

## THANK YOU!

---

You have successfully downloaded a sample woodworking plan from PlansNOW. This sample represents the same level of quality you'll find in more than **200** woodworking projects and technique articles at PlansNOW! See details below.



### Tips for Trouble-Free Printing

► **Get the latest version of FREE Adobe® Acrobat® Reader®.** For best results printing our plans, use Adobe Acrobat Reader 5.0 or newer. This is a FREE download.

[Click here](#) or go to [www.adobe.com/products/acrobat/readstep2.html](http://www.adobe.com/products/acrobat/readstep2.html)

► **Clear memory.** Most printing problems can be avoided by freeing up memory on your computer and printer before printing from Acrobat Reader. Close all other programs that may be running and turn off your printer for at least 15 seconds to flush printer memory.

► **Print in batches.** Our larger project plans will print more successfully if you print a few pages at a time. For example, with a 12 page downloadable plan, select pages 1-6 in the print command window and print these pages only. Then select 7-12 and print.

► **Get advanced printer help.** Visit the Adobe Reader Support web site for detailed instructions in troubleshooting common printer problems.

[Click here](#) or go to [www.adobe.com/support/techdocs/150d6.htm](http://www.adobe.com/support/techdocs/150d6.htm)

### A Plan for Every Project!

Let your imagination go at PlansNOW as you browse **more than 200** woodworking project plans and technique articles—each ready for immediate download to your computer!



Tables-Cabinets

► [Click Here](#)



Home Office

► [Click Here](#)



Shop Storage

► [Click Here](#)



Garden-Patio

► [Click Here](#)



Techniques

► [Click Here](#)

**Plans NOW MEMBER**

**Save 20% on every purchase!**

Join our PlansNOW Members list and save 20 percent on every item in the store. You'll also get a FREE downloadable technique article just for signing up!

[Click here](#) or go to [www.plansnow.com/join.html](http://www.plansnow.com/join.html)

### Need Hardware? Woodsmith Project Supplies 1-800-444-7527

For plans that require unique or hard-to-find hardware and accessories, we may have a kit available for purchase. Please contact Woodsmith Project Supplies for more information.

**Contact Us.** Have a question about PlansNOW? We want to hear from you!

E-mail: ► [planman@augusthome.com](mailto:planman@augusthome.com) Phone: ► 1-800-333-5441 (Mon-Fri 8-5 Central time)

# BIRD FEEDER

*Cedar shingles and copper roofing make this an attractive addition to any yard.*



*When it's time to refill, simply lower the main housing on the pole for easy access to the seed compartment.*

Several years ago, I helped a friend side his house with cedar shingles. The job took time, but it sure looked great when we were done.

**SMALL SHINGLES.** I remembered that look as I was browsing through a local hobby store. Hanging on a display rack were bags of scaled-down cedar shingles (for dollhouses). It occurred to me that they would make an attractive siding for a bird feeder I'd been planning.

Fortunately, the cedar shingles I used on this bird feeder didn't take nearly as long to apply as the full-size versions on my friend's house.

**COPPER ROOF.** Another eye-catching feature of the bird feeder is the real copper roof.

After spending some time outdoors, the roof will take on the attractive green patina that's typical of aged copper.

Making the copper roof doesn't require any special metalworking equipment. The roof is actually made of plywood wrapped with a thin copper foil. The foil can be found at many hobby stores. Or you can order a hardware kit from *Woodsmith Project Supplies* that includes the shingles and the copper foil. Call 1-800-444-7527 for more details about this.

**OPTIONS.** If you'd like a different look for the feeder, you can put square shingles on the roof instead of copper and make clapboard siding for the ends. Details for this version are

