship between the sun's energy and seasons).	2          3	RD.1 Cite specific textual evidence to support analysis of science and technical texts.       RD.9 Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.

	<p>energy for Earth. The water cycle, winds, ocean currents and growth of plants are affected by the Sun's energy. Seasons result from variations in the amount of the Sun's energy hitting Earth's surface. <b>DOK 3</b></p> <p><b><i>SC-06-4.6.3</i></b>  <b>Students will understand that, on its own, heat travels only from higher temperature object/region to lower temperature object or region. Heat will continue to flow in this manner until the objects reach the same temperature. For example, a cup of hot water will continue to cool down until it comes to the same temperature as the surrounding area. Usually when heat is transferred to or from an object, the temperature changes. The temperature increases if heat is added and the temperature decreases if the heat is removed.</b></p>	<p>3. I can explain the cause and effect relationship between the oceans and climate</p> <p>4. I can describe the patterns that result from heat being held in the oceans.</p> <p>5. I can describe photosynthesis role in energy storage within plants.</p> <p>6. I can model and analyze how heat is transferred from areas of higher temperatures to areas of lower temperature.</p> <p>7. I can analyze data to measure the effect of the sun's energy on the Earth; in terms of temperature, seasons, and plant life.</p>		
--	--	--	--	--

January	<b>SC-06-2.3.2</b> <b>Students will explain cause and effect relationships in the Rock cycle.</b>	<b>SC-06-2.3.2</b> 1.) I can model the steps/phases of the rock cycle 2.) I can explain the cause and effect relationship in the Rock Cycle.	2	RD.1 Cite specific textual evidence to support analysis of science and technical texts.
Rock Cycle/Constructive/Destructive Forces	<b>Materials found in the lithosphere and mantle are changed in a continuous process called the rock cycle, which can be investigated using a variety of models. Cause and effect relationships should be explored in order to draw conclusions and make evidence-based predictions of the continually changing materials.</b> <b>DOK 2</b>	<ul style="list-style-type: none"> <li>I can explain the cause and effect relationship in the Rock Cycle. (For today this means that I can identify sedimentary rocks as well as describe how they form)</li> <li>I can explain the cause and effect relationship in the Rock Cycle. (For today this means that I can identify igneous rocks as well as describe how they form)</li> <li>I can explain the cause and effect relationship in the Rock Cycle. (For today this means that I can identify metamorphic rocks</li> </ul>	2	RD.6 Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text.
<b><u>Critical Vocabulary</u></b> Rock Cycle Sedimentary Igneous Metamorphic Lithosphere Constructive Forces Deconstructive Forces Plate Tectonics Weathering Erosion Deformation Faulting Deposition	<b>SC-06-2.3.3 Students will compare constructive and destructive forces on Earth in order to make predictions about the nature of landforms.</b>  <b>Landforms are a result of a combination of constructive and destructive forces. Collection and analysis of data indicates that constructive forces include crustal deformation, faulting, volcanic eruption and deposition of sediment, while destructive forces include weathering and erosion.</b> <b>DOK 2</b>			

		<p>as well as describe how they form)</p> <p><b>SC-06-2.3.3</b></p> <p>3.) I can explain the layers of the earth.</p> <p>4.) I can analyze the 3 types of faults effects on the surface of the Earth.</p> <p>5.) I can model and explain plate boundaries.</p> <p>6.) I can compare constructive and destructive forces in earthquakes and volcanoes as well as in weathering and erosion.</p> <p>7.) I can make predictions about the nature of landforms. (This means I can tell how landforms were made along fault lines and on volcanic mountains).</p>		
--	--	--	--	--

