

The Power of Wind curriculum aligns with 7th grade Essential Standards—Energy Conservation and Transfer. The curriculum was developed in partnership National 4-H, the University of Illinois, the Noyce Foundation, and 3M Foundation. Each lesson is grade-level appropriate and provides a continuous build upon the Essential Standard: Forces and Motion. In addition, the Power of Wind curriculum has been correlated with U.S. National Science Education Standards.

National Science Standards objective include:

- The order of Scientific Inquiry
- Physical Science (Motion and Forces)
- Science and Technology (Abilities of Technological Design)
- Science in Personal and Social Perspectives

The Power of Wind also includes support lesson plans that allow teachers (volunteers) and students to explore thinking like an engineer, innovative design, and concepts of engineering, the relevance of math to the energy we use, and community influence.

Lessons module themes include challenge, investigation, and exploration that allow the student to achieve a metacognitive understanding of mechanical systems through the science of wind power. Many believe students learn best by interacting with the world – listening, observing, experimenting, and applying their knowledge to real-world situations. Each activity within this curriculum follows these steps in the experiential learning model.

Life skills help a person live a productive, and satisfying life. Within this curriculum students will have the opportunity to develop life skills related to critical thinking, problem solving, teamwork, communication, and acquiring and evaluating information.

Contact your local Cooperative Extension and ask the 4-H agent about the Power of Wind.

## Essential Standards:

- 7.P.2 Understand forms of energy, energy transfer and transformation and conservation in mechanical systems.**
- 7.P.2.1 Explain how kinetic and potential energy contribute to the mechanical energy of an object.**
- Chapter 1: How Can We Think Like An Engineer
- 7.P.2.2 Explain how energy can be transformed from one form to another (specifically potential energy and kinetic energy) using a model or diagram of a moving object (roller coaster, pendulum, or cars on ramps as examples)**
- Chapter 2: How Do We Study The Wind?
  - Chapter 3: How Do We Use The Wind?
- 7.P.2.3 Recognize that energy can be transferred from one system to another when two objects push or pull on each other over a distance (work) and that electrical circuits require a complete loop through which an electrical current can pass.**
- Chapter 4: How Do Geography and Community Influence Wind Power Projects?
- 7.P.2.4 Explain how simple machines such as inclined planes, pulleys, levers, and wheels and axles are used to create mechanical advantage and increase efficiency.**
- Chapter 5: How Does Wind Inspire Creativity and Design?

