



Spark Makerspace Woodshop Class: Cutting Boards

Students will build a wooden cutting board. Students will start with mixed strips of wood, and will glue, flatten, shape, groove, and finish the cutting board. This is a two-session class, and at the end of the second class students will take their project home.

Materials Required: (per board)

- Approximately 1.5 board feet of mixed hardwoods, cut into strips
- Wood glue
- Food-grade mineral oil

Tools Used:

- Clamps and Cauls
- Heavy Duty Scraper
- Planer
- Table Saw (with sled)
- Bandsaw or Jigsaw (optional)
- Routers (portable and table)
- Sanders (fixed and portable)

What kind of wood should be used in a cutting board?

For food safety, cutting boards should be made of dense, non-toxic woods with low porosity. Softwoods, such as pine or fir, will not stand up to regular use. Some woods, such as rosewood or sassafras, can be sources of allergen or irritants. Woods such as red oak or ash have large open pores, which can collect bacteria if the oil finish is not diligently maintained. When in doubt, check a reliable wood toxicity chart before using it in a cutting board.

The best woods for cutting boards are maple, walnut, beech, and fruitwoods such as cherry. Maple is particularly popular in North America, as it is strong, dense, and reasonably priced. The board you build in this Spark class will be primarily maple, with walnut and cherry accent pieces, resulting in an attractive cutting board which can stand up to daily use.

What kind of finish should be put on a cutting board?

The best finish for a wood cutting board is food-grade mineral oil, or a commercial product specifically intended for cutting boards. Beeswax is sometimes added to the oil to give the board a polished finish, but may impart a slight flavor to foods during initial use. Vegetable oils are sometimes suggested, but they may become rancid.

To oil a cutting board for the first time, a clean rag or paper towel should be used to thoroughly soak the entire board. The oil should be allowed to absorb overnight. This treatment should be repeated at least two more times before first use of the cutting board.

After use, the board should be washed gently with soap and water, and stood on an edge to dry. The board should be re-oiled monthly, or whenever the surface of the wood feels dry.

Class Outline:

Session #1 (3 hours) : Introduction, board glue-up, tool overview

Session #2 (5 hours) : Board scraping, planing, trimming, shaping, routing, and sanding. Students will be given a finishing oil to take home with them

Session 1: Glue-up

1. Choose several pieces of wood, each approximately 18 inches long and 1-1/8" tall, of varying thickness.
2. Line pieces up until the pattern is approximately 12" x 18" x 1-1/8".
3. Glue pieces into single board
 - a. Cover cauls with packing tape to prevent gluing to cutting board
 - b. Set boards on cauls
 - c. Spread glue thinly and evenly on each flat face to be glued
 - d. Add clamping pads to outside faces
 - e. Clamp
 - i. Start with gentle clamping force, until all clamps are installed
 - ii. Tighten all clamps firmly
 - f. Let stand overnight

What the heck is a caul?

A caul, in woodworking, is a straight or slightly curved batten or board used to apply pressure to a glue joint. Straight ones are used in the cutting board class to help align the individual strips of the cutting board while the clamps are being set until the glue dries.

Session 2: Shaping

1. Using a heavy paint or glue scraper, scrape as much glue as possible off the surface of the cutting board.
 - a. Care should be taken to prevent damaging the surface of the wood whenever possible.
2. The cutting board should be run through the planer to clean both sides.
 - a. Make sure to flip the board between passes
 - b. Set the planer to take off enough material to ensure a clean surface. Attempts to remove very small amounts of material will result in the planer skipping off the surface of the wood, leaving ugly marks in lieu of a clean surface finish.
3. Trim the ends of the cutting board using the table saw and crosscut sled.
 - a. This will be done under the direct supervision of the instructor.
4. The corners of the cutting board should be shaped. A rounded corner is most common, but chamfered or "hollow" corners are also possible.
 - a. Corners can be trimmed on the bandsaw, with a portable jigsaw, or just sanded to round. During the class, the bandsaw and the bench sander will be available for shaping.

Session 2, Continued: Finishing

1. Round over the outside of the cutting board using the router table, and a bear-guided roundover bit.
 - a. Material should always be fed into the bit against the rotation.
2. If desired, a juice groove can be routed in the surface of the cutting board using a fixed-base portable router with a box cove router bit with guide bearing.
 - a. Use of a router jig is strongly recommended. An adjustable rectangular jig will be made available for class use.
 - b. The groove should be routed in several passes of increasing depth.
 - c. The router should be moved clockwise inside the router jig; this helps ensure the cutting action of the bit presses the guide bearing firmly against the jig.
 - d. The router base should be pressed firmly against the surface of the jig, to ensure the router is in a perfectly upright orientation.
3. Sand the entire cutting board to the desired finish.
 - a. Portable oscillating sanders should be used on all surfaces.
 - b. If the cutting board is to be used regularly, it is not necessary to take the surface to a completely smooth finish, as it will quickly accumulate knife marks
4. Food grade mineral oil will be provided to finish the cutting board at home
 - a. For time and cleanliness reasons, boards will not be finished during class time. See the first page of this handout for oiling instruction.

A word on End Grain Cutting Boards

End grain cutting boards are made from a large number of short pieces of wood, stood up and glued together. This results in the work surface of the cutting board being the end of the wood grain. It is often considered the ideal orientation for knife use, as the knife will slide down into the grain rather than cut across it, and is commonly believed to keep the knife sharper longer.

End grain cutting boards may be made at Spark, **BUT MAY NOT BE PASSED THROUGH THE PLANER**. Attempting to do so may result in the planer ripping the cutting board apart, and sending wooden chunks in all directions at high velocity. This is bad for the planer as well as anyone unfortunate enough to be standing nearby.

The proper way to mill the top surface of an end grain cutting board is with a router sled, which Spark does not currently have. Please talk to one of the woodshop leads if you would like to assist in building one.

Spark members with approved shop access may use the shop to create items, like those described in this tutorial, at any time. If you have any question on methods, materials, or tools, please contact the Spark

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