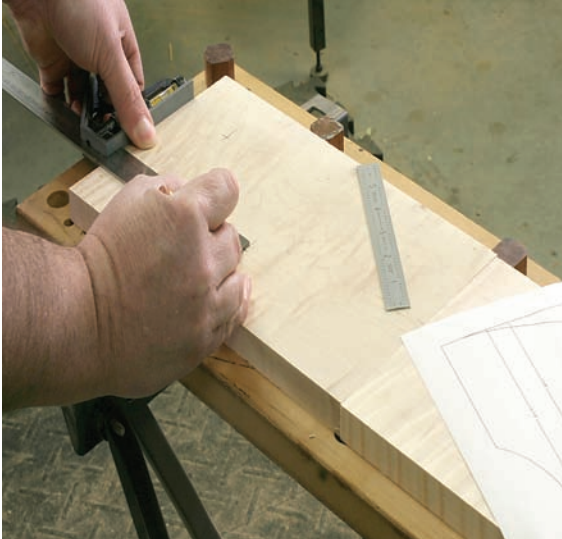
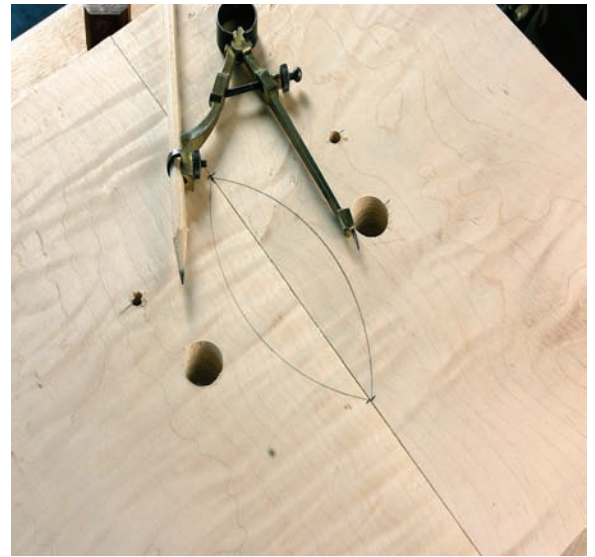


Begin the project by cutting the various pieces to size according to the cut sheet provided with the article or found in the SketchUp model.



7532: Accurate layout is essential.

With your stool sides cut to size, carefully mark the hole locations onto the exterior face and make sure you have mirrored sides when complete. Drill the holes from the exterior face inward to keep any ragged edges on the inside of the project. It's best to place the workpiece on a sacrificial backer to help reduce any tearout.



7539: Arcs rule.

After the holes are drilled, align the two sides and layout the arcs at the floor's edge. Locate the sizes from the plan, set your compass to an appropriate radius - a radius that is pleasing to your eye - then lay in the arcs. With the two pieces lying side by side, it works best to set your compass point on one side in order to draw the arc on the opposing side. Use a jigsaw to cut the two small arcs, then smooth the area with a file.



7542: Arcs rule - part two.

To find and draw the arcs for the front and back of the stool sides, align the side with the edge of your bench then clamp the workpiece to your bench so the side cannot shift while working. Next, clamp a thin strip just in front of the side as shown in the photo. Bend the strip until it lines up with the layout point from the plan. Flex the strip to adjust the bend of the arc. When you are satisfied with the bend, and there is enough material between the arc and the upper hole, mark the arc onto your side workpiece. This operation needs only to be completed once.

