

Sixth Grade Science Curriculum Map 2022

<b>Pacing Guide</b>	<b>Standard Code &amp; Indicator</b>	<b>Sample Learning Activities</b>	<b>Assessments</b>	<b>Additional Standards</b>
---------------------	--------------------------------------	-----------------------------------	--------------------	-----------------------------

<p><b>August-October</b></p> <p>Unit 1: Nature of Science and Scientific Inquiry</p> <p>Unit 2: Weather</p>	<p>MS-ESS2-4 Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity.</p> <p>MS-ESS2-5 Collect data to provide evidence for how the motions and complex interactions of air masses result in changes in weather conditions.</p>	<p>Identify Safety Rules &amp; Symbols Sign Safety Contract</p> <p>Science Practices &amp; The Nature of Science</p> <p>Describe the movement of water through the water cycle.</p> <p>Explain how water changes form in the water cycle.</p> <p>Describe the layers of the atmosphere.</p> <p>Identify and describe the factors that cause weather.</p> <p>Create a map showing the location of air masses in the US.</p> <p>Investigate air pressure.</p> <p>Relate changes in air pressure to changing weather conditions. Analyze a weather map.</p> <p>Collect and graph weather data.</p> <p><b>Instructional Resources:</b> <i>TCI NGSS Integrated Science</i></p> <p><b>Student Technology:</b> Chromebooks Google Classroom</p>	<p><b>Formative Assessments:</b> Quizzes Homework/Classwork Teacher Observation Student Participation Web Based Game Exit tickets</p> <p><b>Summative Assessments:</b> Completed labs Unit Test or Projects</p> <p><b>Benchmark Assessment:</b> BOY Benchmark</p> <p><a href="#">Accommodations and Modifications</a></p>	<p><b>Interdisciplinary Standard: W 5.9</b> Students use information from their textbook or other source, ie video, investigation, to support a claim about a scientific concept.</p> <p><b>S.L.6.1</b> Students will participate in discussions on weather and climate using specific vocabulary.</p> <p><b>Technology Standards:</b> 8.2.8.ED.3: Test, analyze, and refine models.</p> <p>8.1.8.DA.1: Organize and transform data collected using computational tools to make it usable for a specific purpose.</p>
---	---	--	---	---

<p><b>November-December</b> Unit 3: Climate</p>	<p>S-ESS2-6 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.</p>	<p>Explain the difference between weather and climate</p> <p>Create a world climate map</p>	<p><b>Formative Assessments:</b> Quizzes Homework/Classwork Teacher Observation Student Participation Web Based Game Exit tickets</p>	<p><b>Interdisciplinary Standard:</b> MP.4 Model with mathematics.</p>
<p><b>January-February</b> Unit 4: Energy</p>	<p>MS-ESS3-3 Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.</p> <p>MS-ESS3-5. Ask questions to clarify evidence of the factors that have caused climate change over the past century.</p> <p>MS-PS3-3 Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer.</p> <p>MS-PS3-4 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.</p>	<p>Identify and describe factors that affect climate (latitude, altitude, atmospheric circulation, continental position)</p> <p>Create a model of the Coriolis Effect</p> <p>Describe how the ocean affects climate</p> <p>Identify human activities and natural processes that have caused a rise in global temperatures over the last century</p> <p>Distinguish heat from temperature</p> <p>Identify different types of heat transfer (conduction, convection, radiation)</p> <p>Define thermal energy</p> <p>Examples of experiments for PS 3-4 may include:</p> <ul style="list-style-type: none"> <li>● Test the insulating properties of different materials</li> <li>● Compare final water</li> </ul>	<p><b>Summative Assessments:</b> Completed labs Unit Test or Project</p> <p><a href="#">Accommodations and Modifications</a></p>	<p><b>W 5.9</b> Students use information from their textbook or other source, ie video, investigation, to support a claim about a scientific concept.</p> <p><b>Technology Standard:</b> 8.1.8.DA.5: Test, analyze, and refine models.</p>

