

Science, Engineering & Technology - Department H

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 this category 4-H'ers will be better educated about the topic and better their woodworking skills. For more resources and materials in this category refer to the resource section at the bottom of the page.

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 from the exhibit.
2. Several classes require a display board which should be a height of 24 inches and not to exceed 1/4-inch thickness. A height of 24 7/8 inches is acceptable to allow for the saw kerf (width) if two 24 inch boards are cut from one end of a 4 foot by 8-foot sheet of plywood. Nothing should be mounted within 3/4 inch of the top or bottom of the board. (Example: Woodworking & Electricity.)
3. Fabricated board such as plywood, composition board, or particle-type lumber may be used for demonstration displays.
4. Demonstration boards should be sanded and finished to improve their appearance. The finish on a demonstration board will be judged as a woodworking exhibit.
5. Demonstration boards should include an overall title for the display, plus other necessary labeling.
6. 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.

The ability to build objects as designed by another person is an important life skill. Professional woodworkers often are hired to build objects to exacting specifications as laid out in a written plan. Requirements: All articles exhibited must include a plan stating dimensions and other critical instructions a builder would need to know to build 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 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.

Science, Engineering & Technology - Department H
Division 912 – Beginning Woodworking
MEASURING UP – UNIT 1

* The following 900 numbered classes are not eligible for State Fair consideration*

- CLASS 901 LEVEL 1 WOODWORKING ARTICLE:**
Item made using skills learned in the Measuring Up Project Guide. Examples include: recipe holder, stilts or other skill level appropriate item. All articles exhibited must include a construction plan.
- CLASS 902 ADDITIONAL LEVEL 1 WOODWORKING ARTICLE:**
Item made using skills learned in the Measuring Up Project Guide. Examples include: recipe holder, stilts or other skill level appropriate item. All articles exhibited must include a construction plan.

Science, Engineering & Technology - Department H
Division 913 – Intermediate Woodworking
MAKING THE CUT – LEVEL 2

* The following 900 numbered classes are not eligible for State Fair consideration*

- CLASS 901 LEVEL 2 WOODWORKING ARTICLE**
Item made using skills learned in the Making the Cut project guide. Examples include: birdhouse, foot stool, and napkin or letter holder. Items should be entered with construction plans.
- CLASS 902 ADDITIONAL LEVEL 2 WOODWORKING ARTICLE**
Item made using skills learned in the Making the Cut project guide. Examples include: birdhouse, foot stool, and napkin or letter holder. Items should be entered with construction plans.

Science, Engineering & Technology - Department H
Division 911 – Advanced Woodworking

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 the state fair.

Rules

1. The ability to build objects as designed by another person is an important life skill. Professional woodworkers often are hired to build objects to exacting specifications as laid out in a written plan.
2. **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 how to build the project. Plans may include narrative instructions in addition to the dimension drawings and include any alternations 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.
3. 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.
4. 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.

For NE 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.

NAILING IT TOGETHER – UNIT 3

- CLASS 1 WOODWORKING ARTICLE (SF91)**
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.
- CLASS 2 WOODWORKING DISPLAY (SF91)**
Display exemplifying one of the principles learned in the Nailing it Together Project. Examples include: measuring angles, wood lamination and joint types.
- CLASS 3 RECYCLED WOODWORKING DISPLAY (SF95)**
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.
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 chose the finish).
- 6) Evaluate (How does your item solve the original need?)
- 7) Present results (How would you do this better next time?)

CLASS 4

COMPOSITE WOODWORKING ARTICLE (SF96)

60% of the project must be wood and 40% made from other materials such as metal, rubber, resin, etc. All plans and plan alternations 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.

CLASS 5

Outdoor Wood Project Made With Treated Wood (SF97)

Treated wood projects DO NOT have to have a finished coating. All plans and plan alternations 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.

FINISHING UP – UNIT 4

CLASS 6

WOODWORKING ARTICLE (SF91)

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.

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.

CLASS 7

WOODWORKING DISPLAY (SF91)

Display exemplifying one of the principles learned in the Finishing It Up Project. Examples include: career opportunities, types of finishes, or dovetailing.

CLASS 8

RECYCLED WOODWORKING DISPLAY (SF91)

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.

- 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?)

Resources

Woodworking Wonders 1

Develop skills such as measuring, squaring and cutting a board, driving nails, and using clamps and screws; Build a picture frame, a letter holder, a box, or an airplane

URL: https://4hcurriculum.unl.edu/index.php/main/program_project/144

Woodworking Wonders 2

Measure , cut, sand, drill, and use advanced hand and power tools; Apply paint and use bolts and staples; Build a sawhorse, birdhouse, tool box, or a stool

URL: https://4hcurriculum.unl.edu/index.php/main/program_project/145

Woodworking Wonders 3

Practice measuring angles, cutting dado and rabbet joints; Use a circular saw, a table saw, and a radial arm saw; Sand and stain wood

URL: https://4hcurriculum.unl.edu/index.php/main/program_project/146

Woodworking Wonders 4

URL: https://4hcurriculum.unl.edu/index.php/main/program_project/205