



# Wind POWER

**Teacher Resource/ Pre-  
Visit Activity (for 6<sup>th</sup>  
Graders)**

**Howard B. Owens Science Center**

**Wind Power: Pre-Visit Information &  
Activities**

**The Pre-visit activities are linked to the prerequisite skills and knowledge that students arriving for this particular program, should have acquired at their home school in order to optimally benefit from the On-site Activity.**

▪ The following pages/links contain content on electricity, electricity generation, old energy sources versus new alternatives, and wind energy. It is suggested that the visiting teacher review and select information from the area(s) that s/he deems appropriate to help prepare students for a visit to the Howard B. Owens Science Center (HBOSC).

**Engagement and Assessment of Prior Knowledge:**

Go to the following site to give students a brief overview of “wind energy facts.” [http://www.ehow.com/facts\\_4926970\\_wind-energy-facts-kids.html#page=1](http://www.ehow.com/facts_4926970_wind-energy-facts-kids.html#page=1)

**Introduction to Renewable Energy (to build on prior knowledge):**

*Use the U.S. Energy Information Administration “EIA” website: (<https://www.eia.gov/kids/energy-sources/electricity/>) to build students capacity about energy information (NB: Pasting the above link to web browser may be best.). Go to the following site to give students a brief overview of “wind energy facts.”*  
[http://www.ehow.com/facts\\_4926970\\_wind-energy-facts-kids.html#page=1](http://www.ehow.com/facts_4926970_wind-energy-facts-kids.html#page=1)

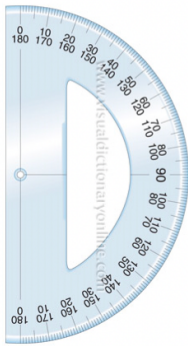
**Use of a Protractor (a critical skill for the On-site Activity):**

Students need to have an understanding of how to use a protractor for this program. Please practice that with them, and have them

verify that an angle has the same number of degrees when measured anywhere in its plane, regardless of orientation. They need to know how to use the protractor when the zero is on a vertical plane rather than horizontal (holding the protractor sideways so it looks like a D). *The following is a great website to demo for your students.* At a minimum, students should have the experience and understanding of how difficult it is to accurately hold an object vertically, and benefit from the assistance of a helper who can better detect slants.

<http://www.amblesideprimary.com/ambleweb/mentalmaths/protractor.html>

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### **On-site Activity:**

During the visit to the HBOSC, a review of the types of energy will occur, especially looking at energy sources and consumption and renewable and nonrenewable sources. The hands-on portion will focus on constructing a wind-powered electrical generator, and testing variables that affect the amount of electrical energy produced. Students will vary the angle and length of the rotor blades, among other factors, to observe the effect on the voltage output. They will manipulate variables in controlled comparisons, and pool their data with other teams' as part of this investigation. Many math skills will be integrated.