

5 <sup>th</sup> Grade Science							
Semester 1				Semester 2			
Quarter 1		Quarter 2		Quarter 3		Quarter 4	
<b>Instructional Segment #1:</b> What is matter made of?		<b>Instructional Segment #2:</b> From matter to organisms		<b>Instructional Segment #3:</b> Interacting Earth systems		<b>Instructional Segment #4:</b> Patterns in the night sky	
5-PS1-1 <sub>3</sub> 5-PS1-2 <sub>3</sub> 5-PS1-3 <sub>3</sub> 5-PS1-4 <sub>2</sub> 3-5-ETS1-3*		5-LS1-1 <sub>5</sub> 5-LS2-1 <sub>4</sub> 5-ESS2-1* <sub>4</sub> 5-PS3-1 <sub>5</sub>		5-ESS2-1* <sub>4</sub> 3-5-ETS1-1 5-ESS2-2     3-5-ETS1-2 5-ESS3-1 <sub>4</sub> 3-5-ETS1-3*		5-ESS1-1 <sub>3</sub> 5-ESS1-2 <sub>1</sub> 5-PS2-1 <sub>2</sub>	
<i>* = standard is taught more than once within this course</i>							
<u>EP&amp;Cs Connections:</u> Principle 4	<u>ELD Connections:</u> ELD.PI.5.1, 6	<u>EP&amp;Cs Connections:</u> Principles, 1, 2, 3, 4, 5	<u>ELD Connections:</u> ELD.PI.5.1, 3, 9, 11, 12	<u>EP&amp;Cs Connections:</u> Principles 1, 2, 3, 4, 5	<u>ELD Connections:</u> ELD.PI.5.1, 6	<u>EP&amp;Cs Connections:</u> n/a	<u>ELD Connections:</u> ELD.PI.5.1, 5, 11
<b>CCSS ELA Connections:</b> <a href="#">SL.5.1</a> , <a href="#">4</a> , <a href="#">5</a>	<b>CCSS Math Connections:</b> <a href="#">5.MD.3a,b</a> ; <a href="#">5.MD.4</a>	<b>CCSS ELA Connections:</b> <a href="#">W.5.1</a> , <a href="#">SL.5.4</a> , <a href="#">6</a> ; <a href="#">L.5.6</a>	<b>CSS Math Connections:</b> n/a	<b>CCSS ELA Connections:</b> <a href="#">SL.5.1</a> , <a href="#">4</a> , <a href="#">5</a>	<b>CSS Math Connections:</b> <a href="#">5.MD.1</a> ; <a href="#">5.MD.5b</a> ; <a href="#">6.RP.3</a> ; <a href="#">5.NF.2</a> ; <a href="#">5.G.2</a> ; <a href="#">MP. 2</a> , <a href="#">6</a>	<b>CCSS ELA Connections:</b> <a href="#">RI.5.3</a> ; <a href="#">W.5.7</a> , <a href="#">10</a>	<b>CSS Math Connections:</b> <a href="#">4.MD.6</a> ; <a href="#">5.NF.6</a> ; <a href="#">5.G.2</a>

### Science & Engineering Practices (SEPs)

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|--|---|
| 1.) <a href="#">Asking questions and defining problems</a>   | 5.) <a href="#">Using mathematics and computational thinking</a>        |
| 2.) <a href="#">Developing and using models</a>              | 6.) <a href="#">Constructing explanations and designing solutions</a>   |
| 3.) <a href="#">Planning and carrying out investigations</a> | 7.) <a href="#">Engaging in argument from evidence</a>                  |
| 4.) <a href="#">Analyzing and interpreting data</a>          | 8.) <a href="#">Obtaining, evaluating and communicating information</a> |

### Crosscutting Concepts (CCCs)

- 1.) [Patterns](#)
- 2.) [Cause and Effect](#)
- 3.) [Scale, Proportion, Quantity](#)
- 4.) [Systems and System Models](#)
- 5.) [Energy and Matter](#)
- 6.) [Structure and Function](#)
- 7.) [Stability and Change](#)