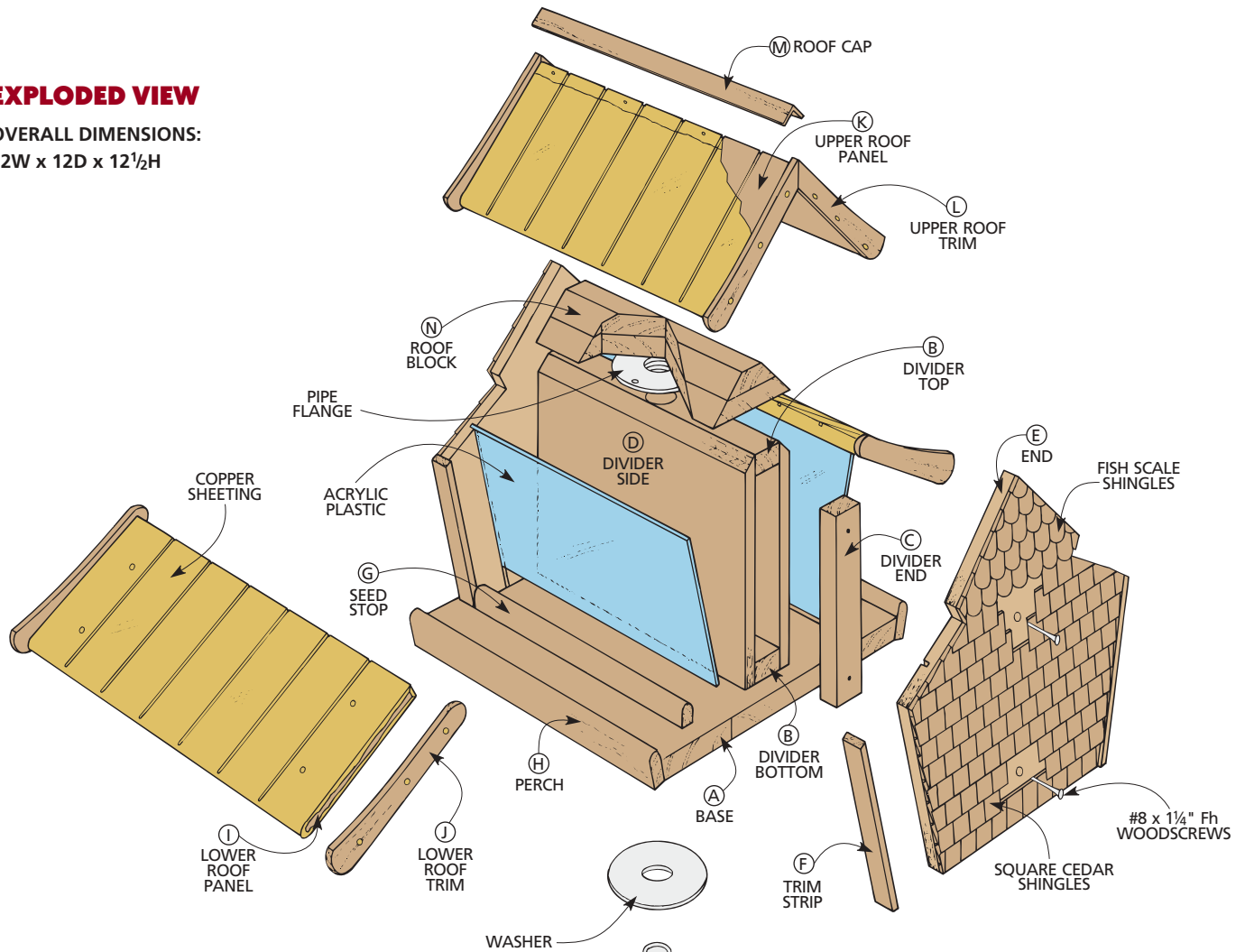
found in the Designer's Notebook on page 8.

**EASY FILLING.** With most feeders, you lift the top to fill it with seed. But since I wanted to mount mine on a pole, that method wouldn't work very well. Instead, the roof stays attached to the top of the pole while the bottom drops down to allow you to pour in more seed (see inset photo). A pin through the pole holds the feeder at the proper height for filling. Once the feeder is full, a second hole higher on the pole accepts the pin to hold the feeder in place under the roof.

**CEDAR.** I used cedar for all of the solid wood portions of the feeder. Since the ends are covered with shingles, I used exterior-grade plywood there.

