

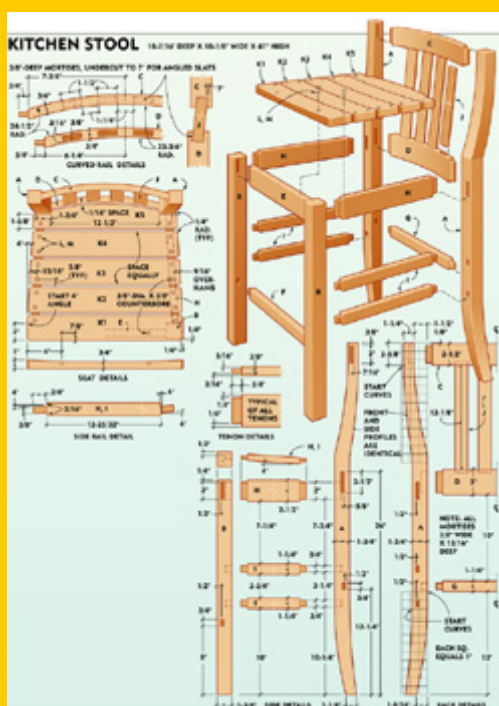
High Class

An elegant stool that's just right for your kitchen.



Today's kitchen is more than just a room for cooking. These days it's more of a geographical region, less defined by walls than by what it contains--its appliances, cabinets and, of course, the kitchen counter. In a way, the counter really reflects the nature of kitchen activity. From chopping to mixing to carving the roast, it's not the kind of work you do sitting down--at least, not in an ordinary chair. What you need is a chair that matches the stature of your counter--you need a kitchen stool.

Our design is perfect for all those quieter kitchen chores--like writing the grocery list, working out the week's menu or paying the bills. We built our stool from maple and gave it an ebonized finish for a modern look. But, it's equally at home in any hardwood or finish that suits your decor.



Materials List

Key	No.	Size and description (use)
A	2	2-3/4 x 2-3/4 x 41" maple (rear leg)
B	2	1-3/4 x 1-3/4 x 25" maple (front leg)
C	1	2-1/16 x 2-1/2 x 17" maple (upper curved rail)
D	1	1-5/8 x 3 x 14" maple (lower curved rail)
E	1	3/4 x 2-1/2 x 15-5/8" maple (upper front rail)
F	1	3/4 x 1-1/4 x 15-5/8" maple (lower front rail)
G	1	3/4 x 1-1/4 x 14" maple (rear rail)
H	2	3/4 x 2-1/2 x 14-9/32" maple (upper side rail)
I	4	3/4 x 1-1/2 x 14-9/32" maple (lower side rail)
J	4	3/8 x 1-1/2 x 12-7/8" maple (back slat)
K1	1	1 x 3 x 18-1/8" maple (seat slat)
K2	1	1 x 3 x 17-15/16" maple (seat slat)
K3	1	1 x 3 x 17-1/2" maple (seat slat)
K4	1	1 x 3 x 17-1/8" maple (seat slat)
K5	1	1 x 3 x 16-11/16" maple (seat slat)
L	18	1-1/2" No. 8 fh woodscrew
M	18	3/8"-dia. x 3/8" maple plug

Misc: 120-, 150-, 180- and 220-grit sandpaper; 4/0 steel wool; Behlen Solar-Lux Jet Black stain (No. 847-354), Solar-Lux Retarder (No. 847-585) and Waterlox Original Sealer/Finish (No. 294-001), available from Woodworker's Supply, 1108 N. Glenn Rd., Casper, WY 82601; 800-645-9292; www.woodworker.com.

Making The Legs

Note that both the front and side profiles of each rear leg are the same. Make a precise template of this profile from 1/4-in. plywood. Rip and crosscut 2-3/4-in.-square x 41-in.-long blanks for the rear legs. If your stock isn't thick enough, glue up thinner pieces for the blanks. Then, use the template to trace the leg shape onto the blanks. Cut 2-in.-thick stock to finished dimension for the front legs.