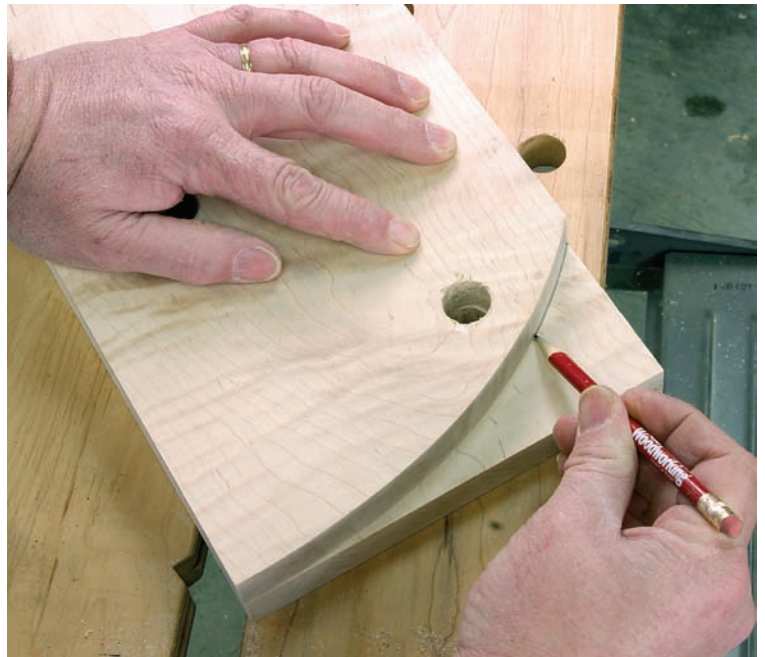


7544: Refine your bend.

Cut the arc with a jigsaw staying close to your line. Work slow and steady. Use a rasp or file to smooth the arc.

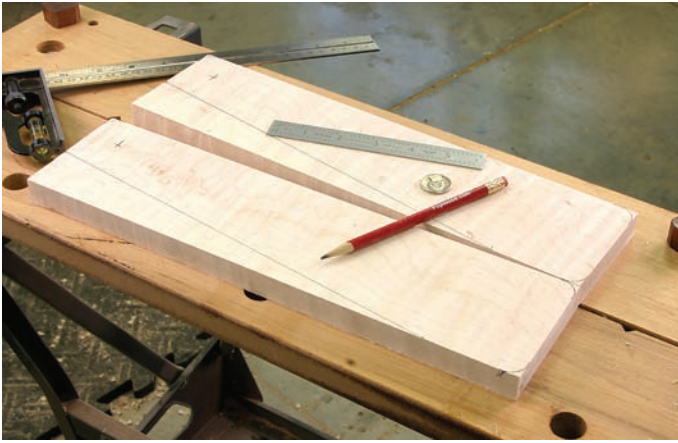
7546: The cut becomes your pattern.

Position the side with the smoothed arc to the opposing side then draw the arc on the second side. Because the sides are symmetrical, simply flip the shaped side and re-position it again to the opposite side. Trace the arc a second time to complete the layout of the second stool side.



7549: Quick shapes with a router.

While the first operation completed with your router might be to form or shape an edge, one of the most productive operations is pattern routing, or to replicate a shape based off a previously shaped piece. Here a pattern bit with a top-mounted bearing is used. The bearing rides against the pattern as an exact profile is formed in a second piece. To make the task easier, trim the workpiece close to the layout line (within an 1/8") using a jigsaw, then allow the router bit to form the final shape. The benefit is accuracy and speed of cut while excessive handwork is eliminated. Shape the two marked ends of the second stool side, then mark and shape the last end of the original side using the completed workpiece. If you wish to bypass the router, draw the arcs just as indicated then cut close to your lines with the jigsaw and shape the edges with your file.



7552: Strong arm the stool.

Place the cut-to-size support arms on the bench and lay-out the profile, including the rounded corners - a nickel is perfect layout tool for the corners. Again, drill the holes from the face side.

7553: Cut for design.

The sloped line on the bottom edge of the support arms is to lighten the look and add a bit of design to your project. Cut the lines and corners using a jigsaw then smooth your cuts with a file.