## EXPLODED VIEW

OVERALL DIMENSIONS:  
12W x 12D x 12<sup>1</sup>/<sub>2</sub>H



## MATERIALS LIST

### WOOD

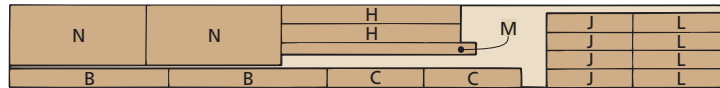
<b>A</b> Base (1)	$\frac{3}{4}$ x 12 - 12
<b>B</b> Div. Top/Btm. (2)	$\frac{3}{4}$ x 1 <sup>1</sup> / <sub>4</sub> - 10 <sup>1</sup> / <sub>2</sub>
<b>C</b> Divider Ends (2)	$\frac{3}{4}$ x 1 <sup>1</sup> / <sub>4</sub> - 6 <sup>1</sup> / <sub>2</sub>
<b>D</b> Divider Sides (2)	$\frac{1}{2}$ ply - 8 x 10 <sup>1</sup> / <sub>2</sub>
<b>E</b> Ends (2)	$\frac{1}{2}$ ply - 11 x 11 <sup>1</sup> / <sub>2</sub>
<b>F</b> Trim Strips (4)	$\frac{1}{4}$ x $\frac{3}{4}$ - 6 rough
<b>G</b> Seed Stops (2)	$\frac{1}{2}$ x $\frac{3}{4}$ - 10 <sup>1</sup> / <sub>2</sub>
<b>H</b> Perches (2)	$\frac{1}{2}$ x 1 <sup>1</sup> / <sub>4</sub> - 12
<b>I</b> Lwr. Roof Panels (2)	$\frac{1}{2}$ ply - 5 x 14
<b>J</b> Lwr. Roof Trim (4)	$\frac{1}{4}$ x 1 <sup>1</sup> / <sub>4</sub> - 12
<b>K</b> Upr. Roof Panels (2)	$\frac{1}{2}$ ply - 5 <sup>7</sup> / <sub>8</sub> x 13
<b>L</b> Upr. Roof Trim (4)	$\frac{1}{4}$ x 1 <sup>1</sup> / <sub>4</sub> - 6 <sup>1</sup> / <sub>2</sub>
<b>M</b> Roof Cap (1)	$\frac{3}{4}$ x $\frac{3}{4}$ - 13
<b>N</b> Roof Block (1)	1 <sup>1</sup> / <sub>2</sub> x 4 - 9

### HARDWARE SUPPLIES

- (12) No. 8 x 1<sup>1</sup>/<sub>4</sub>" Fh woodscrews
- (8) No. 10 x 1" Fh woodscrews
- (40) No. 16 x 1" brass escutcheon pins
- (16) No. 17 x  $\frac{3}{8}$ " copper tacks
- (1 bag) Square cedar shingles
- (1 bag) Fish scale cedar shingles
- (4) 40 ga. smooth copper sheets (12" x 19")
- (2)  $\frac{1}{8}$ " acrylic plastic (6" x 12")
- (1)  $\frac{1}{4}$ "-dia. x 1<sup>3</sup>/<sub>4</sub>" quick release pin
- (1) 1<sup>1</sup>/<sub>8</sub>"-I.D. washer
- (2) Pipe flanges
- (1) Galvanized pipe

## CUTTING DIAGRAM

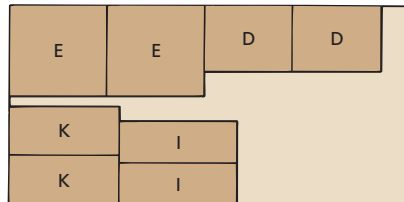
1x6 ( $\frac{3}{4}$  x 5<sup>1</sup>/<sub>2</sub>) - 48 CEDAR (2 Bd. Ft.)

