

Wind Power

Grade Level: 9-12

Overview	Student will learn about wind power and then build their own windmills and will bookmark the pictures of a design they want on vi.sualize.us .
Objectives	<p>Upon the completion of this lesson, the student will:</p> <ol style="list-style-type: none"> 1. Successfully describe how windmills have developed through history. 2. How a wind mill works accurately. 3. Define the components of a windmill. 4. Successfully design a model windmill that will produce electricity from wind produced from a fan.
Materials	<ol style="list-style-type: none"> 1. PowerPoint Presentation 2. Materials 3. Electric Motor 4. Voltmeter 5. Vi.sualize.us
Procedures	<ol style="list-style-type: none"> 1. History (overhead) <ol style="list-style-type: none"> a. Original windmills b. Uses <ol style="list-style-type: none"> i. Grinding of grain to make flour. ii. Water Pumps. 2. Development over time (overhead) <ol style="list-style-type: none"> a. Wind b. Charles F. Brush c. Poul la Cour 3. Modern Wind Mills (overhead) 4. Parts of a wind mill (overhead) <ol style="list-style-type: none"> a. Rotor Blade b. Nacelle c. Hub <ol style="list-style-type: none"> i. Rotor Hub ii. Brake iii. Low-Speed Shaft iv. Gearbox v. Brake vi. High-speed Shaft vii. Generator d. Transformer 5. Different types of wind mills (overhead) <ol style="list-style-type: none"> a. Vertical Axis b. Horizontal Axis

<p>Standards</p>	<p>1. <u>Standards for Technological Literacy: Content for the Study of Technology</u>. (2000). ITEA. 16.C. Energy comes in different forms. 16.M. Resources can be renewable or nonrenewable.</p> <p>2. Math standards. G.3. Students identify and describe simple quadrilaterals. They find measure of sides, perimeters, and areas. 4.5. Students understand perimeter and area, as well as measuring volume, capacity, time, and money.</p>
<p>Evaluation</p>	<p>Students will do a worksheet after building their projects that will include questions over the information presented in lesson and a reflection for the project.</p>