

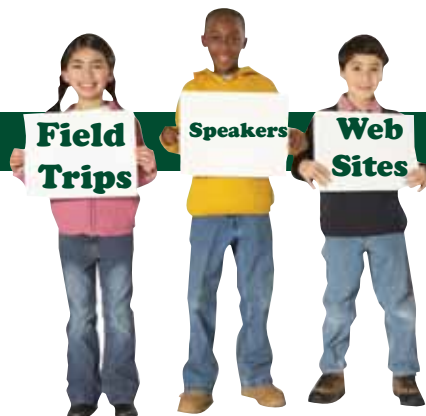
The Power of the Wind

Supporting School-Age Accreditation and Quality Programming

The Power of the Wind is designed for youth 11-13 years old.

Essential Elements of 4-H Youth Development

Youth involved in 4-H know they are cared about and feel a sense of **BELONGING**; they exercise **INDEPENDENCE** by using decision-making and action to influence people and events; they develop a sense of **MASTERY** by learning skills needed in making positive career and life choices; and they experience **GENEROSITY** by helping others through community service. These elements support the Army Youth Development Components of Belonging, Success, Service and Independence.



Ideas! Ideas! Ideas!

Since the volume of wind is not the same in all parts of the USA or the world, youth may want to start by finding some local experts to be guest speakers. Energy companies, universities and government agencies may be some places to look for these resources.

Are there wind powered schools or wind farms close enough for a field trip?

Are there career programs in the wind energy field available nearby?

Nativewind.org – a wind powered radio station
Off shore wind turbines? www.awea

The local TV meteorologist could be a guest speaker and might have suggestions about field trip locations.

Summary

Wind power is a source of electrical energy that will be powering the future. It may also be a major source for careers so there's no time like the present to help everyone in the community learn more about this fascinating subject. *The Power of Wind* 4-H project will help youth and adults learn science and engineering skills that will be useful throughout life.

Providing Quality Middle School and Teen Programming

The Power of the Wind should appeal to youth who are concerned about the environment or interested in learning more about science and technology. By combining the tips in the **Facilitators Guide, pages 44-47** and the creative ideas of youth this will become an exciting and educational project to share with others.

Opportunities for Youth Leadership and Development and Cross-age Teaching

This curriculum offers many opportunities for youth to develop leadership skills by sharing what they learn about wind energy with others in their communities. Adult leaders and older youth can also choose activities that will interest older school-age children like designing a wind powered boat or learning how a pinwheel works. These opportunities not only allow youth to share project information but to also master skills in communication and decision making.



THE Army 4-H EXPRESS GUIDE TO

The Power of the Wind



You really don't have to be an engineer or a scientist to have fun helping middle school youth learn about wind. This 4-H project is a great way to learn more about this clean, renewable energy source.

The Power of the Wind

Project Goals

This project is designed to teach about wind and its uses while introducing youth to science, engineering and technology (SET). Youth will construct wind powered devices as they learn how wind is used to produce electricity. They will be introduced to scientific methods of problem solving that will be useful in all aspects of their lives and will share their projects with community leaders as well as family members, friends and younger children.

Four Fun Activities

1 Remember the first pinwheel you had as a child? Wasn't it fun to watch it spin? *The Power of the Wind* project explores everything from paper pinwheels to high tech wind turbines. Begin exploring wind with **Youth Guide, How Can We Design a Better Pinwheel?**, pages 16-17. Discuss what "best" means in this activity?

2 See if the group can use wind power to make enough electricity to light an LED. Follow the directions in the **Youth Guide, How Can We Use Wind Power to Produce Electricity**, pages 22-23 and see what happens. Encourage youth to explain and demonstrate the turbine to others.

3 Scientists and engineers are not the only ones fascinated by the wind. Look at the examples in **Youth Guide, How Does the Wind Move Through Art and Literature?**, pages 36-37, then have youth create their own interpretation of the wind and show or explain it to the others in the project.