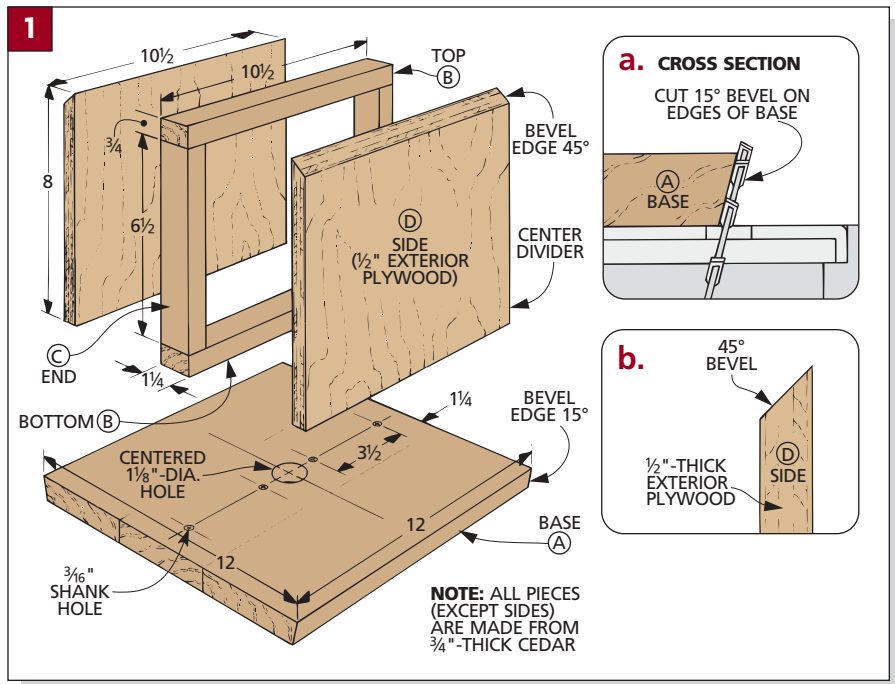


1x6 ( $\frac{3}{4}$  x 5<sup>1</sup>/<sub>2</sub>) - 48 CEDAR (2 Bd. Ft.)



$\frac{1}{2}$ " EXTERIOR PLYWOOD - 24 x 48





**BASE**

I began work on the bird feeder by making a 3/4"-thick base (A). This is just a glued-up 12"-square blank of cedar with beveled edges (Figs. 1 and 1a).

**Note:** Since the feeder is going to be exposed to the weather, I used two types of water-resistant glue for assembly. For most of the bird feeder, I used an exterior-grade yellow glue. Epoxy will be used later when the shingles are attached.

After cutting the base to size, the next step is to drill a 1 1/8"-dia. hole in the center for a support pipe. While I was at it, I also drilled the shank holes for attaching the center divider which is added next.

