

<b>Select a Course:</b>	Science Grade 5
<b>Teacher:</b>	CORE Science Grade 5
<b>Course:</b>	Science Grade 5
<b>Year:</b>	2016-17
<b>Months:</b>	- All -

August	<a href="#">Enduring Understandings</a> ✕ <a href="#">Essential Questions</a> ✕ <a href="#">Standards</a> ✕ <a href="#">Knowledge &amp; Skills</a> ✕ <a href="#">Academic Language</a> ✕
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**Grade 5 Science Scientific Method (Engineering Design)**

















September	<a href="#">Enduring Understandings</a> ✕ <a href="#">Essential Questions</a> ✕ <a href="#">Standards</a> ✕ <a href="#">Knowledge &amp; Skills</a> ✕ <a href="#">Academic Language</a> ✕
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September	<p><a href="#">Science and Technology play important roles in one's daily life</a></p> <p><a href="#">The contribution of local and foreign scientists to science and technology can nullify superstitious beliefs and practices</a></p> <p><a href="#">Many scientific discoveries have helped lighten the daily tasks of people</a></p> <p><a href="#">The application of the scientific method in conducting simple investigations is needed in solving problems</a></p> <p><a href="#">Scientists used different methods of studying/solving problems in science</a></p> <p><a href="#">The proper use of units of measurement and of the different scientific equipment in conducting investigations results in accurate and precise information</a></p>	<p><a href="#">How does science and technology affect one's daily activities?</a></p> <p><a href="#">How can I apply basic science principles and values in daily decision making?</a></p> <p><a href="#">What particular attitudes did scientists show which enabled them to discover things to improve the quality of life?</a></p> <p><a href="#">Why is there a need to follow the steps of the scientific method with the proper use of equipment in solving problems?</a></p> <p><a href="#">What scientific values do I still need to acquire to further equip me with the skills to solve real-life problems?</a></p> <p><a href="#">How is the scientific method used and applied in real-life problems?</a></p>	<p>3-5-ETS1.1 - Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.</p> <p>3-5-ETS1.2 - Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.</p> <p>3-5-ETS1.3 - Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.</p> <p>IL.SEL.3-5.2.C.2b - Analyze ways to work effectively in groups.</p> <p>G3-5:3.8 - Create projects that use text and various forms of graphics, audio, and video (with proper citations) to communicate ideas.</p>	<p><a href="#">Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.</a></p> <p><a href="#">Design an experient using the scientific method</a></p> <p><a href="#">Conduct research on a topic to in order to make a reasonable hypothesis</a></p>	<p><a href="#">Tier 2 Vocabulary: data experiment procedure</a></p> <p><a href="#">Tier 3 Vocabulary: hypothesis control variable</a></p>
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October	Enduring Understandings ✕	Essential Questions ✕	Standards	Knowledge & Skills ✕	Academic Language ✕
November	<b>🏠 Grade 5 Science Matter and Its Interactions</b>				
	Enduring Understandings ✕	Essential Questions ✕	Standards	Knowledge & Skills ✕	Academic Language ✕
	<p>🏠 Matter is made of particles too small to be seen.</p> <p>🏠 The molecular arrangement influences whether matter is considered a solid, liquid, and gas.</p> <p>🏠 Matter can change form.</p> <p>🏠 When matter is changed, weight is conserved (law of conservation).</p> <p>🏠 Data is collected through quantitative and qualitative observations in matter.</p>	<p>🏠 How does energy influence molecular arrangements?</p> <p>🏠 What circumstances create physical and chemical changes?</p> <p>🏠 How is matter conserved?</p> <p>🏠 How do molecules determine matter's properties?</p>	<p>5-PS1.1 - Develop a model to describe that matter is made of particles too small to be seen.</p> <p>5-PS1.2 - Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved.</p> <p>5-PS1.3 - Make observations and measurements to identify materials based on their properties.</p> <p>5-PS1.4 - Conduct an investigation to determine whether the mixing of two or more substances results in new substances.</p> <p>IL.SEL.3-5.2.A.2a - Identify verbal, physical, and situational cues that indicate how others may feel.</p> <p>IL.SEL.3-5.2.A.2b - Describe the expressed feelings and perspectives of others.</p> <p>IL.SEL.3-5.2.C.2a - Describe approaches for making and keeping friends.</p> <p>IL.SEL.3-5.2.C.2b - Analyze ways to work effectively in groups.</p>	<p>🏠 Understand that matter is made of microscopic particles.</p> <p>🏠 Observe and graph changes in states of matter.</p> <p>🏠 Identify properties of matter</p> <p>🏠 Conduct experiments and record physical and chemical changes.</p>	<p>🏠 TIER 2 Vocabulary:</p> <p>evidence data mass/weight volume particles property substances conserved</p> <p>🏠 TIER 3 Vocabulary:</p> <p>matter qualitative quantitative solids, liquids, gas physical and chemical changes law of conservation of matter dissolving</p>
			<p>RI.5.7 - Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently.</p>		
December	Enduring Understandings ✕	Essential Questions ✕	Standards	Knowledge & Skills ✕	Academic Language ✕
January	Enduring Understandings ✕	Essential Questions ✕	Standards	Knowledge & Skills ✕	Academic Language ✕
	<p>🏠 <b>Grade 5 Science Ecosystems</b> This unit is a study of ecosystems on Earth. Students will explore how life on Earth is diverse and interrelated. Living things interact with each other and with their physical environment. The sun is the source of energy of all living systems. The two major parts of the unit are the investigation on how energy flows through</p>				

