

Learning Targets for Unit 5: Energy

Textbook / Resource	Learning Target (I can...)										
Pg. 357, History of Light Bulb Notes	<p><b>Define "efficiency" and provide an example of an energy-efficient device.</b>  <i>Efficiency is the percentage of energy that is actually used to perform work. The least amount of energy that is "lost" as heat, the greater the efficiency. Ex. A well-insulated building or room is more efficient than one that is not insulated because it traps in more of the energy or heat that would have been lost.</i></p>										
Hand-outs	<p><b>State/Explain the "Law of Conservation of Energy."</b>  <i>The Law of Conservation of Energy says that the total energy in a system is always constant. Energy can neither be created nor destroyed, but it can change from one form of energy to another.</i></p>										
Pg. 430	<p><b>Explain and provide examples of heat transfer by 1) convection and 2) radiation, specifically for heating your home</b>  <i>Convection is energy transfer by the movement of a fluid - usually a gas or liquid, while radiation is energy transfer through the form of e/ electromagnetic waves such as light.</i></p> <p><i>Convection example - Heating and cooling of air is distributed throughout the home by convection currents.</i></p> <p><i>Radiation example – Energy is transferred by electromagnetic waves..</i></p>										
Class hand-outs	<p><b>Define "energy transformation" and provide examples.</b>  <i>Energy transformation is a change from one form of energy to another. For example: a car's engine releases stored energy in fuel through combustion to convert it into mechanical energy of moving engine parts. Remember: When energy is transferred, the total amount of energy does not change.</i></p>										
Pg. 344 - 353	<p><b>Provide examples of the forms of energy that we use to create electricity.</b></p> <table border="1" data-bbox="391 1262 1377 1793"> <thead> <tr> <th data-bbox="391 1262 597 1304">Chemical</th> <th data-bbox="597 1262 792 1304">Nuclear</th> <th data-bbox="792 1262 987 1304">Mechanical</th> <th data-bbox="987 1262 1182 1304">Solar</th> <th data-bbox="1182 1262 1377 1304">Geothermal</th> </tr> </thead> <tbody> <tr> <td data-bbox="391 1304 597 1793"><i>Burning fossil fuels releases chemical energy in the form of heat, which is used to turn water into steam which turn the blades of a turbine to generate Electricity.</i></td> <td data-bbox="597 1304 792 1793"><i>Nuclear power plants release Heat from Fission reactions to turn water into steam, which then turns the blades of a turbine to generate electricity</i></td> <td data-bbox="792 1304 987 1793"><i>Hydroelectricity produces electricity Through flowing water which turns a turbine. Wind energy produces electricity by using (airflow to turn a turbine. (MOTION)</i></td> <td data-bbox="987 1304 1182 1793"><i>Solar energy or radiation from the sun constantly gives off energy in the form of light and heat, which can be converted to electricity either directly through solar cells or indirectly by heating water to create steam to turn turbines.</i></td> <td data-bbox="1182 1304 1377 1793"><i>Geothermal energy uses the Earth's internal heat to heat water and create steam that can turn a turbine to create an electric current.</i></td> </tr> </tbody> </table>	Chemical	Nuclear	Mechanical	Solar	Geothermal	<i>Burning fossil fuels releases chemical energy in the form of heat, which is used to turn water into steam which turn the blades of a turbine to generate Electricity.</i>	<i>Nuclear power plants release Heat from Fission reactions to turn water into steam, which then turns the blades of a turbine to generate electricity</i>	<i>Hydroelectricity produces electricity Through flowing water which turns a turbine. Wind energy produces electricity by using (airflow to turn a turbine. (MOTION)</i>	<i>Solar energy or radiation from the sun constantly gives off energy in the form of light and heat, which can be converted to electricity either directly through solar cells or indirectly by heating water to create steam to turn turbines.</i>	<i>Geothermal energy uses the Earth's internal heat to heat water and create steam that can turn a turbine to create an electric current.</i>
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