Family DIY Project! How to Make a Simple Bookshelf

Introduction

Build this simple pine bookshelf with a miter saw, biscuits—and a young helper. It's a great way to teach your son or daughter about woodworking and tool use.
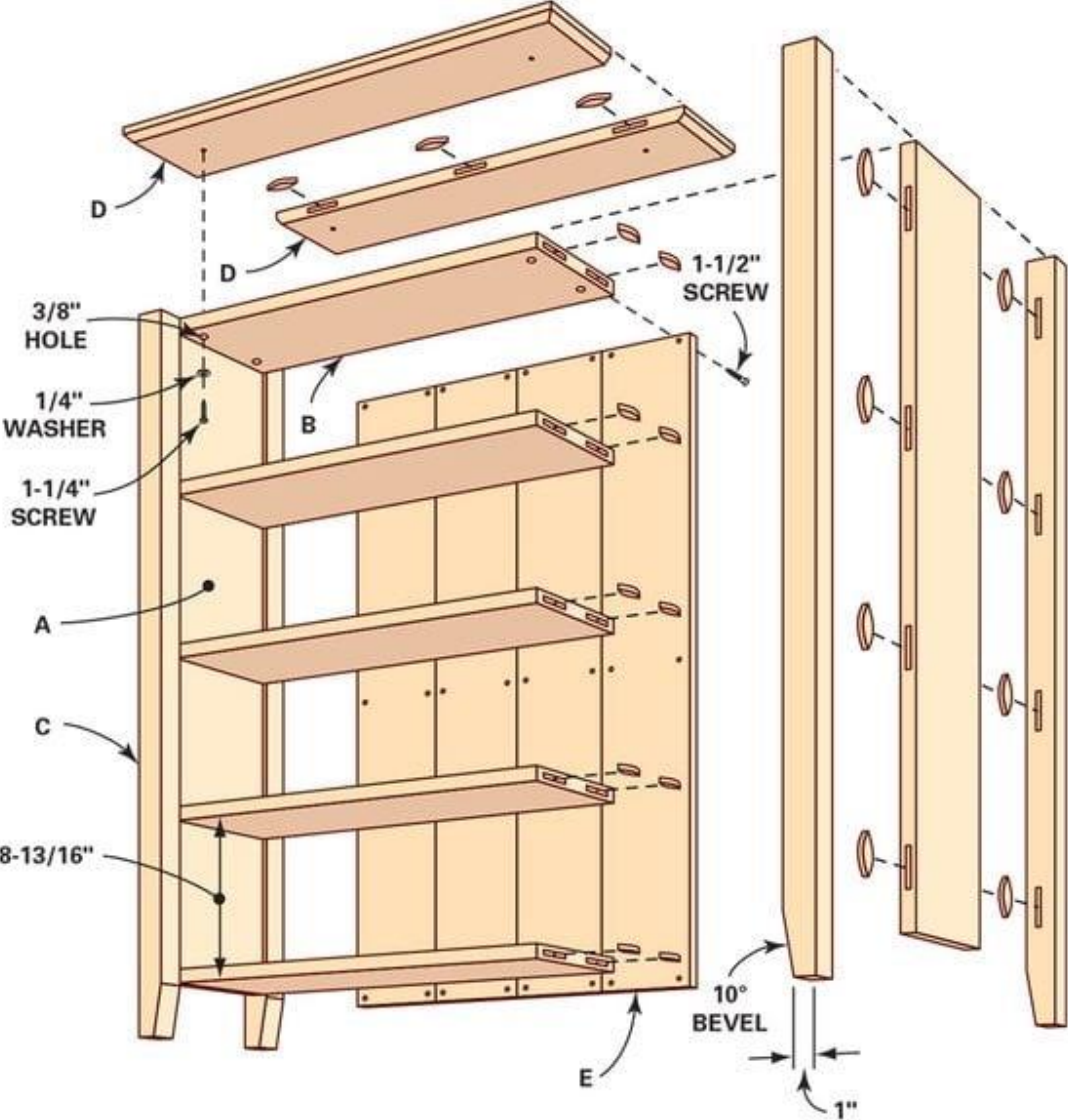
Overview

Here's a simple DIY bookshelf project that gives you a chance to pass some of beginner-level woodworking skills on to the next generation. Any kid will love spending the day with you assembling this bookcase. And by the end of the day, your helper will have hands-on experience with several power tools, plus an attractive homemade bookshelf to show off.