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an ecosystem and understanding how ecosystems change naturally over time. Students will also study how living and non-living things depend on each other for survival in an ecosystem with an emphasis on how humans impact ecosystems

Enduring Understandings	Essential Questions	Standards	Knowledge & Skills	Academic Language
<ul style="list-style-type: none"> <li> All organisms require energy to survive, and different organisms (producers, consumers, herbivores, carnivores, omnivores, decomposers) have different methods for obtaining energy</li> <li> Organisms depend on their ability to adapt in order to survive</li> <li> Organisms and their environments are interconnected</li> <li> Changes in one part of a system will affect other parts of the system</li> <li> Matter needed to sustain life is continually recycled among and between organisms and the environment</li> <li> Humans can alter the living and non-living factors within an ecosystem, thereby creating changes to the overall system</li> <li> The life processes of organisms are affected by their interactions with each other and their environments and may be altered by human manipulation</li> </ul>	<ul style="list-style-type: none"> <li> How is energy passed through an ecosystem?</li> <li> How do ecosystems change over time?</li> <li> How do people affect ecosystems?</li> <li> How do plants sustain and provide food as producers in the ecosystem?</li> <li> How do organisms compete and survive in an ecosystem?</li> </ul>	<p>5-LS1.1 - Support an argument that plants get the materials they need for growth chiefly from air and water.</p> <p>5-LS2.1 - Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.</p> <p>5-PS3.1 - Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun.</p> <p>IL.SEL.3-5.2.A.2a - Identify verbal, physical, and situational cues that indicate how others may feel.</p> <p>IL.SEL.3-5.2.A.2b - Describe the expressed feelings and perspectives of others.</p> <p>IL.SEL.3-5.2.C.2b - Analyze ways to work effectively in groups.</p>	<ul style="list-style-type: none"> <li> Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun.</li> <li> Support an argument that plants get the materials they need for growth chiefly from air and water.</li> <li> Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.</li> </ul>	<ul style="list-style-type: none"> <li> Tier 2 Vocabulary: energy plants environment living non-living</li> <li> Tier 3 Vocabulary: ecosystem producer consumer decomposer photosynthesis decomposition food webs</li> </ul>
		<p>RI.5.1 - Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.</p> <p>RI.5.7 - Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently.</p> <p>RI.5.9 - Integrate information from several texts on the same topic in order</p>		

