

WOODWORKER'S JOURNAL

"America's leading woodworking authority"™

Classic Project

In this plan you'll find:

- Step-by-step construction instruction.
- A complete bill of materials.
- Construction drawings and related photos.
- Tips to help you complete the project and become a better woodworker.

Step Stool

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GIFT SHOP

Easy-To-Make Gift Projects

There's no arguing the value of a step stool in the home. Trouble is, it's usually an inconvenience to have to dig the step stool out of a distant—and usually cluttered—closet. Admittedly, most step stools just aren't meant to be seen.

Perhaps that's why, when we discovered this handsome step stool by Pennsylvania woodworkers Brad and Sandy Smith, we knew it was something special. The model shown is made from walnut, but any strong and durable hardwood, such as maple, oak, or ash, would also be suitable. Because the stool must support the weight of an adult—sometimes as much as 200 pounds—we don't advise using a softwood for this project. And be sure to avoid stock with knots or other defects that might affect strength.

The work required to construct the stool is minimal. Both sides of the stool are identical, with a pair of legs (A) joined by three steps (B, C, D). Tenons are cut on the ends of the steps to fit mortises in the legs, and deep-thread truss-head screws (E) lock the joints securely. A pair of hinges (F) fastens the two halves of the stool together, and a pair of straps (G) holds the stool at the appropriate position when opened.

Bill of Materials
(all dimensions actual)

Part	Description	Size	No. Req'd.
A	Leg	1 x 2 1/2 x 30	4
B	Top Step	1 x 3 x 12 1/4"	2
C	Middle Step	1 x 3 x 14 1/4"	2
D	Bottom Step	1 x 3 x 16"	2
E	Truss-head Screw	No. 10 x 2 1/2" long**	24
F	Butt Hinge	1 1/2 x 2" long	2
G	Nylon Strap	1 in. wide x 17 in. long	2
H	Bumper	1 1/2 in. diameter	2

* Length includes tenon.
** Truss-head Phillips drive screws, in the black finish shown, are available from Brass Fasteners, P.O. Box 88307, Grand Rapids, MI 49518; Int. (816) 698-8314. Order part no. C204 for a package of 100. Cost is \$4.43 per package. (There is an extra \$4 handling charge for orders less than \$50.)

Start by cutting the legs to an overall length of exactly 30 in. To get the proper angle on the bottom end of the legs, tilt the saw blade 5 degrees from vertical, and angle the miter gauge 20 degrees. Note that you can't just cut four identical legs. For two of the legs you'll need to

Step Stool

reverse the miter gauge angle. The tops of the legs are cut with the miter gauge angled 20 degrees, but with the saw blade vertical.

For the step mortises, you'll need to employ your drill press and a wedge with a 5-degree angle (see detail). Use a 7/8 in. diameter Forstner bit to cut to a 1/4 in. depth (as measured at the bottom edge of the mortise), then use chisels to clean the remaining waste.

For the steps, first cut them to the lengths listed in the Bill of Materials, then use the table saw with the blade angled 5 degrees and set for a 1/4 in. deep cut to make the shoulder cut at the top edge. Use a tenon saw to establish the shoulders at the front and back edges, and clean up the remaining waste with a chisel. Now set the table saw up for ripping, angle the blade 20 degrees, and

establish the angle on the inside edge of each step. The bullnose on the front edge of the steps is best roughed in with a plane and then sanded smooth.

Final sand, round any sharp edges, then glue and assemble the two halves of the step stool. When dry, drill for and insert the deep-thread truss-head screws. These screws grip especially well in end grain, and we don't suggest that you substitute a regular wood screw for them. If you can't find the screws locally, a source is listed in the Bill of Materials.

Apply an oil finish, fasten the two halves of the stool together with a pair of butt hinges (H) as shown. Use 1/4 in. long screws and cup washers to securely anchor the nylon straps.

Published in *Woodworker's Journal* January/February 1991

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WJC065

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Bill of Materials

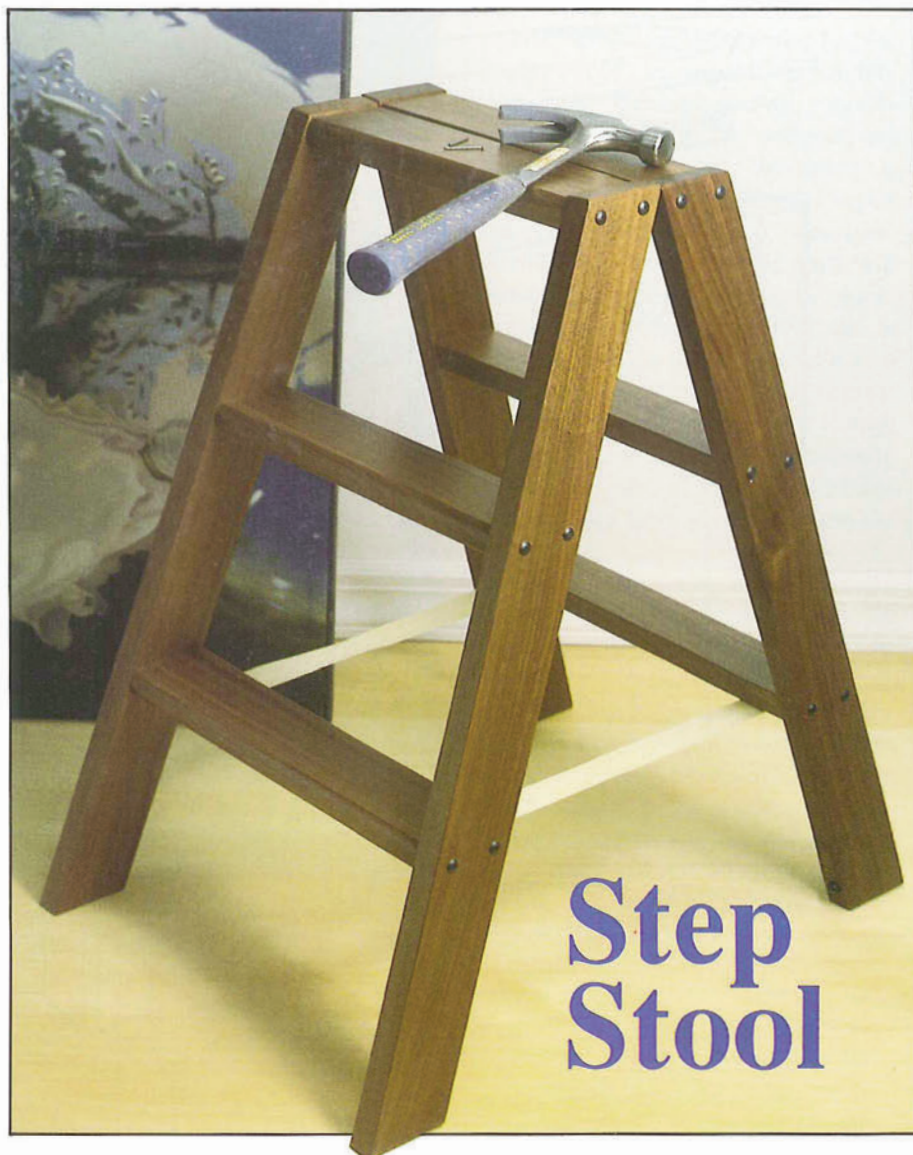
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Apply an oil finish, fasten the two halves of the stool together with a pair of butt hinges, then add the nylon straps (available at upholstery stores) and rubber bumpers (H) as shown. Use 3/4 in. long screws and cup washers to securely anchor the nylon straps.





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Internet Production Coordinator