**Note:** Cedar splinters easily, so make sure you back up the base with a piece of scrap before drilling the holes.

**CENTER DIVIDER.**

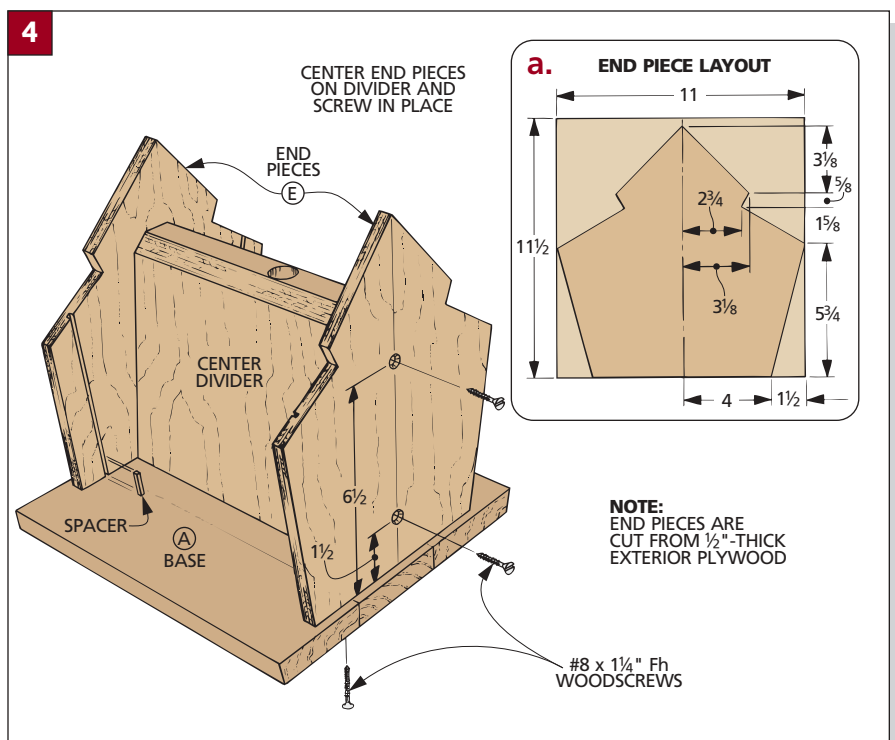
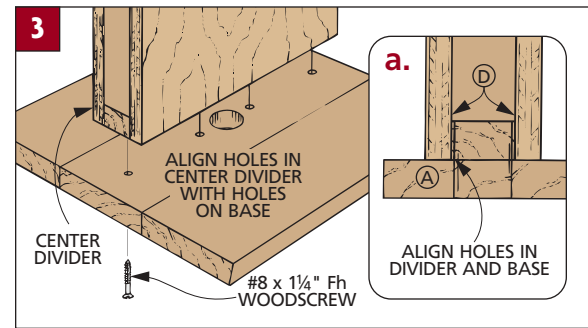
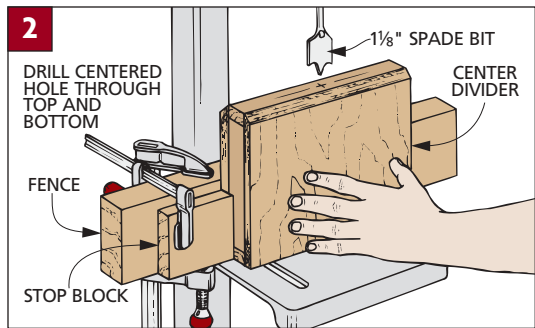
The center divider separates the feeder into two sections. (This lets me put different types of seed in each half.) It also provides a way to attach the sides of the feeder later. The divider consists of a top/bottom

(B) and two ends (C) that are sandwiched between two sides (D).

Here again I used cedar, but only for the top, bottom, and ends. For the sides I used 1/2" exterior-grade plywood. And to make the opening wider so it's easier to fill the feeder, I beveled the top edges at a 45° angle (Fig. 1b).

After gluing the center divider together, the next step is to drill centered holes for the support pipe to pass through (Fig. 2). The only problem is the drill bit is shorter than the divider. So the holes have to be drilled from both the top and the bottom. To do this, I set up a fence and stop block on the drill press. After drilling through the top, flip the divider over and drill through the bottom. Keep the same end against the stop block or the holes may not align with each other.

**DIVIDER INSTALLATION.** After the holes have been drilled, the divider can be screwed to the base. Just be sure the divider is positioned square on the base



and the holes in the divider and base align (Figs. 3 and 3a). (An easy way to align the holes is to run a length of pipe through them.)

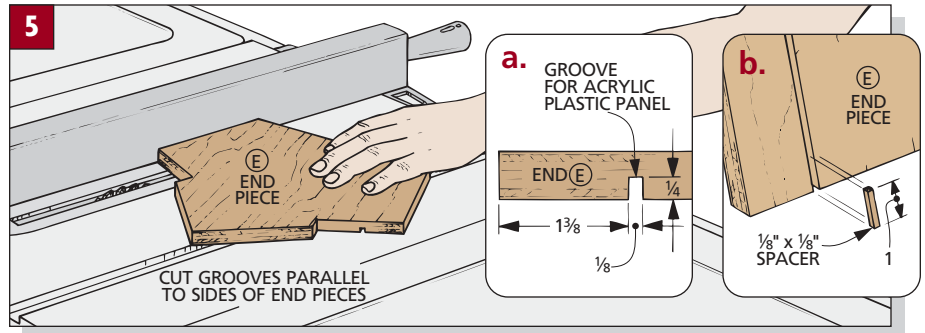
**END PIECES.** After attaching the divider to the base, work can begin on the end pieces. I started by cutting a blank for each end piece (E) from 1/2"-thick exterior-grade plywood (Fig. 4a). After laying out the shape on one blank, I fastened both blanks together with carpet tape. Then I cut both pieces at once on the band saw (or you could use a jig saw). This ensured that both pieces were identical.