<p>February</p> <p>Adaptation/Behavior/Biological Change</p> <p><b><u>Critical Vocabulary</u></b></p> <p>Predator</p> <p>Prey</p> <p>Limiting Factor</p> <p>Adaptation</p> <p>Mutation</p> <p>Camouflage</p> <p>Mimicry</p> <p>Instinct</p> <p>Behavior</p> <p>Learned behavior</p> <p>Protective Coloring</p> <p>Protective Resemblance</p> <p>Natural Selection</p> <p>Selective Breeding</p>	<p><b>SC-06-3.5.1</b>  <b>Students will explain that biological change over time accounts for the diversity of species developed through gradual processes over many generations.</b>  <b>Biological adaptations include changes in structures, behaviors, or physiology that enhance survival and reproductive success in a particular environment.</b>  <b>DOK 2</b></p> <p><b>SC-06-3.5.2</b>  <i>Students will understand that regulation of an organism's internal environment involves sensing the internal environment and changing physiological activities to keep conditions within the range required to survive. Maintaining a stable internal environment is essential for an organism's survival.</i></p> <p><b>SC-06-3.4.2</b>  <b>Students will make inferences about the factors influencing behavior based on data/evidence of various organism's behaviors.</b>  <b>Behavior is one kind of response an organism may make to an internal or environmental stimulus.</b>  <b>Observations of organisms, data</b></p>	<ol style="list-style-type: none"> <li>1. I can explain how mutations and adaptations and occur.</li> <li>2. I can justify the need for biological changes over time.</li> <li>3. I can classify biological changes of organisms as structural, behavioral, or physiological.</li> <li>4. I can explain how species became diverse.</li> <li>5. I can evaluate the effect of biological adaptations on survival and reproductive success.</li> <li>6. I can identify and explain limiting factors.</li> </ol>	<p>2</p> <p>2</p>	<p>RD.1 Cite specific textual evidence to support analysis of science and technical texts.</p> <p>RD.5 Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to the understanding of the topic.</p> <p>RD.8 Distinguish among facts, reasoned judgment based on research findings, and speculation in a text.</p>
---	--	---	-------------------	---





	<p>organisms. DOK 2</p> <p><b>SC-06-4.7.1</b> Students will describe the consequences of change in one or more abiotic factors on a population within an ecosystem. The number of organisms an ecosystem can support depends on the resources available and abiotic factors (e.g., quantity of light and water, range of temperatures, soil composition). DOK 2</p>	<p>an ecosystem.</p> <p>3.) I can explain population.</p> <p>4.) I can describe an abiotic factor that can cause change in an ecosystem.</p> <p>5.) I can identify a biotic factor that can cause change in an ecosystem. This means I can describe the consequences of change.</p> <p>6.) I can describe and distinguish cycles in nature.</p>		
<p>April</p> <p>Cells</p> <p><b><u>Critical Vocabulary</u></b> Cell, Tissue, Organ, Organ System, Organism, Multicellular, Unicellular, Nucleus, Vacuole, Chromosomes, Cell Wall, Cell Membrane, Chloroplast, Cytoplasm, Mitochondrion</p>	<p><b>SC-06-3.4.1</b> Students will describe the relationship between cells, tissues and organs in order to explain their function in multicellular organisms.</p> <p>Specialized cells perform specialized functions in multicellular organisms. Groups of specialized cells cooperate to form tissues. Different tissues are, in turn, grouped together to form larger functional units called organs. Examination of cells, tissues and organs reveals that each type has a</p>	<p>1. I can describe cells, tissue, and organs</p> <p>2. I can explain the function of cells, tissues, and organs.</p> <p>3. I can analyze the relationship between cells, tissues, and organs in terms of multicellular organisms.</p>	3	<p>RD.1 Cite specific textual evidence to support analysis of science and technical texts.</p> <p>RD.2 Determine the central ideas or conclusions of a text: provide an accurate summary of the text distinct from prior knowledge or</p>

	<b>distinct structure and set of functions that serve the organism.</b> DOK 3			opinions.
May  Earth-Sun- Moon System  <u><b>Critical Vocabulary</b></u> Moon Phases Eclipse Seasons Solar System Solstice Equinox Tides	<b>SC-06-2.3.1</b> <b>Students will explain and predict phenomena (e.g., day, year, moon phases, eclipses) based on models/representations or data related to the motion of objects in the solar system (e.g., earth, sun, moon). Observations and investigations of patterns indicate that most objects in the solar system are in regular and predictable motion. Evaluation of this data explains such phenomena as the day, the year, phases of the moon and eclipses.</b> <b>DOK 3</b>	1.) I can record and analyze observations about the movement of objects in the solar system. (This means performing investigations about the day, the year, phases of the moon, and eclipses). 2.) I can explain and predict how a day occurs. 3.) I can explain and predict how a year occurs. 4.) I can explain and predict how moon phases occur. 5.) I can explain and predict how eclipses occur.	3	RD.1 Cite specific textual evidence to support analysis of science and technical texts.

## WRITING STANDARD – 2

Write informative text, including the narration of scientific procedures/experiments.

WRITING STANDARD – 4

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

WRITING STANDARD – 9

Draw evidence from informational texts to support analysis, reflection, and research.