

Science, Engineering & Technology - Department H

Division 900 –Physics/Power of Wind (Energy)

This category provides 4-H'ers a way to present their ideas about renewable energy resources. Through participation in this category 4-H'ers will learn more about physics, friction, energy, and elasticity. In addition, participants will make a display to go along with their findings. For more resources and materials in this category refer to the resource section at the bottom of the page. For help getting started with this project contact your county 4-H office.

Rules

1. The name and county of each exhibitor should appear separately on the back of each board, poster or article and on the front cover of the notebooks so owner of the exhibit may be identified if the entry tag is separated.
2. Reports should be written using the scientific method whenever possible (Background, the Question or hypothesis, what you plan to do and what you did, Method used and observations, Results: what you learned. All reports should be computer generated and enclosed in a clear plastic cover. The reports should be attached securely to the display.
3. Posters can be any size up to 28" by 22" when ready for display. Example: tri fold poster boards are not 28" by 22" when fully open for display.

For General Rules [click here](#)

Eligibility

All static exhibits must have received a purple ribbon at the county fair to advance to the State Fair.

Scoresheets, Forms, and Contest Study Materials

Scoresheets, forms, contest study materials, and additional resources can be found at <https://go.unl.edu/ne4hphysics-powerofwind>.

Special Awards

Premier 4-H Science Award is available in this area. Please see [click here](#) for more details.

Divisions

- | | |
|----------------|--|
| CLASS 1 | Create and Compare Energy Resources Poster (SF307)
Poster should explore 2 alternative/renewable energy resources. Compare and contrast the 2 resources including two of the following information: amount of energy created, costs of production, usability of the energy, pros/cons of environmental impacts, etc. Posters can be any size up to 28" by 22." |
| CLASS 2 | Experiment Notebook (SF305) |

Notebook will explore the scientific method involving alternative/renewable energy sources. Information required. 1.) Hypothesis 2.) Research 3.) Experiment 4.) Measure 5.) Report or Redefine Hypothesis.

CLASS 3

Solar as Energy Display (SF308)

Item should be the original design of the 4-Her. Include the item, or a picture if item is in excess of 6' tall or 2' X 2'. Include a notebook of why the item was designed and how it harnesses the power of the sun. Examples include solar ovens, solar panels, etc.

CLASS 4

Water as Energy Display (SF308)

Item should be the original design of the 4-Her. Include the item, or a picture if item is in excess of 6' tall or 2' X 2'. Include a notebook of why the item was designed and how it harnesses the power of water.

CLASS 5

Wind as Energy Display (SF308)

Item should be the original design of the 4-Her. Include the item, or a picture if item is in excess of 6' tall or 2' X 2'. Include a notebook of why the item was designed and how it harnesses the power of wind.

CLASS 6

Other Nebraska Alternative Energy (SF306)

Notebook should explore Nebraska an alternative energy source besides wind, water, and solar power. Include information on type of power chosen, infrastructure for distribution, what resources are needed to create this alternative resource, cost of production, and potential uses of bio-products.

Resources

4-Wheelin' Physics Fun

Learn basic principles of physics, such as friction, energy, elasticity; Do experiments with a radio-controlled pickup

URL: https://4hcurriculum.unl.edu/index.php/main/program_project/133

The Power of Wind

Learn about wind and its uses; Design, create, build and test a wind-powered device; Explore wind as a potential energy source in the community

URL: https://4hcurriculum.unl.edu/index.php/main/program_project/134

Renewable Energy

United States Department of Energy: <https://www.energy.gov/clean-energy>

U.S Energy Information Administration: <https://www.eia.gov/energyexplained/renewable-sources/>

Natural Resources Defense Council: <https://www.nrdc.org/stories/renewable-energy-clean-facts>