Before the end pieces can be attached to the divider, there are a couple of things to do. First, two shallow grooves are cut on the inside face of each end piece. These grooves will be used to hold the 1/8"-thick acrylic plastic panels that create each food compartment. It's easy to cut them on the table saw (Figs. 5 and 5a).

Second, to hold the panels at the correct height for the seed to flow out I glued 1"-long spacers at the bottom of each groove (Fig. 5b).

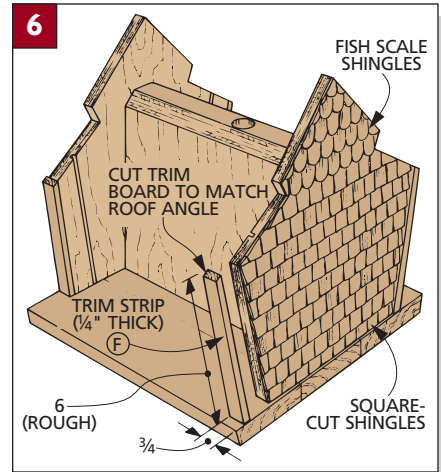
Once the spacers are in, center the end pieces (E) on the base (A) and clamp them in place. After drilling shank and pilot holes, secure the ends to the divider with screws (Fig. 1).

## SHINGLES & TRIM



After attaching the end pieces, I added the shingles. I used two different styles of cedar dollhouse shingles for this project. The lower section has typical square-cut shingles. But I wanted something different for the gable area, so here I used fish scale (half-round) shingles (Fig. 6). I found both types at a local hobby shop. They are also included in the hardware kit offered by Woodsmith Project Supplies. Call 1-800-444- 7527 for information. There are a few tricks that will help you align the shingles properly. The Shop Tip below shows you how.

**TRIM STRIPS.** Finally, to cover the exposed edges of the sides and shingles, I attached 1/4"-thick trim strips (F), using a water-resistant glue (Fig. 6). Since the angles make it tough to secure these pieces with clamps, I just held the strips in place with my hands until the glue



became tacky.

## SHOP TIP

The angled sides of the feeder posed a challenge when it came time to install the shingles. I couldn't use the slanted edges as vertical reference points. So I decided to lay the shingles by working outward from a vertical centerline (see drawing).

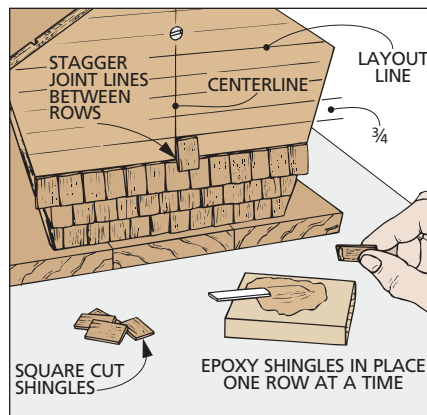
I also marked layout lines to help maintain a 3/4" spacing from the bottom of one course (row) to the bottom of the next (see drawing). Once the lines are drawn, the bottom row of shingles can be glued in place.

**Note:** Because of its strength and gap-filling abilities, I used quick-set (5-minute) epoxy to attach the shingles.

With the first course complete, you can lay an overlapping second course. Work your

way up the side, one course at a time, overlapping each course as you go.

There are just a few tips to keep in mind. First, I found it easiest to let the end shingles hang over the edge, and then come back and trim them flush with a utility knife (see photo).



## Attaching Shingles

Second, the shingles look best if they're staggered between courses (just like real shingle siding). To do this, it's simply a matter of shifting each alternating course half a shingle's width from the course immediately below it.



## SEED STOPS & PERCHES

Before starting work on the copper roofs of the feeder, there are a few things that need to be done.

First, to create the outer walls of the food compartments, I cut two pieces of acrylic plastic to fit in the grooves in the end pieces (Figs. 7 and 7b).

