CLASS 10 **Careers Interview –** Interview someone who is working in a geospatial field and research that career. Interviews can either be written or in a multimedia format (CD/DVD). Written interviews should be in a notebook. Written reports should be three to five pages, double-spaced,12-point font, and 1" margins. Multimedia reports should be between three and five minutes in length.

POWER OF WIND

POWER OF WIND RULES

1. **GENERAL RULES –** See GENERAL RULES – SCIENCE, ENGINEERING & TECHNOLOGY
2. **TOP EXHIBIT –** A top exhibit will be selected from those exhibits receiving purple ribbons in the Power of Wind division.
3. **MANUALS –** Printed materials are available from the Johnson County Extension Office for all currently enrolled 4-H members in Johnson County.

DEPARTMENT H **DIVISION 900** **POWER OF WIND**

PREMIUM **Purple** $2.50 **Blue** $2.00 **Red** $1.50 **White** $1.00

CLASS 1 **Create and Compare Energy Resources Poster –** Poser should explore two alternative/renewable energy resources. Compare and contrast the two resources including information on two of the following: amount of energy created, costs of production, usability of the energy, pros/cons, environmental impacts, etc. Posters can be any size up to 28" x 28".

CLASS 2 **Experiment Notebook –** Notebook will explore the scientific method involving alternative/renewable energy sources. Information required: hypothesis, research, experiment, measurements, report or redefined hypothesis.

CLASS 3 **Solar as Energy Display –** Items should be the original design of the 4-H exhibitor. Include the item, or a picture if the item is in excess of 6' tall or 2' x2'. 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 –** Items should be the original design of the 4-H exhibitor. Include the item, or a picture if the item is in excess of 6' tall or 2' x2'. Include a notebook of why the item was designed and how it harnesses the power of the water.

CLASS 5 **Wind as Energy Display –** Items should be the original design of the 4-H exhibitor. Include the item, or a picture if the item is in excess of 6' tall or 2' x2'. Include a notebook of why the item was designed and how it harnesses the power of the wind.

CLASS 6 **Other Nebraska Alternative Energy –** Notebook should explore Nebraska's alternative energy sources besides: wind, water, and solar power. Include information on type of power chosen, infrastructure for distribution, what resources are needed to creat this alternative resource, cost of production, and potential use of bio-products.

WOODWORKING

WOODWORKING RULES

1. **GENERAL RULES –** See GENERAL RULES – SCIENCE, ENGINEERING & TECHNOLOGY
2. **ENTRY LIMITS –** 4-H members are allowed entries in only ONE UNIT of competition. 4-H members may only enter ONE EXHIBIT per class.
3. **EXHIBIT REQUIREMENTS – ALL** articles exhibited **MUST** include a plan stating dimensions and other critical instructions a builder would need to know to construct the project. Plans may include narrative instructions in addition to the dimension drawings. Part of the score depends on how well the project matches the plans. If plans are modified, the changes from the original need to be noted on the plans. All plans used for making the article must be securely attached to the project in a clear plastic cover. Any exhibits not having the required information will be lowered a ribbon placing.
4. **RECYCLED WOODWORKING DISPLAY -** Exhibit must include the woodworking plan and a minimum one-page report of how the engineering design process was used to develop the woodworking plan.
   Engineering Design Process
   1) State the problem (Why did you need this item?)
   2) Generate possible solutions (How have others solved the problem? What other alternatives or designs were considered?)
   3) Select a solution (How does your solution compare on the basis of cost, availability, and functionality?)
   4) Build the item (What was your woodworking plan, and what processes did you use to build your item?)
   5) Reason for article finish (What type of finish? How did you finish? Why did you choose this finish?)
   6) Evaluate (How does your item solve the original need?)
   7) Present results (How would you do this better next time?)
5. **TOP EXHIBIT –** A top exhibit will be selected from those exhibits receiving purple ribbons in the woodworking division.
6. **MANUALS –** Printed materials are available from the Johnson County Extension Office for all currently enrolled 4-H members in Johnson County.

DEPARTMENT H **DIVISION 911** **WOODWORKING**

PREMIUM **Purple** $2.50 **Blue** $2.00 **Red** $1.50 **White** $1.00

WOODWORKING – UNIT 1

CLASS 910 **Woodworking Article –** Items made using skills learned in the *Measuring Up* manual (examples include: recipe holder, stilts, or other skill appropriate item). Items MUST be entered with construction plans (see above).

CLASS 920 **Woodworking Display –** Display exemplifying one of the principles learned in the *Measuring Up* project.

CLASS 930 **Recycled Woodworking Article -** Article made from recycled, reclaimed or composite wood. Article must be sanded and sealed and utilize one or more woodworking techniques learned in the *Measuring Up* project. Exhibit must include the woodworking plan and a minimum one-page report of how the engineering design process was used to develop the woodworking plan.

CLASS 940 **Other Item –** Other item displaying the knowledge gained in this project.

WOODWORKING – UNIT 2

CLASS 950 **Woodworking Article –** Items made using skills learned in the *Making the Cut* manual (examples include: birdhouse, footstool, napkin or letter holder, or other skill appropriate item). Items MUST be entered with construction plans (see above).

CLASS 960 **Woodworking Display –** Display exemplifying one of the principles learned in the *Making the Cut* project.

CLASS 970 **Recycled Woodworking Article -** Article made from recycled, reclaimed or composite wood. Article must be sanded and sealed and utilize one or more woodworking techniques learned in the *Making the Cut* project. Exhibit must include the woodworking plan and a minimum one-page report of how the engineering design process was used to develop the woodworking plan.

CLASS 980 **Other Item –** Other item displaying the knowledge gained in this project.

WOODWORKING – UNIT 3

CLASS 1 **Woodworking Article –** Items made using either joints, hinges, dowels, or a dado joining and other skills learned in the *Nailing It Together* manual (examples include: bookcase, coffee table, end table, or other skill appropriate item). Items are required to be appropriately finished. Items MUST be entered with construction plans (see above).