Lay out the rail mortises--except those for the top back rail--in the legs (Photo 1). Then, rout the mortises with a spiral up-cutting bit and edge guide (Photo 2). Use a sharp chisel to square the ends.

Cut the front and back profiles of a rear leg on the band saw. Save the waste pieces and tape them back onto the leg blank to support the piece while you cut the side profiles (Photo 3). With both legs sawn to shape, use a spokeshave and cabinet scraper to remove the saw marks and refine the profiles.

Now, lay out the mortises for the top rear rail joints on the inner surfaces of the rear legs. Because there isn't enough room for your router, use a drill press to bore a series of overlapping holes to remove most of the mortise waste (Photo 4). Finish the joints with a sharp chisel.

Making The Rails

Rip and crosscut 2-1/2-in.-thick stock to size for the curved rear rails. Then, lay out the curved profile of each rail on the edge of its blank, including the location of the tenons. Install a dado blade in the table saw and use the miter gauge as a guide to cut the tenons (Photo 5). Cut the rear face of each tenon first, then readjust the blade height to cut the front face. Finally, cut the shoulders at the top and bottom edges of each tenon. Use your band saw to cut the curved profile of the rear rails (Photo 6), and smooth the surfaces with a spokeshave and scraper.

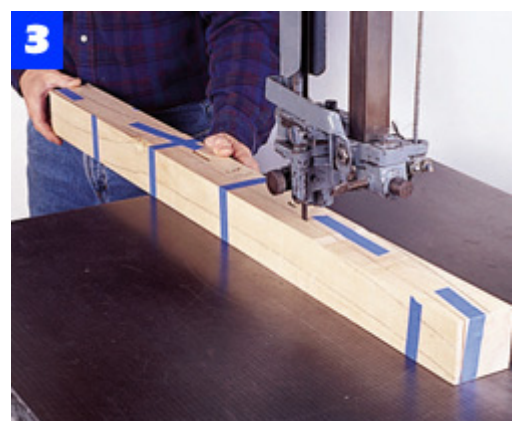
Rip and crosscut 3/4-in. stock to size for the lower stool rails. The front and rear rails join the legs squarely so these are easy to cut with the [table saw](#) and dado blade. The side rails, though, join



Use a tape measure, square and mortise gauge to lay out the locations of the mortises in the leg blanks.



Rout the mortises with spiral up-cutting bit and edge guide. Take two or three passes to avoid overloading the router.



After cutting the leg profile along one face, tape the waste back on the leg to provide a base for the adjacent face cuts.

at an angle and have angled tenons. While you could cut these joints by hand, we used a table saw jig for the work.

To make the jig, first screw a piece of 1/4-in. plywood to the bottom edge of a 2-1/2-in.-high fence to make a sliding table that's guided by your miter gauge. Then, build a ramp to hold the rails at a 4° angle, screw the ramp to the sliding table and clamp the jig to the table saw miter gauge (Photo 7).

Use scrap stock to test your jig and determine dado blade height. Note that one face of each tenon is cut with the ramp sloped toward the blade and the opposite face with the ramp sloped away. Use a clamp as a stopblock to position each rail for uniform cuts. Use the miter gauge without the jig to cut the 86° shoulders at the top and bottom of each tenon. Test fit the joints. If a tenon is too tight, carefully sand the tenon cheeks. If the fit is too loose, glue a veneer shim to the tenon.

Cut the back slats to finished size, and lay out the slat mortises in the curved back rails. Use the drill press to bore a series of holes in the rails to remove most of the waste from each mortise. Although the mortises are 3/8 in. wide, it is best to use a 1/4-in. bit for the job. This allows you a little bit of flexibility in positioning the holes--a bonus when drilling into the edge of a curved rail.



Begin the upper back rail mortises by boring a series of 3/8-in.-dia. holes. Then finish the job with a sharp chisel.



Use a dado blade to cut the tenons on the curved rail blanks. The blade height is different for front and rear faces.



Band saw the curved shape of the rear rails. Finish the rails by smoothing with a spokeshave and scraper.

