

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: 8th 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
8.P1U1.1 (2wks) 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.	Physical Science Discovering Parts of an Atom Chapter 9 Lesson 1 157-174 Classifying Matter Chapter7 Lesson 1 P.113-118 Physical Properties Chapter 7 Lesson 2 P. 120-125	DOK2-4	<ul style="list-style-type: none"> • apply • explain • analyze • predict • differentiate 	Developing and using models <ul style="list-style-type: none"> • Develop models to describe unobservable mechanisms. • Use and develop models of simple systems with uncertain and less predictable factors. • Evaluate limitations of a model for a proposed object or tool. 	<ul style="list-style-type: none"> • atoms • substances • elements • chemical reaction • compounds
8.P1U1.2 (2wks) 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	Physical Science Using the Periodic Table Chapter 10 Lesson P. 175-190 Physical Changes Chapter7 Lesson 3 P. 126-130	DOK 2-4	<ul style="list-style-type: none"> • analyze • explain • conclude • discuss • compare and contrast 	Obtain and evaluate information <ul style="list-style-type: none"> • Communicate scientific information and/or technical information (e.g. 	<ul style="list-style-type: none"> • atoms • substances • elements • chemical reaction • compounds

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

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

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