Step Stool

Projects · https://thejoinery.club/docs/project-step-stool/

Four parts, three hours, one afternoon of skills. The first thing you will build entirely on your own.

Why this one

Small enough to finish, useful enough to keep, and forgiving enough that a mistake costs you a board instead of a weekend. Four parts — a top, two tapered legs, and a stretcher tying them together — and every one of them teaches something you will use on everything that follows.

The legs get a half-circle arch cut into the bottom edge. That arch is not decoration: it turns two wide feet into four narrow ones, which is what lets the stool sit flat on a floor that is not flat.



> This is a prototype. When I do a project for the first time, I like to think of it as a prototype — I’m practicing the skills to produce the real piece once I have it all figured out. It doesn’t need to be perfect. Take the pressure off and enjoy the process. You may be impressed with what you turn out.
>
> *Steven*

Skills you will use

- Milling rough lumber to consistent thickness
- Crosscutting to length and ripping to width

- Cutting a repeatable angled taper at the miter saw
- Laying out a curve with a compass or circle template
- Bandsaw curve cutting, including relief cuts
- Fairing a curve on the spindle sander
- Router edge treatment with a round-over bit
- Progressive sanding to a finish-ready surface
- Glue-up, clamping, and checking for square
- Pilot drilling and nailing

Tools

Mitre Saw · Jointer · SawStop Table Saw · Band Saw · Spindle Sander · Router Table · Drill Press

Materials

About 2.5 board feet of 4/4 hardwood — small enough that offcuts from another project will often cover it. All four parts can come from a single board 8″ wide and 40″ long, which is a convenient thing to ask for at the lumber rack. Plus eight 1″ cut nails, yellow glue, and sandpaper in 120, 150, and 220.

The drawings were modeled in cherry, but nothing about the design is species-specific. Maple, walnut, ash, and poplar all work. Pick something you like looking at.

Time

Ten short phases, about three hours of shop time. Finished size is 16″ long, 8″ wide, 8¾″ tall.

Where people get stuck

- **Mixing up the parts.** 8″, 12″, and 16″ are easy to confuse with three of them on the bench. Label as you cut — a piece of tape saying “Leg A” prevents a lot of confusion at glue-up.
- **Legs that do not match.** Cut them back to back at every setting: same planer pass, same fence, same miter angle, same spindle.
- **A stool that rocks at dry fit.** Find out why *before* you glue. It is almost always a leg out of square to the top — trivial to fix now, impossible to fix later.

- **Sanding after assembly.** Sand before. Always.
- **Skipping test cuts.** Router depth, miter angle, fence position — test every new setup on scrap. Every time.

Download the companion

Download the Step Stool companion (PDF)

Stuck?

Open office hours run Wednesdays and Saturdays. Bring the project, bring the board, bring the question. Good one to bring if the arch is fighting you at the bandsaw.

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