The knotty pine bookcase parts are all standard dimensional lumber. We used biscuit joints for the shelves and legs. If you don't own a biscuit joiner but still want to build this project, you can simply nail or screw the parts together and fill the holes. We used a table saw to cut the 1-1/2 in. square legs from 2x4s and a router with a 45-degree chamfer bit to bevel the edge of the top. If you don't have a table saw or router, you can just use stock 2x2s for the legs and leave the edge of the top square.

Project Plans

FIGURE A

Overall dimensions: 39-3/4" tall x 26-1/2" wide x 11" deep

3/8" HOLE

1/4" WASHER

1-1/4" SCREW

1-1/2" SCREW

8-13/16"

10° BEVEL

1"

A
B
C
D
E

Cutting List

Top (A)
Material: 1×8 Pine

Quantity: 2
Dimensions: 3/4″ x 7-1/4″ x 36″

Shelves (B)
Material 1×8 Pine
Quantity: 5
Dimensions: 3/4″ x 7-1/4″ x 22-1/2″

Legs (C)
Material: 2×4 Pine
Quantity: 4
Dimensions: 1-1/2″ x 1-1/2″ x 39″

Top (D)
Material: 1×6 Pine
Quantity: 2
Dimensions: 3/4″ x 5-1/2″ x 28″

Back (E)
Material 1×6 Pine
Quantity: 4
Dimensions: 3/4″ x 5-1/2″ x 36″

Tools Required

- 45-degree chamfer bit
- Biscuit joiner
- Clamps
- Cordless drill
- Countersink drill bit
- Framing square
- Hearing protection
- Miter saw

- Orbital sander
- Router
- Safety glasses
- Table saw
- Tape measure

Materials Required

- 1 - 1x6 x 10 ft. No. 2 pine board
- 1 - 1x6 x 8 ft. No. 2 pine board
- 1 - 2x4 x8 ft. pine (rip to 2x2s for legs)
- 1 - Bottle of wood glue
- 2 - 1x8 x 8 ft. no. 2 pine boards
- 24 - 1-1/2 in. wood screws
- 39 - No. 20 wood biscuits
- 4 - 1-1/4 in. drywall or wood screws
- 4 - 1/4 in. flat washers

Project step-by-step (12)

Step 1

Framing
square

Mark both sides at once

To start this easy DIY bookshelf project, first lay
the bookcase sides together to mark the shelf
locations.

