

# WOODWORKING BASICS

## Build a Walnut Wall Shelf

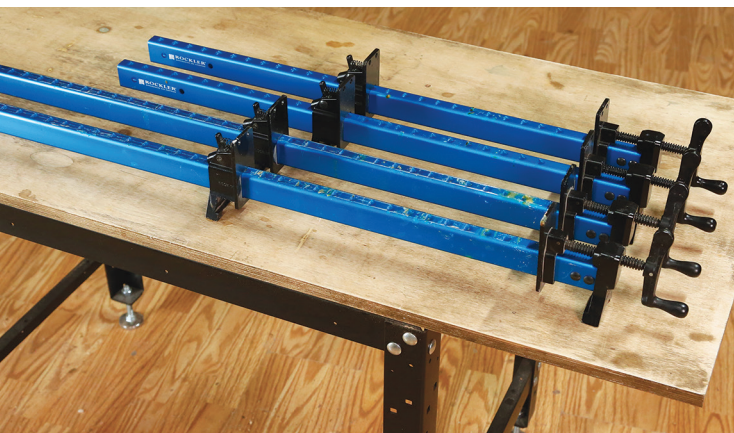
By WJ Staff

*This next project in our learning to woodwork series adds new skills to your list, plus you get a nice wall shelf.*

**SEE PAGE 5**  
for a list of  
supplies and  
lumber



**Mount the shelf to the wall using screws of appropriate size paired with finishing washers. Securing the shelf to wall studs or using wall anchors will provide sufficient holding strength to allow you to use it with confidence.**



**F**or those of you who have been following along, this is the third article in a series teaching the basics of woodworking. In the previous two articles, we taught how to join aprons to legs, how to accurately cut square parts, how to read a material list, shape wood with a hand saw, glue up and finish a solid-wood tabletop and more. Those project articles and videos are on our website

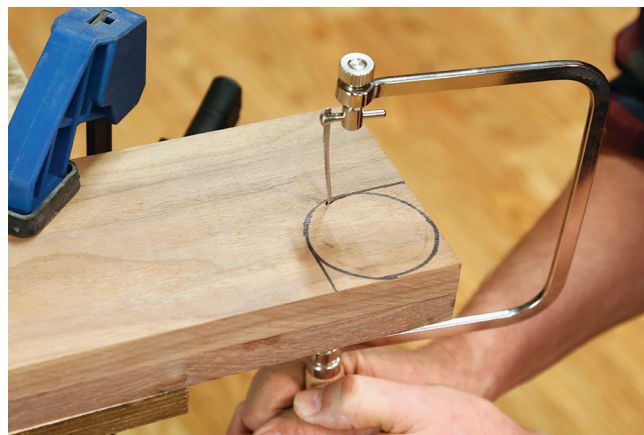
under the “More on the Web” tab.

Building this handsome wall shelf will use skills from the last projects, starting with squaring up the ends of the 3/4" x 5" x 24" walnut pieces that compose the carcass (the body) of the shelf. Using the *Material List* on the next page, cut the pieces to length. Keep the two pieces of waste created by cutting the shelves to length; we'll use them later.

## Adding Shape to the Shelf Sides



Making use of a glue bottle's shape to trace the curve on the top of each side workpiece and laying out the curve at the bottom is a common and easy way to create consistent, repeatable shapes without using a compass.



A coping saw with a coarse-toothed blade can cut the curved shapes in the side panels. Note that the sides are clamped together so both boards are cut at once. Do the same for the curve at the top of the sides.

## Sanding the Curved Shapes Smooth



The coping saw will leave saw marks on the wood. Here, the builder is using the glue bottle from which he traced the curves as a "sanding block" to help sand the curved section smooth.

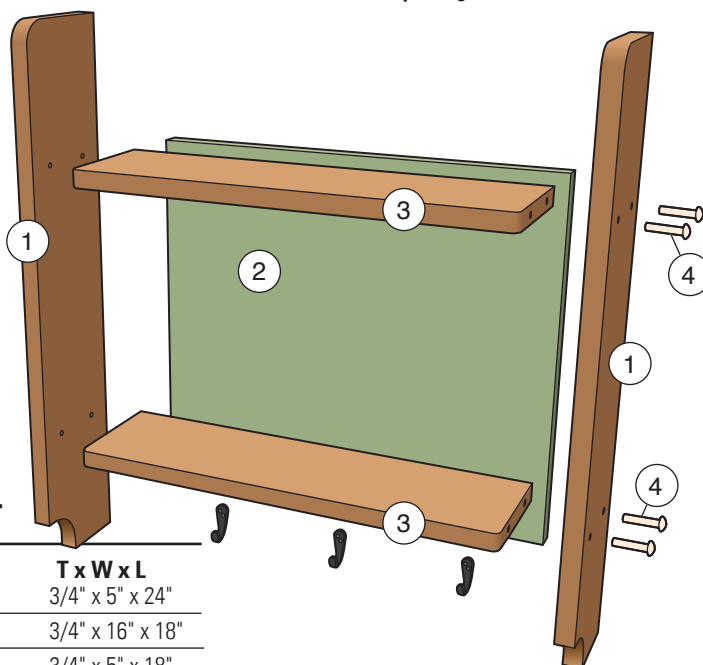
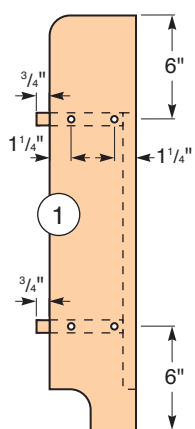


Sanding the saw marks away on the curved upper corners can be done with a traditional sanding block. Note that while sanding both sets of curves smooth, the sides remain clamped together.

