STEM - WOODWORKING

In this category 4-H'ers have the opportunity to create exhibits about varying levels of woodworking. In addition, participants can also create informational exhibits about their woodworking projects. Through involvement in STEM Woodworking, 4-H'ers will be better educated about the topic and better their woodworking skills.

- 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.
- REQUIREMENTS: All articles exhibited must include a plan (with drawings or sketch or blueprints) stating dimensions and other critical instructions a builder would need to know to build the project, and 4-H'er's name and county.
- Plans may include narrative instructions in addition to the dimension drawings and include any alterations to the original plan. Part of the score depends on how well the project matches the plans. If the 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 and protected by a clear plastic cover.
- 4-H'ers must be in Unit 3 or Unit 4 for the exhibit to be considered for State Fair.
- All projects must have appropriate finish. If the project (i.e. ,picnic tables, wishing wells, swings, chairs, bridges, doghouses, etc.), is designed to be used outside, it will be displayed outside at State Fair.
- **All outside projects MUST have entry tag and supporting information placed in a protective bag to prevent damage from weather events such as rain and be ATTACHED to projects with string, zip ties, etc.**

Scoresheets, forms, contest study materials, and additional resources can be found at https://go.unl.edu/ne4hwoodworking

PREMIUMS: Purple-$3.00; Blue-$2.00; Red-$1.50; White-$1.00

DIVISION 910 - WOODWORKING UNIT I & II

- Entries are not eligible for State Fair.

MEASURING IT UP – UNIT I

H910001 **WOODWORKING ARTICLE** – Item made using skills learned in the Measuring Up Project. Examples include: flower box, letter or napkin holder, or picture frame.

H910002 **WOODWORKING DISPLAY** – Display exemplifying one of the principles learned in the Measuring Up Project. Examples include: butt joint, measuring, sanding.

MAKING THE CUT – UNIT II

H910003 **WOODWORKING ARTICLE** – Item made using skills learned in the Making The Cut Project. Examples include: letter or napkin holder, birdhouse, footstool.

H910004 **WOODWORKING DISPLAY** – Display exemplifying one of the principles learned in the Making The Cut Project. Examples include: wood types, angle cutting, liquid finisher.

H910005 **OTHER WOODWORKING ARTICLE** - Item made using skills learned in Unit I or Unit II.

DIVISION 911 - WOODWORKING UNITS III & IV

NAILING IT TOGETHER – UNIT III

H911001* **WOODWORKING ARTICLE** – Item should be made using either joints, hinges, dowels, or a dado joining made using skills learned in the Nailing It Together Manual. Item is required to be appropriately finished. Examples include: bookcase, coffee table or end table. (SF91)

H911002 **WOODWORKING DISPLAY** – Display exemplifying one of the principles learned in the Nailing It Together Project. Examples include: measuring angles, wood lamination, and joint types.

H911003* **RECYCLED WOODWORKING DISPLAY** - Article made from recycled, reclaimed or composite wood. Article must be appropriately finished and/or sealed and utilize one or more woodworking techniques from page 2 of the Unit 3 manual. 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. (SF95)

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 or why 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?)

H911004* **COMPOSITE WOOD PROJEC**T - 60% of the project must be wood and 40% made from other materials such as metal, rubber, resin, etc. All plans and plan alterations must be attached to the article. Protect plans with a cover. If project is designed to be outside, it is required to have appropriate outdoor finish because project may be displayed outside. (SF284)

H911005* **OUTDOOR WOOD PROJECT made with TREATED WOOD** - Treated wood projects DO NOT have to have a finished coating. All plans and plan alterations must be attached to the article. Protect plans with a cover if project is designed to be outside. Examples include: picnic tables, planters, outdoor furniture, etc. (SF97)

H911006* **WOOD PROJECTS CREATED ON A TURNING LATHE** – Article is the object created from spinning wood on a turning lathe. Article must be appropriately finished and/or sealed. Exhibit must include plans detailing design and process of completion, any changes made to the design, details of finishing techniques, and other relevant information about the article. Must include a description of tools used. (SF)

FINISHING UP – UNIT IV

H911007* **WOODWORKING ARTICLE** – Item made using skills learned in the Finishing It Up Project. Examples include: dovetailing, making a pen using lathe, overlays, using a router, etc. Item is required to be appropriately finished. (SF91)

H911008* **RECYCLED WOODWORKING DISPLAY** - Article made from recycled, reclaimed or composite wood. Article must be appropriately finished **and/or** sealed and utilize one or more woodworking techniques from page 2 of the Unit 4 manual. Exhibit must include the woodworking plan and a minimum one-page report of how the design and engineering process was used to develop the woodworking plan. (SF91)
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. Reason for article finish (What type of finish, how did you finish or why you choose this finish?)
5. Build the item (What was your woodworking plan, and what processes did you use to build your item?)
6. Evaluate (How does your item solve the original need?)
7. Present results (How would you do this better next time?)