Next, use sharp chisels to pare the walls and chop the ends of the mortises (Photo 8). Study the drawing to see how the back slats sit at an angle to the rails. Use a chisel to undercut the front wall of the bottom rail and the back wall of the top rail to allow the slats to sit at the proper angle (Photo 9).

Assembly

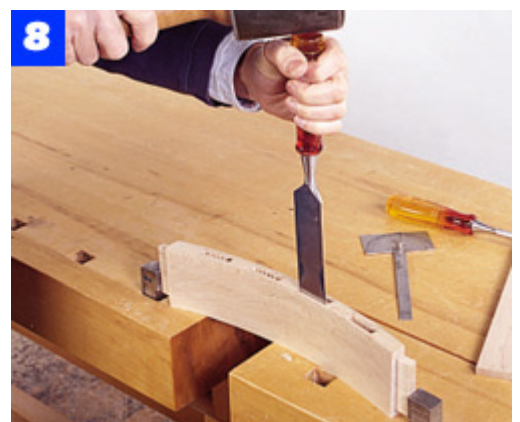
Carefully sand all stool parts with 120-, 150-, 180- and 220-grit sandpaper. Begin assembly by joining the back slats to the curved rails (Photo 10). Since the slats are held captive between the rails, you don't need to glue these joints.

Next, spread glue on the back-rail tenons and in the mating mortises in the rear legs. Join the rails to the legs and apply clamps to pull the joints tight. Compare opposite diagonal measurements to check that the assembly is square (Photo 11). Then, join the front rails to the front legs and let the glue set.

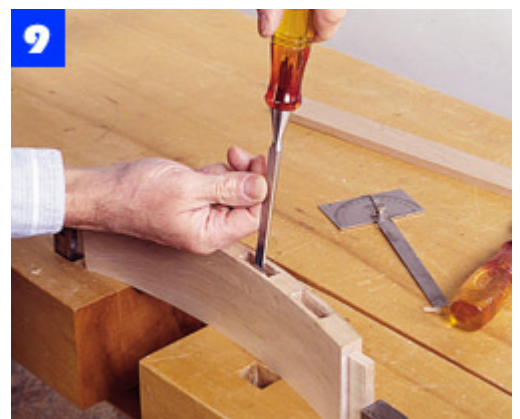
Finish assembling the stool base by joining the angled side rails to the front and rear leg subassemblies (Photo 12). Stand the stool on a flat table to make sure that the legs rest evenly on the surface. If the stool rocks, adjust the clamps. Cut 1-in.-thick stock to 3 x 18-1/8 in. for the seat slats. Mark the curved profile on the edge of each slat. Use the band saw to cut the shape and smooth the surfaces. Cut the angled ends of each slat with either your table saw or a miter saw, taking the finished length from the drawing. Cut the rear slat to fit between the legs and



Construct a jig for cutting the angled side-rail tenons on your table saw. The ramp holds the rails at a 4° angle.



After removing most of the waste by boring holes, use sharp chisels to square the back-rail slat mortises.



Use a chisel to undercut opposite mortise faces in the top and bottom curved rails to accommodate the 7° slat angle.

conform to the curve of the back rail.

Bore screwholes and 3/8-in. counterbores for attaching the slats to the rails, and install the slats with 1-1/2-in. No. 8 fh screws. Use a plug cutter in the [drill](#) press to cut 3/8-in.-dia. plugs from maple stock. Spread glue in each screwhole and on the plugs, and install the plugs (Photo 13). Let the glue set and then pare the plugs flush to the surface of the slats with a razor-sharp chisel. Sand the slats to 220 grit, and touch up any spots that were scratched during assembly.

Finishing

Our ebonized finish is achieved by staining the wood black, then applying a clear finish. You could simply paint the stool black, but the ebonized finish allows the wood grain to remain visible--a more interesting and unusual look.

We used Behlen Solar-Lux Jet Black stain to color our stool. To ease application by brush or rag, add up to 10 percent Solar-Lux Retarder and apply according to instructions. For a deep black color, allow the first coat to dry for at least 1 hour, then apply a second coat.

