

Wind Energy and Climate Change Trunk

Teacher's Information and Guide

Activities in the teaching kit are selected from the WindWise Education and the Keystone Center. WindWise Education supports activities and curriculum development through its partner Kid Wind.

The kit contains activities, learning goals, educational standards, and assessments to teach students, through the use of inquiry, about the physics behind wind turbines, wind energy, and climate change. Activities address the full range of topics surrounding the issues including the science of greenhouse gases, carbon sequestration, economics and policy, and human population growth. The activities in this kit are aimed at students in 6th-10th grades.

In addition to the teaching activities, this kit includes kits by Thames and Kosmos to allow students to get a hands-on approach on the physics and engineering behind some green-energy concepts. Included are five Windpower 2.0 kits and five Eco-Battery Vehicles kits.

The kits each come with one full-color experiment manual each for teacher use, and five photo-copied full manuals for students use.

In addition to allowing students to work hands-on with building these structures and measuring energy generation and consumption, each kit allows experimentation with several variables, so groups of students in a classroom can test multiple hypotheses.

The Windpower 2.0 kit allows for experimentation with:

- Size and number of turbine blades
- Wind speed and angle and energy generation
- Gear ratios inside the turbine

The Eco-Battery Vehicles kit allows for experimentation with:

- Building various vehicles, with different sizes and weight
- Various salt concentrations in water to generate energy

This trunk also includes one kit each for Thames and Kosmos Air + Water Power and Solar Power. While these kits allow for less testing variables, they can be used to demonstrate to students green energy concepts. The trunk also includes digital multi-meters to quantitatively measure generation of electricity.