Step 2

Mark the biscuit slots

Make pairs of corresponding marks on the legs and sides. Later you'll center the biscuit joiner on the marks to cut slots that align.
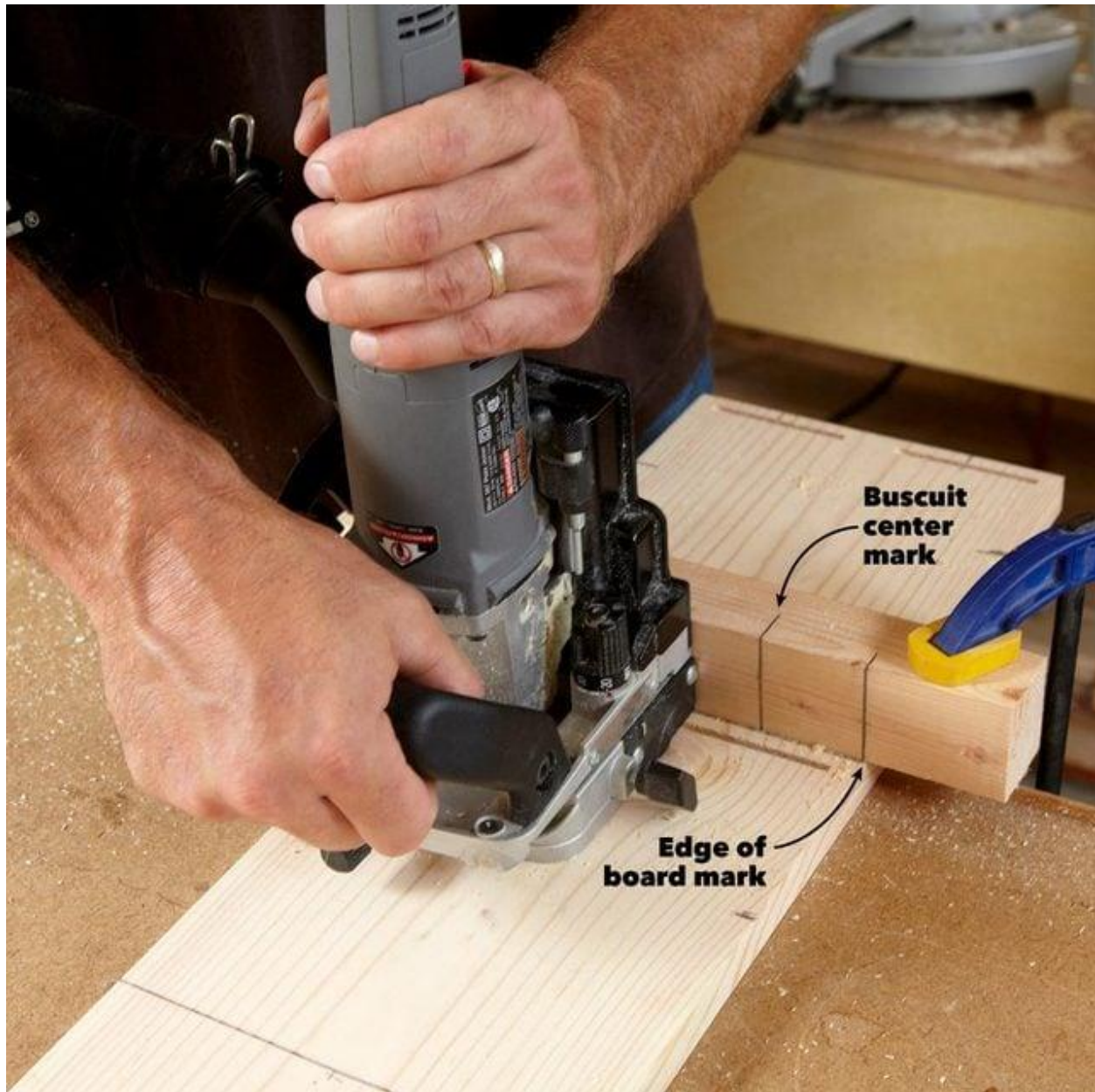
Step 3