			<p>to write or speak about the subject knowledgeably.</p> <p>SL.5.5 - Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes.</p> <p>W.5.1 - Write opinion pieces on topics or texts, supporting a point of view with reasons and information.</p>		
March	<p><b>🏠 Human Impacts and Earth Systems</b> Human Impacts Earth Systems Water</p> <p>3-4 weeks</p>				
	<p><b>Enduring Understandings</b> ✕</p> <p>🏠 Water distribution on earth is uneven among sources.</p> <p>🏠 Humans impact the earth and environment in both positive and negative ways.</p> <p>🏠 Hydrosphere, geosphere, atmosphere and biosphere interact in multiple ways to influence the earth and its environment.</p>	<p><b>Essential Questions</b> ✕</p> <p>🏠 How does water distribution on earth affect our access to water availability?</p> <p>🏠 How do the systems interact in multiple ways to affect earth's surface materials and processes?</p> <p>🏠 How do human activities in agriculture, industry, and every day life have major effects on our earth?</p> <p>🏠 How are humans doing things to protect earth's resources and environment?</p>	<p><b>Standards</b> ✕</p> <p>5-ESS2.1 - Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.</p> <p>5-ESS2.2 - Describe and graph the amounts and percentages of water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.</p> <p>5-ESS3.1 - Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.</p>	<p><b>Knowledge &amp; Skills</b> ✕</p>	<p><b>Academic Language</b> ✕</p> <p>🏠 Biosphere Hydrosphere Geosphere Atmosphere Acquifer Disillation Water Cycle Water pollution River Lake Ocean Glaciers Pollutants</p> <p>🏠 Global warming Green house effect Solar energy Wind power Conservation Hydro power Renewable resources Non-Renewable Resources Fossil fuels</p>
April	<p><b>Enduring Understandings</b> ✕</p>	<p><b>Essential Questions</b> ✕</p>	<p><b>Standards</b> ✕</p>	<p><b>Knowledge &amp; Skills</b> ✕</p>	<p><b>Academic Language</b> ✕</p>
May	<p><b>🏠 Grade 5 Science Space Systems</b></p>				
	<p><b>Enduring Understandings</b> ✕</p> <p>🏠 The gravitational force of Earth acting on an object near Earth's surface pulls that object toward the planet's center.</p>	<p><b>Essential Questions</b> ✕</p> <p>🏠 How do components of the solar system move and interact?</p>	<p><b>Standards</b> ✕</p> <p>5-PS2.1 - Support an argument that the gravitational force exerted by Earth on objects is directed down.</p> <p>5-ESS1.1 - Support an argument that differences in the apparent brightness of the sun compared to other stars is due to</p>	<p><b>Knowledge &amp; Skills</b> ✕</p> <p>🏠 Explain with evidence the theory behind gravitational force</p> <p>🏠 Compare the sun</p>	<p><b>Academic Language</b> ✕</p> <p>🏠 TIER 2 Vocabulary</p> <p>Gravity Shadows Atmosphere</p>

	<p> The sun is a star that appears larger and brighter than other stars because it is closer. Stars range greatly in their distance from Earth.</p> <p> The orbits of Earth around the sun and of the moon around Earth, together with the rotation of Earth about an axis between its North and South poles, cause observable patterns. These include day and night; daily changes in the length and direction of shadows; and different positions of the sun, moon, and stars at different times of the day, month, and year.</p>	<p> How does the moon's journey around the earth influences the earth's systems?</p> <p> How does the Earth's revolution around the sun impact us?</p> <p> What determines day and night depending on where you live on the Earth?</p> <p> What determines the brightness of a star?</p>	<p>their relative distances from Earth.</p> <p>5-ESS1.2 - Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.</p> <p>WIDA.2012.5.4.5 - <a href="#">Bridging ~ Order paragraphs associated with Earth's rotation from a variety of texts</a></p>	<p>to other stars in the galaxy</p> <p> Show (graph) patterns of daily changes in shadows at day and night</p> <p> Graph seasonal patterns in the position of stars</p>	<p> TIER 3 Vocabulary</p> <p>Tides Waves Revolution Orbit Axis Rotation Comets Asteroids Tilt Eclipse Hemisphere Wane Wax Weight Core</p>
June	Enduring Understandings ✕	Essential Questions ✕	Standards	✕ Knowledge & Skills ✕	Academic Language ✕
July	Enduring Understandings ✕	Essential Questions ✕	Standards	✕ Knowledge & Skills ✕	Academic Language ✕