



**Science  
Pre-Advanced Placement  
Grade 6**

<b>Unit Name: Energy</b>		<b>Second 6 Weeks, Days to Teach: 3 Weeks</b>	
<b>Date Taught</b>	<b>TEKS and AP Required Elements</b>	<b>Content/Vocabulary</b>	<b>Guiding Questions</b>
	<p>TEKS</p> <p>6.8 Science concepts. The student knows that complex interactions occur between matter and energy. The student is expected to:</p> <p>(A) define matter and energy.</p> <p>6.9 Science concepts. The student knows that obtaining, transforming, and distributing energy affects the environment. The student is expected to:</p> <p>(A) identify energy transformations occurring during the production of energy for human use such as electrical energy to heat energy or heat energy to electrical energy.</p> <p>AP Connections: AP Environment Science</p> <p>V. Global Changes and their consequences a. First order Effects 1. Atmosphere</p>	<p>Biomass Chemical energy Electrical energy Electromagnetic energy Embodied energy Energy Fossil fuels Geothermal Heat energy Hydropower Inexhaustible Mechanical energy Nonrenewable Nuclear Renewable Solar energy Thermal energy Wind energy</p>	<p>What are some types of energy?</p> <p>What is energy?</p> <p>How is energy used in each step of making applesauce? ...in using a solar cooker?</p> <p>Explain the reasons for the difference in the temperature change between the control and your hot dog?</p> <p>How could you improve your design?</p>



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	<p>b. Higher order interaction 1. Atmosphere</p>		
	<p>TEKS</p> <p>6.8 Science concepts. The student knows that complex interactions occur between matter and energy. The student is expected to:</p> <p>(A) define matter and energy.</p> <p>6.9 Science concepts. The student knows that obtaining, transforming, and distributing energy affects the environment. The student is expected to:</p> <p>(C) research and describe energy types from their source to their use and determine if the type is renewable, non-renewable, or inexhaustible.</p> <p>AP Connections: AP Environment Science IV. Environmental Quality A. Air/Water/Soil 1. major pollutants</p>		<p>What are the energy transformations that take place in a power plant?</p> <p>What is the difference between renewable and nonrenewable resources? inexhaustible?</p>



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	<p>V. Global Changes and their consequences</p> <ul style="list-style-type: none"> <li>a. First order Effects             <ul style="list-style-type: none"> <li>1. Atmosphere</li> </ul> </li> <li>b. Higher order interaction             <ul style="list-style-type: none"> <li>1. Atmosphere</li> </ul> </li> </ul>		
	<p>TEKS</p> <p>6.1 Scientific processes. The student conducts field and laboratory investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:</p> <p>(B) make wise choices in the use and conservation of resources and the disposal or recycling of materials.</p> <p>6.3 Scientific processes. The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to:</p> <p>(B) draw inferences based on data related to promotional materials for products and services.</p> <p>6.9 Science concepts. The student</p>		<p>Why do you think some products cost more per ounce than others?</p> <p>Described the embodied energy involved in producing this product.</p> <p>How could the cost of this product be reduced?</p>



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	<p>knows that obtaining, transforming, and distributing energy affects the environment. The student is expected to:</p> <p>(A) identify energy transformations occurring during the production of energy for human use such as electrical energy to heat energy or heat energy to electrical energy.</p> <p>AP Connections: IV. Environmental Quality A. Air/Water/Soil AP Environment Science V. Global Changes and their consequences     a. First order Effects         1. Atmosphere     b. Higher order interaction         1. Atmosphere</p>		
	<p>TEKS</p> <p>6.9 Science concepts. The student knows that obtaining, transforming, and distributing energy affects the environment. The student is expected to:</p>		<p>How would you calculate the cost of lighting your school?</p> <p>How could this caused be reduced in terms of energy use?</p>

	<p>(B) compare methods used for transforming energy in devices such as water heaters, cooling systems, or hydroelectric and wind power plants.</p> <p>AP Connections:          AP Environment Science          IV. Environmental Quality          A. Air/Water/Soil          V. Global Changes and their consequences              a. First order Effects                1. Atmosphere              b. Higher order interaction                1. Atmosphere</p>		
	<p>TEKS</p> <p>6.8 Science concepts. The student knows that complex interactions occur between matter and energy. The student is expected to:</p> <p>(A) define matter and energy.</p> <p>6.9 Science concepts. The student knows that obtaining, transforming, and distributing energy affects the environment. The student is expected</p>		<p>What are the types of energy?</p> <p>How are the energy transformations in a hydroelectric power plant and a coal power plant similar? different?</p>



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<p>to:</p> <p>(A) identify energy transformations occurring during the production of energy for human use such as electrical energy to heat energy or heat energy to electrical energy;</p> <p>(B) compare methods used for transforming energy in devices such as water heaters, cooling systems, or hydroelectric and wind power plants.</p> <p>AP Connections: IV. Environmental quality A. Air/Water/Soil AP Environment Science V. Global Changes and their consequences</p> <ul style="list-style-type: none"><li>a. First order Effects<ul style="list-style-type: none"><li>1. Atmosphere</li></ul></li><li>b. Higher order interaction<ul style="list-style-type: none"><li>1. Atmosphere</li></ul></li></ul>		
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