Guiding Questions			
<b><i>Instructional Segment #1:</i></b> What is matter made of?	<b><i>Instructional Segment #2:</i></b> From matter to organisms	<b><i>Instructional Segment #3:</i></b> Interacting Earth systems	<b><i>Instructional Segment #4:</i></b> Patterns in the night sky
<ul style="list-style-type: none"> <li>• What causes different materials to have different properties?</li> <li>• How do materials change when they dissolve, evaporate, melt, or mix together?</li> <li>• What are the differences between solids, liquids, and gases?</li> </ul>	<ul style="list-style-type: none"> <li>• What matter do plants need to grow?</li> <li>• How does matter move within an ecosystem?</li> <li>• How does energy move within an ecosystem?</li> </ul>	<ul style="list-style-type: none"> <li>• How can we represent systems as complicated as the entire planet?</li> <li>• Where does my tap water come from and where does it go?</li> <li>• How much water do we need to live, to irrigate plants? How much water do we have?</li> <li>• What can we do to protect Earth's resources?</li> </ul>	<ul style="list-style-type: none"> <li>• How far away are the stars?</li> <li>• How can we tell?</li> <li>• What trends and patterns are there in the movement of the Sun and stars?</li> </ul>

**Table 4.4. Overview of Instructional Segments for Grade Five**

	<p><b>1</b> What is Matter Made of?</p>	<p>Students observe different materials and describe their differences. They investigate how materials change when they mix together. They learn to recognize chemical reactions and develop a model of matter being made of particles. These particles move and their arrangement changes, but their mass always stays the same.</p>
	<p><b>2</b> From Matter to Organisms</p>	<p>Students make models that trace the flow of energy and matter in ecosystems. They investigate the needs of plants and gather evidence that all organisms produce waste. They explain how animals depend upon one another as components in an interconnected system.</p>
	<p><b>3</b> Interacting Earth Systems</p>	<p>Students make models of the flow of energy and matter at the scale of the entire planet, and obtain information about a few example phenomena. They describe these phenomena in terms of interactions between different systems within the broader Earth system. They use their models to understand how humans impact these systems and develop solutions to minimize these effects.</p>
	<p><b>4</b> Patterns in the Night Sky</p>	<p>Students ask questions and wonder about the night sky. They investigate the force of gravity and then analyze data to identify patterns related to Earth's motion. They gather evidence and make models showing that the brightness of a star depends on its distance from Earth.</p>

5 <sup>th</sup> Grade Science- Quarter 1 Overview			
Quarter Topic Focus: What is matter made of?			
<u>Science &amp; Engineering Practice (SEP)</u>	<u>Disciplinary Core Idea (DCI)</u>	<u>Crosscutting Concept (CCC)</u>	Performance Expectation (PE)
<b>How</b> students will demonstrate their understanding...	<b>What</b> students will understand...	How students will connect their understanding across units and courses... ( <b>Why</b> they should know it)	A complete standard ( <b>SEP + DCI + CCC = PE</b> ) <small>*colors are associated with SEP (see page 1 for key)</small>
<u>Develop a model</u> to describe	that <u>matter is made of particles too small to be seen.</u>	( <u>Scale, Quantity, Proportion</u> )	5-PS1-1 Textbook, pgs. 68-69
<u>Measure and graph quantities</u> to provide evidence that	<u>regardless of the type of change that occurs</u> when heating, cooling, or mixing substances, the <u>total weight of matter is conserved.</u>	( <u>Scale, Quantity, Proportion</u> )	5-PS1-2 Textbook, pgs. 126-127
<u>Make observations</u> and measurements to	<u>identify materials based on their properties.</u>	( <u>Scale, Quantity, Proportion</u> )	5-PS1-3 Textbook, pgs. 68-69, 106-113
<u>Conduct an investigation</u> to	determine whether the <u>mixing of two or more substances results in new substances.</u>	( <u>Cause and Effect</u> )	5-PS1-4 Textbook, pgs. 69, 108-109
<u>Plan and carry out</u> fair tests in which variables are	controlled and <u>failure points are considered</u> to identify aspects of a model or prototype that can be <u>improved.</u>	n/a	3-5-ETS1-3 Textbook, pgs. 17-27

