

## Energy from the Wind: Intermediate Level

**Objectives:** As a result of this lesson, students will understand how electricity is generated from the wind. Students will be able to build their own anemometers, and experiment with blade design and pitch on a wind turbine.

Intermediate students learn about wind formation, wind energy, and electricity generation from wind through reading, critical thinking activities, and hands-on investigations. The kit comes with a Teacher Guide, a class set of Student Guides, and the materials necessary to conduct the activities, including two KidWind Basic Turbines and a geared nacelle to convert one turbine to a geared turbine.



**This kit includes:**

Anemometer  
Wind gauge  
Wind vane  
Genecon and Book  
Box of snow cone cups  
Multimeters  
Compass  
Large straws  
Small straws  
Straight pins  
Small binder clips  
Pencils  
Paperclips  
Duct Tape  
Masking Tape  
Sand paper  
¼" Dowels  
18" Long balsa sheets  
16" Long chloroplast sheets

Protractors  
Hub  
PVC 1' 90 degree Joints  
PVC 1' T-Joints (2 with drilled holes)  
PVC 6" pipe  
PVC 24" pipe  
PVC 2" pipe  
PVC couplers  
Generators  
Geared Head Assembly  
Alligator Clips  
Visual Voltmeter  
Extra Generators  
Teacher guide  
Student Guides

**Not in this kit:**

Foam cups  
Hole punch

Rulers  
Scissors  
Glue  
Permanent Markers  
Tape  
Pennies  
Poster board  
String  
Meter Stick  
Watch with second hand  
Extra blade materials  
Dry Cell battery (1.5 volt, AAA, AA, or D)  
1 Bulb (3.8V, 0.3A) in socket with leads

**Additional Equipment Needed:**

Fan

\*See video with assembly instructions and tips at <https://www.youtube.com/watch?v=mjsGrWioLlk>

\*To replenish any materials used, lost or broken during classroom use, check craft, hardware, or hobby stores. For more information or to purchase this kit, visit [NEED.org](http://NEED.org)