## Cutting the Curves

Now lay out (draw on the wood) the curved shapes on the top and bottom of the sides. We used a common shop trick – using a round object with an appropriate radius (in this case, a glue bottle). It could be a paint can or a red Solo® cup, for that matter ... The photos on the top of the page demonstrate this layout and cutting process, as well as using the glue bottle to help sand the curved areas.

With that done, it's time to move on to joining the shelves to the sides. In our last project, we used dowels to join aprons to legs. Here, we'll use pegs to join the shelves and sides. It's a similar concept,



## MATERIAL LIST

	T x W x L
1 Sides (2)	3/4" x 5" x 24"
2 Back (1)	3/4" x 16" x 18"
3 Shelves (2)	3/4" x 5" x 18"
4 Pegs (8)	3/8" Dia. x 1 1/2"

# WOODWORKING BASICS CONTINUED

## Boring Holes in the Sides and Shelves to Accept the Pegs



With the top shelf clamped in place, bore 3/8" holes through the sides into the ends of the shelves. The shelf is held up by a 3/4"-thick scrap. The drill bit is wrapped with masking tape at 2" from the end to set the hole depth.



As you bore the holes, temporarily insert the pegs. They are too long to fit properly, but they will hold the parts in alignment. This is essentially a dry or test fit. Boring holes for each shelf must be done separately.

## Using the Pegs to Mount the Shelves



Easily cut the pegs to length by drilling a 3/8" hole through the two 3/4" walnut waste pieces, then slide a peg through and saw it to length as shown. This leaves the barrel of the peg 1 1/2" long.



To assemble the self carcass, start by attaching one side to both shelves. Apply glue in the shelf holes, slide the pegs through the side and push the pieces together. Do the same for the other side and then clamp it together.

but slightly different. Get started by marking where the shelves will be located between the sides. Grab the two

cutoff pieces from the shelves and use them to lift a shelf up from the work surface. Clamp the carcass temporarily

together, as shown in the top left photo. The peg holes are located 1 1/4" in from each edge of the two side pieces. Bore the holes for the pegs. Temporarily insert the pegs into the holes. Now repeat the process for the second shelf. Mark all the parts on their back edges so you can reassemble them.

## Pegs, Screws and Finish Washers

We joined the shelves to the sides using 3/8"-diameter maple pegs. They work like dowels with heads on them. To attach the back to the shelf carcass, we used #8 x 1 1/4" flathead screws. To mount the shelf to the wall through the plywood, we chose black #8 x 2 1/2" flathead screws paired with black finishing washers.



### Assembly and Finishing

With the holes bored, the next step is to cut the pegs to length, as shown in the lower left photo above.

Before you assemble the shelves and sides, you need to sand the parts smooth. By hand or with a sander, sand up

## Making the Plywood Back



*Measure between the sides and cut the plywood back to fit. The dimensions in the Material List will get you close to the correct size, but when fitting a piece between other pieces, always measure to confirm.*



*Painting the plywood back is entirely optional. Two coats of paint with light sanding between coats will provide a quality finish. Alternatively, it could be finished with the same clear oil as the walnut carcass.*

## Apply Finish to the Walnut Carcass, Mount the Back and Hooks



*With the walnut parts sanded and assembled, it's time to apply a finish. An oil-based topcoat pops the figure of walnut's grain really well and is easy to apply. Wipe it on, wipe it off and then dispose of the rags properly.*

through the grits from 100- to 220-grit to remove all blemishes and saw marks. While you are at it, gently round over the front corners of the shelves.

Glue and clamp the parts together, taking care to keep the glue from getting on any surfaces that will be seen.

Cut the plywood back to fit the space between the sides. Measure before you do this so you can confirm the actual size. When done, give the back a light sanding and paint the panel. You could apply a natural clear coat of finish instead of paint; that choice is completely up to you.

When the finish cures, place

the shelf carcass on the back panel. Align them and then use light pencil marks to help locate the screw holes for mounting the back. Pre-drill holes and countersink them to recess the screwheads.

Apply two coats of an oil-based finish to the walnut parts. Allow it to cure. Then screw the plywood back in place. The back will add lateral stability to the assembly. Add hardware such as the black hooks, shown here, if you wish.

Mounting the shelf to the wall will require securing to studs or wall anchors or both.



*Attach the back to the carcass with screws driven through the plywood back. Pre-drill the holes and countersink them so the screwheads are flush. Attaching the back adds strength to the shelf assembly.*



*Another optional component to this wall shelf is the hook hardware. It is up to the builder as to what style of hardware to use or even to include hooks at all. The hooks add functionality and look great.*

*Here is a list of the tools and lumber used to build the Walnut Wall Shelf project.*

## **Wall Shelf Supplies**

**3/8" Hole Maple Pegs, 4 Pack (2) #75929 ..... \$2.99 ea.**  
**Walnut by the Piece, 3/4" X 5" X 24" (4) #38991 ..... \$30.99 ea.**  
**3/4" American Birch Plywood, 24"W x 48"L (1) #69646 ... \$49.99 ea.**  
**Single Robe Hook, Flat Black (3) #31710 ..... \$5.99 ea.**

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