

Energy UBD Unit Design Template

Time Frame: Quarter 1	Unit Title: Physics (Forces and Motion)	Course Name: 8th-grade Integrated Science
Stage 1: Desired Results		
Established Goal(s)	Transferable Skills	
<p>6-8.PS2-Physical Science ~ Motion and Stability: Forces and Interactions</p> <p>6-8.PS2.A-Forces and motion ~ The role of the mass of an object must be qualitatively accounted for in any change of motion due to the application of a force.</p> <p>6-8.PS3.A-Definitions of energy ~ Kinetic energy can be distinguished from the various forms of potential energy. Energy changes to and from each type can be tracked through physical or chemical interactions. The relationship between the temperature and the total energy of a system depends on the types, states, and amounts of matter.</p> <p>6-8.PS3.B-Conservation of energy and energy transfer ~ Kinetic energy can be distinguished from the various forms of potential energy. Energy changes to and from each type can be tracked through physical or chemical interactions. The relationship between the temperature and the total energy of a system depends on the types, states, and amounts of matter.</p> <p>6-8.PS3.C-Relationship between energy and forces ~ When two objects interact, each one exerts a force on the other, and these forces can transfer energy between them.</p>	<p><i>Students will be able to independently use their learning to...</i></p> <ul style="list-style-type: none"> ● Identify types and transfer of energy ● Access the safety of a car ● Construct. and present an argument that supports a claim. ● Plan an investigation that will answer a testable question ● Analyze and interpret multiple forms of data (qualitative and quantitative) ● Develop a model that demonstrates a concept 	
	Meaning	
	<p><u>Understandings</u> <i>Students will understand that...</i></p> <ul style="list-style-type: none"> - kinetic energy is the energy of motion and the stored energy is referred to as potential energy. - as mass and height increase so does the amount of energy. - the energy of molecules in various states of change, solids have the lowest energy, and gas is the highest. Temperature can also be used to measure the amount of energy - energy can not be created or destroyed only transferred. 	<p><u>Essential Questions</u></p> <p>How do mass and height alter the amount and type of energy?</p> <p>How does your knowledge of energy improve your quality of life and safety?</p>
Acquisition		
	<p><i>Students will know...</i></p> <p>The definition of kinetic energy and specific examples.</p> <p>The definition of potential energy and specific examples.</p> <p>As mass and height increase, energy increases.</p> <p>How molecule energy and movement change in the different states of matter.</p> <p>What happens when heat energy is added to</p>	<p><i>Students will be able to...</i></p> <p>Conduct experiments to show how kinetic and potential energy are affected by mass and height.</p> <p>Conduct an experiment to explain how energy level changes in the matter when heat energy is added or removed.</p> <p>Access the safety of a car and give it a star safety rating using key concepts.</p>

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	matter.	
	The three forms of heat transfer	