Labels in image: Side, Edge of board mark, 2x2 fence, Buscuit center mark

Slot the end of the side

Clamp the fence to the work surface and butt the end of the shelf to it. Then center the biscuit joiner on the mark and cut the slot. Repeat for the second slot.
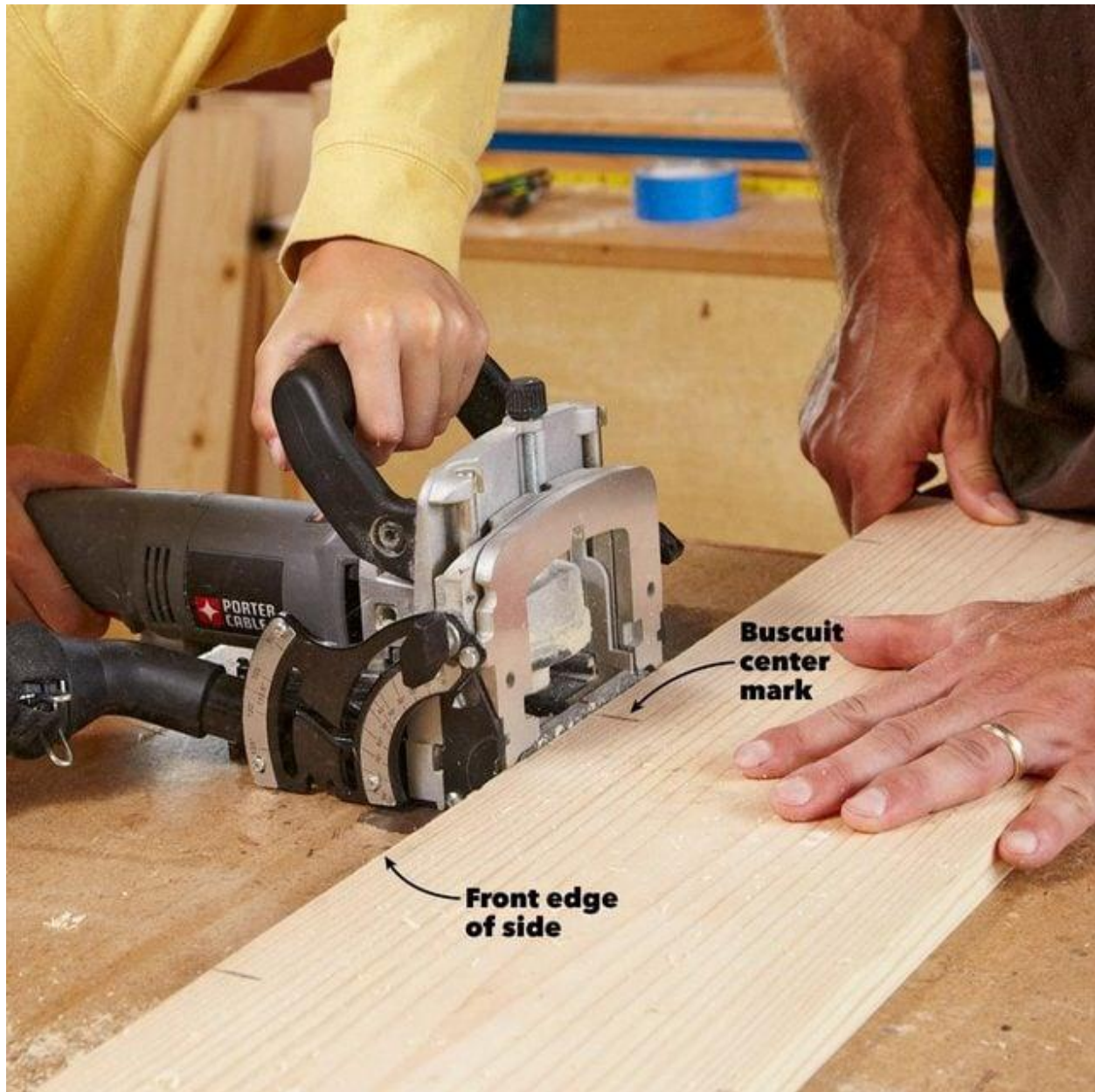
Step 4

Buscuit center mark

Edge of board mark

Cut slots for the shelves

Line up the 2×2 jig with the edge of board mark and clamp it. Center the biscuit joiner on the center mark on the fence and cut the slot. Repeat for the second slot.

Step 5

Buscuit center mark

Front edge of side

Cut slots for the legs

Line up the center of the biscuit joiner with the marks on the edge of the side and cut the slots. Make sure both the shelf side and the biscuit joiner are tight to the work surface when you cut the slot.

Step 6

Leg

1/2" spacer

Position the slot with a spacer

Place a scrap of 1/2 in. plywood or particleboard on the work surface. Butt the leg against it and rest the biscuit joiner on the spacer while you cut the slots. The 1/2 in. spacer will automatically position the slots.

10-degree bevel

Beveling jig

Bevel the legs with a simple jig

Screw two scraps to a small square of plywood to form a cradle for the legs. Clamp the jig to the miter saw fence, and cut a 10-degree bevel on the bottom of each leg.

Flux
brush

Shelf

Add the biscuits

Work quickly to glue biscuits into the slots. Spread the glue in the slots, and onto the biscuits, with a brush.

Step 9

Biscuits

Assemble the shelves quickly

Biscuits start to swell and lock in place soon after the glue is applied, so it's important to get the shelves assembled quickly.

Step 10

Labels on image: Top, 45-degree bevel, Bench cookie

Beveling the edge is a job for an adult

Use a router and a 45 degree chamfering bit to bevel the front and sides of the top.

Bevel side

Leg

Insert the biscuits and clamp the legs

Spread the glue and insert the biscuits. Then glue on the legs. Clamp them and wait for the glue to dry before moving on to install the top and back.

Step 12

1-1/4"
screw

Screw on the back boards

Drill pilot holes to prevent splitting. Then screw the boards to the back of the bookcase.