4 Why is it important to know when the wind is blowing or which direction it's blowing? Weathervanes are a simple way of determining if the wind is blowing and can be made following the direction found at www.4-H.org/curriculum/wind. **Grab and Go Activities, number 5.**

Experiential Learning

Experiential Learning engages children and youth while they learn, share, and grow through their 4-H experiences. With an adult as the coach, the first step is "doing" or exploring. Next, youth share what they did and discuss the experience with their peers. After they've identified the skills and knowledge gained, help them determine how to apply the skills and knowledge to other situations in their lives.



Project Activity Guides and Target Age Groups

The Power of Wind, Youth Guide for ages 11-13, includes challenges and activities for exploring and investigating how wind affects our lives. Activities in the guide teach SET skills as well as life skills like communication, critical thinking and acquiring information.

The Power of Wind, Facilitator's Guide provides tips for supporting youth as they complete each of the activities individually or in small groups. Activities include an overview, steps for preparation and tips for facilitation. The guide contains a glossary, a list of additional project resources and information about the learning characteristics of 11-13 year-olds.



Life Skills

"Skills that help an individual to be successful in living a productive and satisfying life" are identified as Life Skills (Hendricks, 1996). Life skills in this project include self-confidence, decision making, critical thinking, goal setting, planning and organizing, communication, learning to learn, wise use of resources, personal ethics and character, perseverance and positive relationship skills with others.

The Power of the Wind

Related 4-H Projects

Youth who enjoy learning about the science, engineering and technology of wind may also be interested in *Aerospace Adventures, Electric Excitement and Small Engines*. The photography project can be used to document the effects of wind or capture fields of wind turbines.

Integrating Technology

There are many ways to use technology with *The Power of the Wind* project. See a wind farm in action by visiting www.4-H.org/curriculum/wind and look at the youth-made short film of a wind farm in California.

Or, check out the Internet for these additional resources:
<http://www.nativewind.org/>
<http://www.awea.org/> (American Wind Energy Association)
www.4-H.org/curriculum/wind
<http://www.windpoweringamerica.gov/>

Character Connection

CHARACTER COUNTS! all the time. Use the Pillar of Citizenship to:

- teach others the environmental benefits of using the wind to generate energy
- help with community clean-up after storms

Additional character resources can be found at www.4-hmilitarypartnerships.org

Linking to the Army's Four Service Areas and Baseline Programming

Sports, Fitness and Health Options

Wind is a factor in many popular sports like baseball, golf and tennis. Some other sports like sailing, parasailing, kite surfing, hang gliding and wind surfing can't be done without enough wind. All of the sports mentioned and probably some others youth can think of have fitness and health benefits because they contribute to being active. Learning more about the science of wind using **Youth Guide, How Do We Observe and Measure the Wind**, pages 10-11, will add an extra dimension to the Sports, Fitness and Health Options.

Arts, Recreation and Leisure Activities

Having youth make and fly their own kites can be an art experience as well as a recreational and leisure time activity. Making pinwheels, sailboats, boats and wind mills also fall in this category. When youth are doing other art activities such as painting, drawing, sculpting and photography the wind can be used as the subject. **Youth Guide, How Does the Wind Move Through Art and Literature?**, pages 36-37, provides a variety of ideas.

Life Skills, Citizenship, and Leadership Opportunities

Youth can learn life skills and leadership through group project activities, community service and learning about careers. **Youth Guide, What Innovative Design Can You Create?**, pages 38-39, is a great place to start and fits well in this service area.

Academic Support, Mentoring, and Intervention Services

As youth learn about wind energy they can share their new knowledge with younger children through experiments and activities. **Youth Guide, How Can We Design a Wind Powered Boat?**, pages 6-7, can be youth lead and supports the Academic Support, Mentoring and Intervention Services Area.

Community Service / Service Learning Opportunities

Hold a wind energy learning day for CYS Services parents and guests.

Invite a local weather person to talk about wind and wind currents then follow-up with a kite flying event.

Help senior citizens winterize their homes by making draft dodgers or helping weather strip their windows to keep wind from creating a draft.

