SCIENCE, ENGINEERING & TECHNOLOGY
STEM (ENGINEERING)
WOODWORKING

Unit 1 & 2 Scoresheet SF91, SF239

In this division 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 division 4-H'ers will be better educated about the topic and better their woodworking skills.

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. **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 and 4-H'ers name & 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.
3. 4-H'ers must be in Unit 3 or Unit 4 for the exhibit to be considered for the State Fair. All projects must have an 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.
5. **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.**

Unit 1 is designed to 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.

Unit 2 is designed to learn how to measure, cut, sand, drill, and use advanced hand and power tools; apply paint and use bolts and staples. Build a sawhorse, birdhouse, toolbox, or a stool.

Unit 3 is to practice measuring angles, cutting dado and rabbet joints, using a circular saw, a table saw, and a radial arm saw; and how to sand and stain wood.

Dept H Division 911

Classes- Units 1 & 2

11* Article as Shown in Woodworking 1 Manual- Item made using skills learned in the Measuring Up manual- 4-H 6875. Examples include recipe holder, stilts, or other skill level appropriate item. Items should be entered with construction plans. Or comparable items using hand tools.

12* Article as Shown in Woodworking 2 Manual- Item made using skills learned in the Making the Cut manual- 4-H 6876. Examples include birdhouse, foot stool, napkin, or letter holder. Items should be entered with construction plans. Or comparable items using power hand electric jig saw, power drill, and/or oscillating sander.

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Classes- Unit 3

1 Woodworking Article- Scoresheet SF91- Item should be made using either joints, hinges, dowels, or a dado joining made using skills learned in the Nailing it Together manual. The item is required to be appropriately finished. Examples include bookcase, coffee table or end table.

3 Recycled Woodworking Display- Scoresheet 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. The 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 based on 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?)

4 Composite Wood Project- Scoresheet SF284- 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 a project is designed to be outside, it is required to have an appropriate outdoor finish because project may be displayed outside.

5 Outdoor Wood Project made with Treated Wood- Scoresheet SF97- 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.

6 **Wood Project Created on a Turning Lathe-** Scoresheet SF??- 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.

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Classes- Unit 4

7 **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. The item is required to be appropriately finished.

8 **Recycled Woodworking Display-** Scoresheet 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. The 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 based on cost, availability, and functionality?)
4) Reason for article finish. (What type of finish, how did you finish or why did 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?)