



2017-2018 Wood Science Judging

Decision making skills and the ability to clearly express one's self are great attributes in many careers today. The 4-H judging teaching technique can help members develop these skills. Judging is making a decision and then telling why you made it. Through this experience youth will learn to appreciate standards, to observe closely and to develop their reasoning ability. 4-Hers will learn about a variety of wood science topics including equipment, safe practices, skills and workmanship. The top ten senior participants from each county are eligible to participate in the state contest. Should ten seniors not be available, beginners may be named to the County Team.

Resources:

- Woodworking Wonders 4-H project series. Beginners Levels 1-2, Seniors Levels 1-4
- <http://www.wood-database.com/#h>
- <http://www.hardwaresource.com/hinge-resource-center/hinge-information/hinge-history/overview-of-modern-hinges/>

A. Beginner

1. Identify 5 of the 13 tools listed in *Measuring Up*, 4-H Wood Science Project Manual Level 1 page 8.
2. Be able to identify at least one safety practice with the 13 listed tools.
3. Identify lumber parts (Level 1 pg. 14) and the parts of a hammer (Level 1 pg. 17.)
4. From a selection of wood samples, identify each sample as either hard or soft wood (Level 1 pg.12 and Level 2 pg. 16.)
5. Demonstrate one or more of the following skills:
 - a. Countersink a nail (level 1 pg. 18)
 - b. Measure a piece of wood using the provided measuring tool (level 1 pg. 14 & 16.)
 - c. Screw two pieces of wood together (Level 2 pg. 18 & 19.)
6. Be familiar with the following terms in the glossaries of Level 1 pg. 36 and Level 2 pg. 35.

Brace and Bit
Butt Joint
Chisel
GFCI
Grain

Knots
Miter Box
Plans
Protractor
Safety Glasses

Saw
Screw
Screw Driver
Tack Cloth
Wood File

7. Rank a class of 4 finished or unfinished items considering workmanship, appearance, and suitability & quality of the finish.



B. Senior

1. Given the list of tools found in Levels 1-4, identify and provide one safety practice for each.
2. Identify the Hinges and clamps listed below and their uses

Adjustable Bar

Gate Hinge

Pipe Bar Clamp

Butt Hinge

Handscrew clamp

Strap Hinge

C-clamp

Hasp

T-Hinge

3. Identify the following Edge jointing

Box

Dowel

Spline

Dado

Miter

Tongue-and-Groove

Dovetail

Plain Butt

4. Be familiar with the terms in the glossary of Levels 1-4.

5. Wood Identification (Resource: <http://www.wood-database.com/#h>)

Birch (Paper)

Mahogany

Rosewood

Cedar (Eastern Red)

(Honduran)

(Brazilian)

Cherry (Black)

Maple (Red)

Teak

Ebony (African)

Oak (Red)

Walnut (Black)

Hickory (Bitternut)

Poplar

6. Demonstrate one or more of the following skills:

- a. From a set of plans, identify the tools and supplies needed to construct the item
- b. Measure, mark and cut wood as directed
- c. Select the correct type and grade of sandpaper and demonstrate how to correctly sand a given object
- d. Make an angled cut

7. Rank one class of 4 finished or unfinished items considering workmanship, appearance, and suitability & quality of finish. Provide written reasons for your placings.

Wood Training Box - each county has a wood science-training box with samples of woods, joints, fasteners and more.

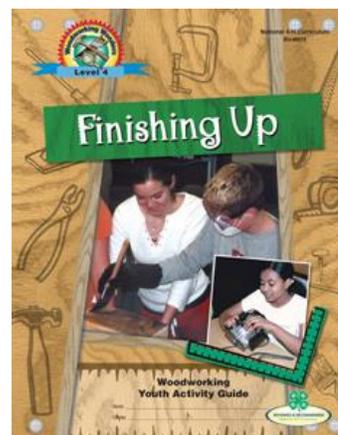
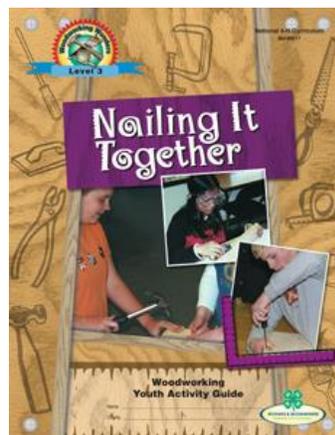
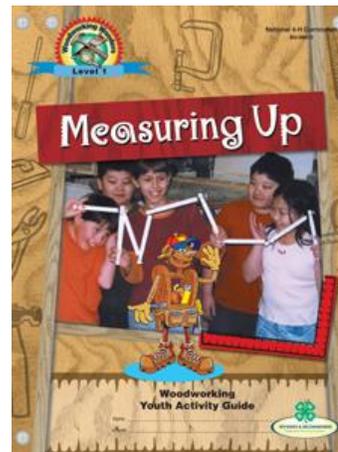
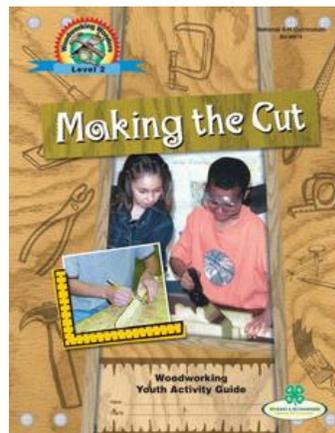
Other Training Tips

- Field trip to local hardware and building supply stores.
- Trip to furniture stores to view finished and unfinished items.
- Visit web sites listed in the back of the project manuals
- Read woodworking magazines.

Don't Forget!

Each participant should bring a pencil, clipboard and paper to the contest.

Project Books:





Bar Clamp: These clamps were designed especially for clamping large projects, furniture projects, tables, etc... Probably the most common clamp, the bar clamp will complete 90% of your woodworking projects.

These puppies aren't cheap, but they are extremely versatile and you will certainly get some mileage out of them.



C-Clamp: Ideal for most general woodworking and metalworking applications. I've used these clamps more often than not to clamp something to a table to keep it from moving.

C-Clamps are limited in their use because of their size, but they do offer a deep "C" shape that allows for a little room to maneuver.



Pipe Bar Clamp: Extremely versatile clamp attached to whatever length pipe you have for very large projects, and other general uses. Pipe clamps are torque machines. There is essentially no limit to how large of an object you can clamp with the pipe clamp. You're only limited by how much pipe you're willing to buy.



Handscrew

Clamp: the wood jaws of a handscrew won't mar the surface of a workpiece. More importantly, the jaws provide even clamping pressure to prevent glued-up parts from twisting out of alignment. Of course, there are many other clamping operations that make a handscrew invaluable around the shop. For example, its deep reach makes it ideal for clamping a workpiece to a bench. It provides an extra hand for safely machining small parts. And the jaws of a handscrew have the unique ability to be angled, which is essential for clamping workpieces that don't have parallel faces.