<p><b>February-March</b></p> <p>Unit 5 Body System</p> <p>Unit 6: Structure, Function and Information Processing</p>	<p>MS-LS1-3 Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.</p> <p>MS-LS1-8 Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories. (Describe how sensory information is processed in the brain, resulting in immediate behaviors or memories.)</p> <p>MS-ETS1-1 Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.</p> <p><b>MS-LS1-1</b> Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.</p> <p><b>MS-LS1-2</b> Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function</p>	<p>Identify the levels of organization in the human body</p> <p>Explain differences among tissues, organs, and organ systems.</p> <p>Identify and describe interactions between organ systems and how those interactions are important to survival and growth.</p> <p>Discuss how specialized organs and structures interact to make up organ systems that perform specific, complex life functions</p> <p>Create a model of the human body</p> <p>Make a model of the digestive system</p> <p>Discuss how organ systems (subsystems) work together to carry out necessary functions for survival and growth.</p> <p>Identify problems caused by organ failure and how those problems impact the functioning and interaction of organ systems.</p> <p>MS LS1-8 Explore and identify the functions of the various parts of the brain.</p>	<p><b>Formative Assessments:</b> Quizzes Homework/Classwork Teacher Observation Student Participation Web Based Game Exit tickets</p> <p><b>Summative Assessments:</b> Completed labs Projects: Cell model; Cell Analogy Project</p> <p><a href="#"><u>Accommodations and Modifications</u></a></p>	<p><b>Interdisciplinary Standard:</b> <b>W 5.9</b> Students use information from their textbook or other source, ie video, investigation, to support a claim about a scientific concept.</p> <p><b>RI 7.1</b> Students will read a variety of non fiction texts to gather specific evidence and make scientific inferences.</p> <p><b>Technology Standard:</b> 8.1.8.DA.5: Test, analyze, and refine models.</p> <p>8.1.8.DA.1: Organize and transform data collected using computational tools to make it usable for a specific purpose.</p>
--	--	--	---	---

<p><b>March/April</b></p> <p>Unit 7: Traits</p>	<p>MS-LS3-2 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.</p>	<p>Identify personal traits</p> <p>Compare and contrast sexual and asexual reproduction</p> <p>Define trait, allele, dominant trait, recessive trait</p>	<p><b>Formative Assessments:</b></p> <p>Quizzes Homework/Classwork Teacher Observation Student Participation Web Based Game Exit tickets</p>	<p><b>Interdisciplinary Standard:</b></p> <p><b>W 5.9</b> Students use information from a variety of resources to support a claim about a scientific concept.</p>
<p><b>May/June</b></p> <p>Unit 8: Genetics</p>	<p>MS-ETS1-4 Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.</p>	<p>Identify and describe the types of asexual reproduction</p>	<p><b>Summative Assessments:</b></p> <p>Completed labs Unit Test or Project</p>	<p><b>RI 7.1</b></p> <p>Students will read a variety of non fiction text to gather specific evidence and make scientific inferences.</p>
	<p>MS-LS1-4 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.</p>	<p>Create a Punnett square to describe the cause and effect relationship of gene transmission from parent(s) to offspring and resulting genetic variation.</p>	<p><b>Benchmark Assessment:</b></p> <p>EOY Benchmark</p>	<p><b>Technology Standard:</b></p> <p>8.1.8.DA.1: Organize and transform data collected using computational tools to make it usable for a specific purpose.</p>
	<p>MS-LS1-5 Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.</p>	<p>Investigate the role chromosomes play in inheritance</p>	<p><a href="#"><u>Accommodations and Modifications</u></a></p>	<p>8.1.8.DA.5: Test, analyze, and refine models.</p>
	<p>MS-ETS1-3 Analyze data from tests to determine similarities and differences among several design solutions to identify the</p>	<p>Classify traits as environmental or inherited</p>		
		<p>Identify behaviors in animals that affect the probability of reproduction</p>		
		<p>Identify animal behaviors that affect the probability of plant reproduction</p>		
		<p>Claim, Evidence, Reasoning</p>		
		<p>Identify the reproductive parts of a flower</p>		

**Alternate Assessments:** Completed Labs and presentations, Activities/Worksheets

**21st Century Standards:** 9.2.8.B.3 and 9.1.8.A.3

**21st Century Skills:** Critical Thinking, Creativity & Information literacy

**Career Ready Practices:** CRP2, CRP 4, CRP 5, CRP 6, CRP 7 & CRP 8