After thorough drying, we applied three coats of Waterlox Original Sealer/Finish. Brush each coat on the surface, let it set for about 20 minutes, then wipe off any excess. Let it dry overnight, then lightly sand the surface with 320-grit paper. Apply the next two coats using the same technique. After the final coat has dried, burnish the surface to a satin finish with 4/0 steel wool.



Begin stool assembly by joining the slats to the curved back rails. No glue is necessary in these joints.



Join the back rails to the rear legs and clamp. Compare opposite diagonals to check that the assembly is square.



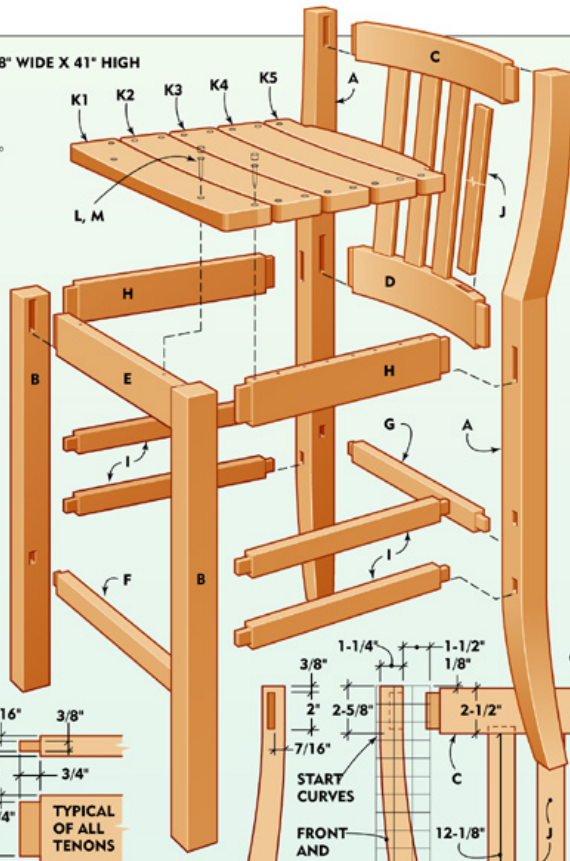
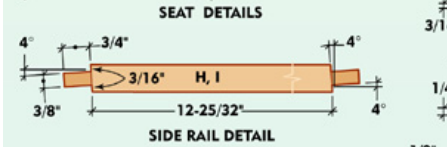
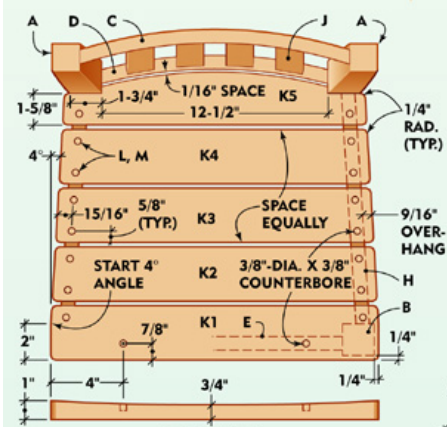
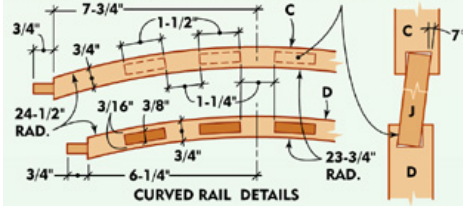
Join the rear and front subassemblies with the side rails. Set the stool on a flat table to check that the legs are even.



Screw the seat slats to the rails and install the plugs. When the glue dries, pare the plugs flush to the seat surface.

KITCHEN STOOL 18-7/16" DEEP X 18-1/8" WIDE X 41" HIGH

3/8"-DEEP MORTISES, UNDERCUT TO 7° FOR ANGLED SLATS



TYPICAL OF ALL TENONS

TENON DETAILS

START CURVES

FRONT AND SIDE PROFILES ARE IDENTICAL

NOTE: ALL MORTISES 3/8" WIDE X 13/16" DEEP

EACH SQ. EQUALS 1"

START CURVES

1-3/4"

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