

## CURRICULUM GUIDE

Physical Sciences: Students apply stability and change to explore chemical properties of matter and chemical reactions to further understand energy and matter

SUBJECT: Science

GRADE: 8<sup>th</sup> Grade

TIMELINE: 1st Quarter

Standard	Kid Friendly Learning Objectives	Content (subject or topic covered in Journeys/My Perspectives)	DOK Level	Skills (ability, practice, aptitude that will be learned)	Assessment	Academic Vocabulary
<b>8.P1U1.1 (2wks)</b> Develop and use a model to demonstrate that atoms and molecules can be combined or rearranged in chemical reactions to form new compounds with the total number of each type of atom conserved.	I can develop and use a model to demonstrate that atoms and molecules can be combined or rearranged in chemical reactions to form new compounds with the total number of each type of atom conserved.	<b>Physical Science</b> <b>Discovering Parts of an Atom</b> Chapter 9 Lesson 1 157-174  <b>Classifying Matter</b> Chapter 7 Lesson 1 P.113-118  <b>Physical Properties</b> Chapter 7 Lesson 2 P. 120-125	DOK2-4	<ul style="list-style-type: none"> <li>• apply</li> <li>• explain</li> <li>• analyze</li> <li>• predict</li> <li>• differentiate</li> </ul>	<b>Developing and using models</b> <ul style="list-style-type: none"> <li>• Develop models to describe unobservable mechanisms.</li> <li>• Use and develop models of simple systems with uncertain and less predictable factors.</li> <li>• Evaluate limitations of a model for a proposed object or tool.</li> </ul>	<ul style="list-style-type: none"> <li>• atoms</li> <li>• substances</li> <li>• elements</li> <li>• chemical reaction</li> <li>• compounds</li> </ul>
<b>8.P1U1.2 (2wks)</b> Obtain and evaluate information regarding how scientists identify substances based on unique physical and chemical properties.	I can obtain and evaluate information regarding how scientists identify substances based on unique physical and chemical properties	<b>Physical Science</b> <b>Using the Periodic Table</b> Chapter 10 Lesson P. 175-190  Physical Changes Chapter 7 Lesson 3 P. 126-130	DOK 2-4	<ul style="list-style-type: none"> <li>• analyze</li> <li>• explain</li> <li>• conclude</li> <li>• discuss</li> <li>• compare and contrast</li> </ul>	<b>Obtain and evaluate information</b> <ul style="list-style-type: none"> <li>• Communicate scientific information and/or technical information (e.g.</li> </ul>	<ul style="list-style-type: none"> <li>• atoms</li> <li>• substances</li> <li>• elements</li> <li>• chemical reaction</li> <li>• compounds</li> </ul>

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		<b>Chemical Properties and Changes</b> Chapter 7 Lesson 4 P. 131-136  <b>Electrons and Energy Levels</b> Chapter 11 Lesson 1 P. 191-197			about a proposed object, tool, process, system) in different formats (e.g., verbally, graphically, textually, and mathematically).	
<b>8.P4U1.4 (2wks)</b> Develop and use mathematical models to explain wave characteristics and interactions.	I can develop and use mathematical models to explain wave characteristics and interactions.	<b>Physical Science</b> <b>What are waves?</b> Chapter 15 Lesson 1 P. 267-272  <b>Wave Properties</b> Chapter 15 Lesson 2 P. 273-278	DOK 2-4	<ul style="list-style-type: none"> <li>• explain</li> <li>• describe</li> <li>• construct</li> <li>• predict</li> <li>• assess</li> </ul>	<b>Develop and use mathematical models</b> <ul style="list-style-type: none"> <li>• Use and/or develop models to predict, describe, support explanations, and/or collect data to test ideas about phenomena in natural or designed systems, including those representing inputs and outputs, and those</li> </ul>	<ul style="list-style-type: none"> <li>• wavelength</li> <li>• frequency</li> <li>• amplitude</li> </ul>

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					at unobservable scales.	
<b>8.P4U1.3 (1wk)</b> Construct an explanation on how energy can be transferred from one energy store to another.	I can construct an explanation on how energy can be transferred from one energy store to another.	<u>Physical Science</u> <b>Electric Charge and Electric Forces</b> P.347-355	DOK2-4	<ul style="list-style-type: none"> <li>• compare</li> <li>• analyze</li> <li>• apply</li> <li>• construct</li> </ul>	<b>Construct an explanation</b> <ul style="list-style-type: none"> <li>• Construct explanations for either qualitative or quantitative relationships between variables (phase/state changes, molecular motion)</li> <li>• Apply scientific knowledge to explain real-world phenomena, examples, or events (fire, radiation, digestion, factories and power plants,</li> </ul>	<ul style="list-style-type: none"> <li>• energy</li> <li>• motion</li> <li>• thermal insulators</li> <li>• conductors</li> <li>• battery</li> <li>• electric current</li> <li>• transferring energy</li> <li>• circuit</li> <li>• radiation</li> <li>• vacuum</li> </ul>

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					etc.).	
<b>8.P1U2.5 (2wks)</b> Develop a solution to increase efficiency when transferring energy from one source to another.	I can develop a solution to increase efficiency when transferring energy from one source to another.	<b>Physical Science</b> <b>Forms of Energy</b> Chapter 5 Lesson 1 P. 75-81 <b>Energy Transformation</b> Chapter 5 Lesson 2 P. 82-88  <b>Energy Resources</b> Chapter Lesson 3 P. 88-96	DOK2-4	<ul style="list-style-type: none"> <li>• design</li> <li>• compare and contrast</li> <li>• explain</li> <li>• infer</li> <li>• examine</li> <li>• summarize</li> </ul>	<b>Develop a solution</b> <ul style="list-style-type: none"> <li>• Undertake design projects, engaging in the design cycle, to construct and implement a solution that meets specific design criteria and constraints.</li> </ul>	<ul style="list-style-type: none"> <li>• energy</li> <li>• exchanges</li> <li>• atoms</li> <li>• molecules</li> <li>• dissipated</li> </ul>