Energy

Department H, Division 900

Superintendent – Ashtyn Vivion

This category provides 4-Hers a way to present their ideas about renewable energy resources. Through participation in this category 4-Hers 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. All static exhibits must have received a purple ribbon at the county fair to advance to the State Fair.

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

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.

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Renewable Energy Resources:

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

H900001* **Create and Compare Energy Resources Poster** (SF307) – Poster should explore 2 alternative/renewable energy sources. 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" x 22".

H900002* **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.

H900003* **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 wind. Examples include solar ovens, solar panels, etc.

H900004* **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.

H900005* **Wind as Energy Display** (SF308) - Item should be the original design of the 4-Her. Include the item or a picture, if the 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.

H900006* **Other Nebraska Alternative Energy** (SF306) – Notebook should explore Nebraska as 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.

*State Fair eligible