

Course: IPC			Designated Six Weeks: Sixth Six Weeks		
Unit: Energy Resources			Days to teach: 5-6 Instructional days		
TEKS/Prerequisites	Guiding Questions/ Specificity	Assessment	Vocabulary	Instructional Strategies/ELPS	Resources/ Weblinks
<p>(5) Science concepts. The student recognizes multiple forms of energy and knows the impact of energy transfer and energy conservation in everyday life. The student is expected to:</p> <p>5(I) critique the advantages and disadvantages of various energy sources and their impact on society and the environment</p> <p>7(F) research and describe the environmental and economic impact of the end-products of chemical reactions such as those that may result in acid rain, degradation of water and air quality, and ozone depletion.</p> <p>3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions. The student is expected to:</p> <p>3(C) draw inferences based on data related to promotional materials for products and services</p>	<p><b>Guiding Questions:</b></p> <ol style="list-style-type: none"> <li>How do different energy sources create pollution?</li> <li>What are the corrosive effects of acid rain?</li> <li>Will the type of energy sources used in the future be different from the ones used today?</li> </ol> <p><b>Specificity:</b></p> <ol style="list-style-type: none"> <li>Impacts of pollution on society such as thermal and chemical</li> <li>Describe the formation of acid rain including the chemical reactions.</li> <li>Describe the formation of the ozone and the chemical reactions.</li> </ol>	<p>Describe the impacts of fossil fuels on the environment.</p> <p>Research project based activity on alternative fuels.</p> <p>Give advantages and disadvantages to using nuclear energy sources.</p>	<p>Critique</p> <p>Advantages</p> <p>Disadvantages</p> <p>Impact</p> <p>Solar Energy</p> <p>Nuclear Energy</p> <p>Fossil Fuel</p> <p>Society</p> <p>Environment</p>	<p><b>Activities:</b></p> <ol style="list-style-type: none"> <li>Research the advantages and disadvantages of the various forms of energy?</li> <li>Give a project presentation which includes the student discussing research findings.</li> <li>How much does energy really cost?</li> <li>Solar Heating</li> </ol> <p><b>ELPS:</b></p> <p><a href="http://ritter.tea.state.tx.us/rules/tac/chapter074/ch074a.html">http://ritter.tea.state.tx.us/rules/tac/chapter074/ch074a.html</a></p> <ol style="list-style-type: none"> <li>(4F) Visuals/Video</li> <li>(3B) List/Sort/Label</li> <li>(2D) KWL</li> </ol>	<p>Textbook: "Integrated Physics and Chemistry" Glencoe 2002</p> <p>United Streaming.com – <a href="http://streaming.discoveryeducation.com/">http://streaming.discoveryeducation.com/</a></p> <p>Safari Montage - <a href="http://safari.news.mansfieldisd.org/SAFARI/montage/login.php?url=dashboard.php">http://safari.news.mansfieldisd.org/SAFARI/montage/login.php?url=dashboard.php</a></p> <p>Elements of Physics: Energy: Work and Power <a href="http://vod.esc11.net/videos/11308/pg11308_256k.asf">http://vod.esc11.net/videos/11308/pg11308_256k.asf</a></p>

Course: IPC			Designated Six Weeks: Sixth Six Weeks		
Unit: Waves			Days to teach: 8-9 Instructional Days		
TEKS/Prerequisites	Guiding Questions/ Specificity	Assessment	Vocabulary	Instructional Strategies/ELPS	Resources/ Weblinks
<p>5(G) explore the characteristics and behaviors of energy transferred by waves, including acoustic, seismic, light, and waves on water as they superpose on one another, bend around corners, reflect off surfaces, are absorbed by materials, and change direction when entering new materials</p> <p>3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions. The student is expected to:</p> <p>3(E) describe connections between physics and chemistry and future careers</p>	<p><b>Guiding Questions:</b></p> <ol style="list-style-type: none"> <li>How do waves affect everybody's lives for good and for bad?</li> <li>How does sound affect your daily life?</li> <li>How does sound travel?</li> <li>Why is light the only form of electromagnetic energy you can see?</li> </ol> <p><b>Specificity:</b></p> <ol style="list-style-type: none"> <li>Transverse vs. compression waves</li> <li>Relate the velocity of the wave to the frequency and wavelength.</li> <li>Measure the amplitude of a wave</li> </ol>	<p>One tuning fork is struck and placed next to an identical fork. The two forks do not touch. The second tuning fork starts to vibrate because of</p> <p>A interference B the Doppler effect C resonance D machine Answer: C</p> <p>A diver on a springboard can increase the height of a jump by repeatedly flexing the knees with a rhythm that matches the springboard's natural frequency. This is an example of</p> <p>A. Interference B. Reflection C. Resonance D. Polarization Answer: C</p> <p>At 0 degrees Celsius, sound travels through air at a speed of 330m/s. If a sound wave is produced with a wavelength of 0.10m, what is the wave's frequency?</p>	<p>Transverse Wave</p> <p>Longitudinal Wave</p> <p>Medium</p> <p>Amplitude</p> <p>Crest</p> <p>Trough</p> <p>Wavelength</p> <p>Frequency</p> <p>Refraction</p> <p>Diffraction</p> <p>Interference</p> <p>Resonance</p> <p>Doppler Effect</p> <p>Pitch</p> <p>Decibel</p> <p>Sonar</p> <p>Electromagnetic Spectrum</p>	<p><b>Activities:</b></p> <ol style="list-style-type: none"> <li>Vibrations in Matter</li> <li>Wave Behavior</li> <li>Polarizing Filter</li> <li>Making Music</li> <li>Blocking Noise Pollution</li> <li>Radio Frequencies</li> </ol> <p><b>ELPS:</b> <a href="http://ritter.tea.state.tx.us/rules/tac/chapter074/ch074a.html">http://ritter.tea.state.tx.us/rules/tac/chapter074/ch074a.html</a></p> <ol style="list-style-type: none"> <li>(4F) Visuals/Video</li> <li>(4F) Manipulative</li> <li>(2G) Draw &amp; Write</li> </ol>	<p>Textbook: "Integrated Physics and Chemistry" Glencoe 2002</p> <p>United Streaming.com – <a href="http://streaming.discovereducation.com/">http://streaming.discovereducation.com/</a></p> <p>Safari Montage - <a href="http://safarinews.mansfieldisd.org/SAFARI/montage/login.php?url=dashboard.php">http://safarinews.mansfieldisd.org/SAFARI/montage/login.php?url=dashboard.php</a></p> <p>Elements of Physics: Waves: Sound and Electromagnetism <a href="http://vod.esc11.net/videos/11302/pg11302_256k.asf">http://vod.esc11.net/videos/11302/pg11302_256k.asf</a></p> <p>Making Sound Waves <a href="http://www.school-for-champions.com/science/sound_string.htm">http://www.school-for-champions.com/science/sound_string.htm</a></p> <p>Sound Waves and Sources <a href="http://paws.kettering.edu/~drussell/demos.html">http://paws.kettering.edu/~drussell/demos.html</a></p> <p>Wave Refraction <a href="http://www.wiley.com/college/strahler/0471480533/animations/ch19_animations/animation2.html">http://www.wiley.com/college/strahler/0471480533/animations/ch19_animations/animation2.html</a></p>