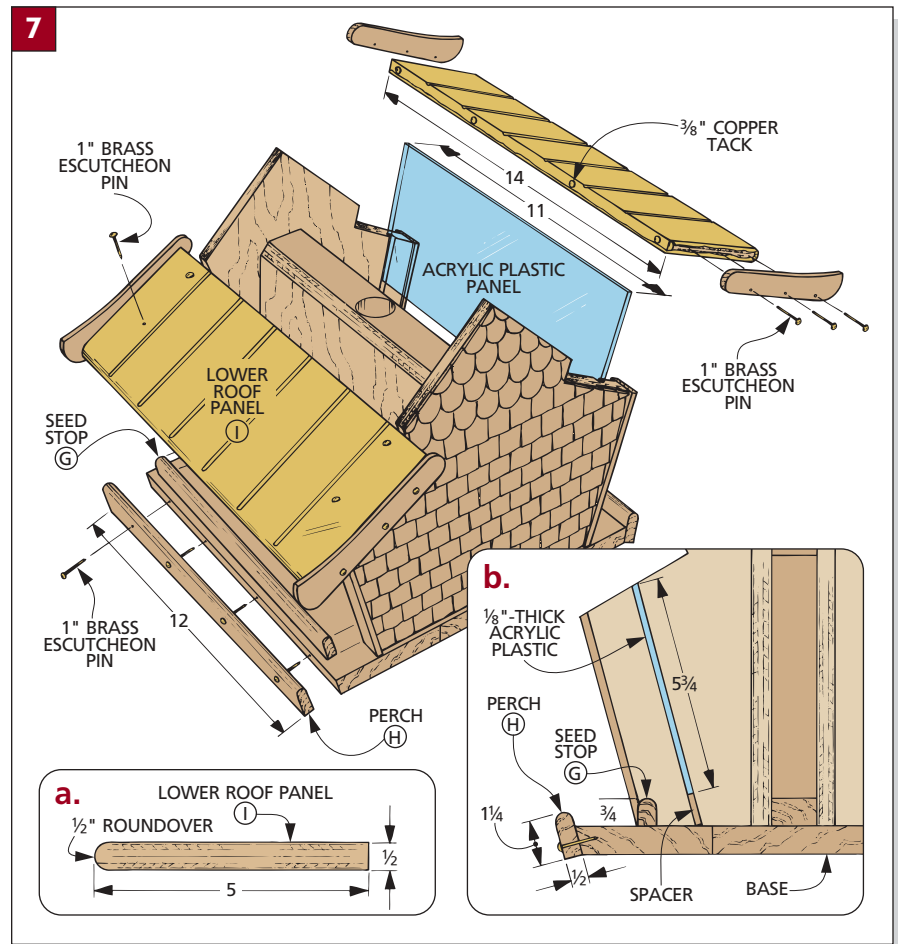
**SEED STOP.** Next, to prevent bird seed from spilling out, I added a seed stop (G) to each side. To make these stops, I rounded over one edge of an oversize blank of 1/2"-thick cedar. Then I ripped the blank to a finished width (height) of 3/4" (Fig. 7b). Finally, cut the seed stops to fit between the ends (F) of the feeder and glue them in place (Figs. 7 and 7b).

**PERCHES.** The last pieces to add to the base are the perches (H). These 1 1/4"-wide pieces are made the same way as the seed stops. Then they're trimmed to match the length of the base (12") and glued and nailed in place with brass escutcheon pins (Figs. 7 and 7b).

