

STEM ENERGY (DEPARTMENT H)

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.

Each 4-H/FFA exhibitor may enter up to 3 **different** items in each class.

GENERAL INFORMATION - 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 exhibit may be identified if the entry tag is separated from the exhibit.

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.

Posters can be any size up to 28" x 22" when ready for display. Example: tri fold poster boards are not 28" x 22" when fully open for display.

ENERGY - DIVISION 900

Class:

1. *CREATE AND COMPARE ENERGY RESOURCES POSTER - 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" x 22."

2. *EXPERIMENT NOTEBOOK – 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.

3. *SOLAR AS ENERGY DISPLAY/POSTER – Item should be the original design of the 4-H'er. 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.

4. *WATER AS ENERGY DISPLAY/POSTER – Item should be the original design of the 4-H'er. 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.

5. *WIND AS ENERGY DISPLAY/POSTER - Item should be the original design of the 4-H'er. 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.

6. *OTHER NEBRASKA ALTERNATIVE ENERGY – 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. Examples include geothermal, biomass, ethanol, bio-diesel, methane reactors, etc.