5 <sup>th</sup> Grade Science- Quarter 2 Overview			
Quarter Topic Focus: From matter to organisms			
<u>Science &amp; Engineering Practice (SEP)</u>	<u>Disciplinary Core Idea (DCI)</u>	<u>Crosscutting Concept (CCC)</u>	<u>Performance Expectation (PE)</u>
<b>How</b> students will demonstrate their understanding...	<b>What</b> students will understand...	How students will connect their understanding across units and courses... ( <b>Why</b> they should know it)	A complete standard ( <b>SEP + DCI + CCC = PE</b> ) <small>*colors are associated with SEP (see page 1 for key)</small>
<u>Support an argument</u> that	<u>plants get the materials they need for growth chiefly from air and water.</u>	( <u>Energy and Matter</u> )	5-LS1-1 Textbook, pgs. 202-213
<u>Develop a model</u> to	describe the <u>movement of matter</u> among <u>plants, animals, decomposers, and the environment.</u>	( <u>Systems and System Models</u> )	5-LS2-1 Textbook, pgs. 210-211
<u>Develop a model</u> using	an example to describe ways the <u>geosphere, biosphere, hydrosphere, and/or atmosphere interact.</u>	( <u>Systems and System Models</u> )	5-ESS2-1 Textbook, pgs. 268-279, 282-293
<u>Use models</u> to describe that	energy in animals' food ( <u>used for body repair, growth, motion,</u> and to maintain body warmth) was <u>once energy from the sun.</u>	( <u>Energy and Matter</u> )	5-PS3-1 Textbook, pgs. 336-337

5 <sup>th</sup> Grade Science- Quarter 3 Overview			
Quarter Topic Focus: Interacting Earth systems			
<u>Science &amp; Engineering Practice (SEP)</u>	<u>Disciplinary Core Idea (DCI)</u>	<u>Crosscutting Concept (CCC)</u>	<u>Performance Expectation (PE)</u>
<b>How</b> students will demonstrate their understanding...	<b>What</b> students will understand...	How students will connect their understanding across units and courses... ( <b>Why</b> they should know it)	A complete standard ( <b>SEP + DCI + CCC = PE</b> ) <small>*colors are associated with SEP (see page 1 for key)</small>
<u>Develop a model</u> to	describe the <u>movement of matter</u> among <u>plants, animals, decomposers, and the environment</u> .	( <u>Systems and System Models</u> )	5-ESS2-1 Textbook, pgs. 268-279, 282-293
<u>Describe and graph</u>	the <u>amounts of salt water and fresh water</u> in various reservoirs to provide evidence about the distribution of water on Earth.	( <u>Scale, Quantity, Proportion</u> )	5-ESS2-2 Textbook, pgs. 226-265
<u>Obtain and combine information</u>	about ways <u>individual communities use science ideas to protect the Earth's resources and environment</u> .	( <u>Systems and System Models</u> )	5-ESS3-1 Textbook, pgs. 250-259
<u>Define a simple design problem</u>	<u>reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost</u> .	n/a	3-5-ETS1-1 No textbook reference
<u>Generate and compare multiple possible solutions</u>	to a problem based on how well each is likely to meet the <u>criteria and constraints of the problem</u> .	n/a	3-5-ETS1-2 No textbook reference
<u>Plan and carry out</u> fair tests in which variables are	controlled and <u>failure points are considered</u> to identify aspects of a model or prototype that can be <u>improved</u> .	n/a	3-5-ETS1-3 No textbook reference

5 <sup>th</sup> Grade Science- Quarter 4 Overview			
Quarter Topic Focus: Patterns in the night sky			
<u>Science &amp; Engineering Practice (SEP)</u>	<u>Disciplinary Core Idea (DCI)</u>	<u>Crosscutting Concept (CCC)</u>	Performance Expectation (PE)
<b>How</b> students will demonstrate their understanding...	<b>What</b> students will understand...	How students will connect their understanding across units and courses... ( <b>Why</b> they should know it)	A complete standard ( <b>SEP + DCI + CCC = PE</b> ) <small>*colors are associated with SEP (see page 1 for key)</small>
Support an <u>argument</u> that the	apparent <u>brightness of the sun and stars</u> is due to the relative distance of the Earth.	( <u>Scale, Quantity, Proportion</u> )	5-ESS1-1 Textbook, pg. 333
<u>Represent data</u> in graphical displays to reveal	patterns of daily <u>changes in length and direction of shadows, day and night, and the seasonal appearance of some stars</u> in the night sky.	( <u>Patterns</u> )	5-ESS1-2 No textbook reference
<u>Support an argument</u> that	the <u>gravitational force</u> exerted by Earth on objects is directed down.	( <u>Cause and Effect</u> )	5-PS2-1 No textbook reference