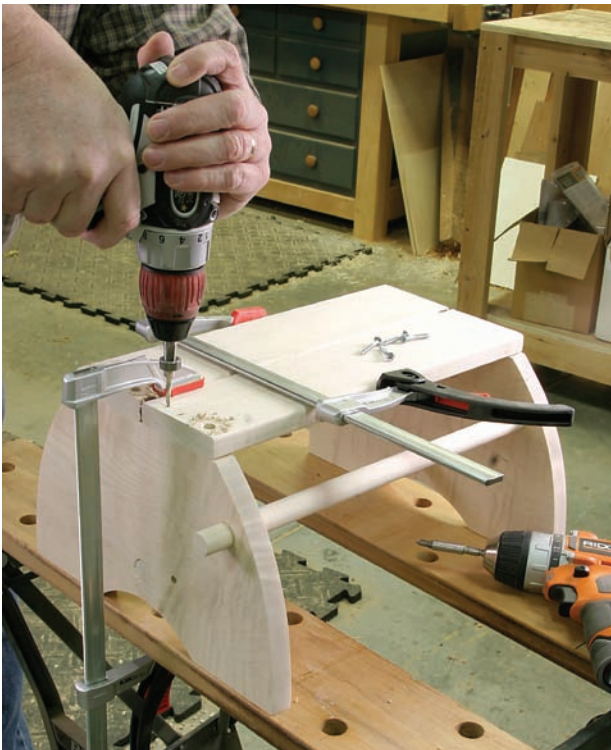
7558: More design work.

It's not imperative to round the edges of the step and seat pieces however, it softens the look of the stool. Also, any crisp edges are the first knocked off as the stool sees use. Use a handplane or sandpaper to slightly round the sharp edges.



7571: Assembly begins.

Sand all your pieces to #180 then position the dowels into the sides. Some persuasion might be necessary depending of the diameter of your dowels. The upper dowel extends through the sides by 3/4" to act as a stop when the step is flipped up to become the chair back. The bottom dowel is set flush with the outside face of the sides.



7573: Penny-spaced seat.

To keep everything spaced correctly as you attach the seat to the side assembly, clamp the two seat boards together with a penny slid between the two. Position the seat to the frame, then use a countersink before installing the screws (two #8 x 1-1/4" wood screws) that hold the seat tight. Place two screws per seat board end. The same process is used to attach the step boards to the support arms.

7577: Final fit-up.

Position the support arm assembly to the stool, slip a carriage bolt through the support arms and place a washer onto the bolt prior to it slipping through the stool - it's tricky to get this done, but the washer creates space between the wooden assemblies to keep the finish from being rubbed off. Complete the connection with a second washer and a nut on the inside of the stool sides.



7584: Covered & smoothed.

Each of the screw holes are filled with a plug then sanded smooth. I choose to plug the holes using a contrasting hardwood. You can do so as well, or if you plan to paint the stool, any material works fine.



2459: Security from a dowel pin.

While in step mode, the hinged assembly sets on the floor. But when the stool is in chair mode, the assembly rests against the upper dowel. To make sure that dowel doesn't slide out of position - potentially allowing the chair back to fall past it's location - pin the dowel from behind using a small piece of 1/8" dowel.

2460: Let the finish commence.

Most of the examples we could find of stools such as these are painted in flashy colors, but we decided to dye our stool and add a shellac topcoat. Step one is to brush or spray aniline dye onto the project. Completely soak the project with dye and keep all areas wet for five minutes - do not allow dry spots to appear. Wipe away any excess dye after time has elapsed, then allow the project to completely dry before moving on.



2461: Topcoat & enjoy.

You can apply the shellac with a rag, but I find it easier to spray on the finish using an aerosol can of shellac found at most hardware or home stores. Spray a couple coats, then when the shellac is dry, sand the piece thoroughly with #320-sandpaper, the black silicon-carbide kind. Add additional coats until you've built up a thick layer of topcoat (six or seven coats) then rub the entire stool with #0000 steel wool to remove the high sheen and soften the overall look of the stool. A layer of paste wax adds protection. Finally, assemble the two units and allow your wee one to enjoy the stool.