## LOWER ROOF

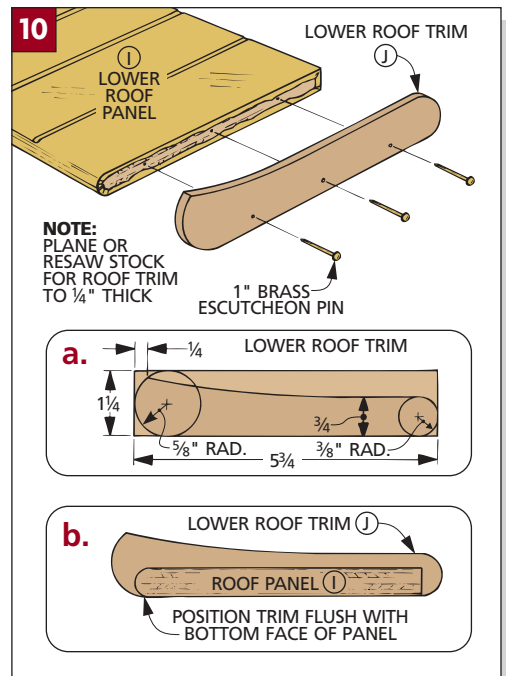
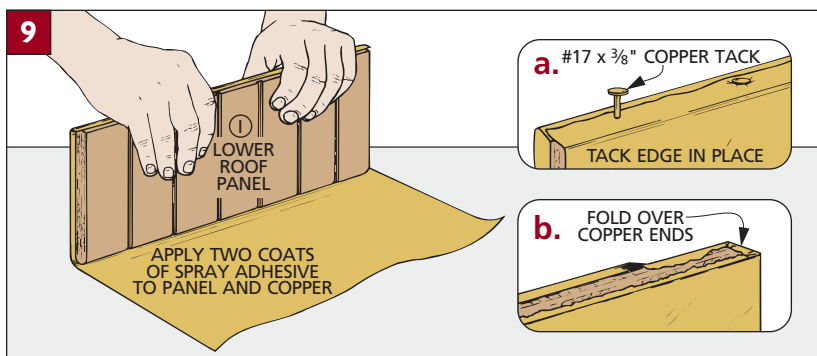
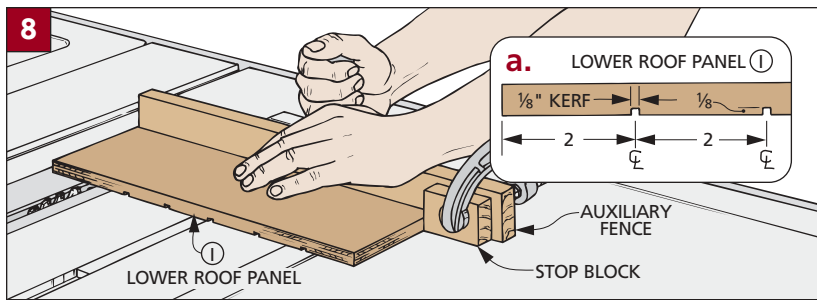
Now you can move on to one of the most eye-catching features of this feeder: the copper-covered roof panels. (For some tips on working with copper, see the Woodworker's Notebook on page 6.)

**LOWER ROOF PANELS.** I started with the lower roof panels (I) (Fig. 7). These are 1/2" plywood cut to a finished size of 5" x 14" with a roundover routed on one



edge (Fig. 7a). Then, to create the look of "seams" in the roof, I cut six evenly-spaced kerfs in the top side of each piece (Figs. 8 and 8a).

The copper foil that covers the roof is trimmed 1/4" longer (14 1/4") than the roof panels. Then, after applying spray adhesive, I wrapped the copper around the



roof starting at the top edge and tacked the foil in place with copper tacks (Figs. 9 and 9a). Next, trim any excess and fold over the ends (Fig. 9b). After the copper is fastened to the roof, lightly press the copper into the kerfs with a dowel to make the “seams” (see the photo below).

**LOWER ROOF TRIM.** To complete the panels, I added lower roof trim (J) to each end (Fig. 10). These pieces are 1/4"-thick cedar attached with epoxy and escutcheon pins flush to the bottom edge of each panel (Fig. 10b).

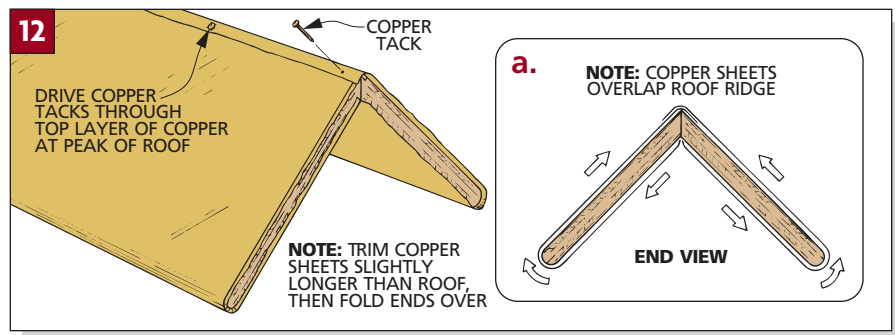
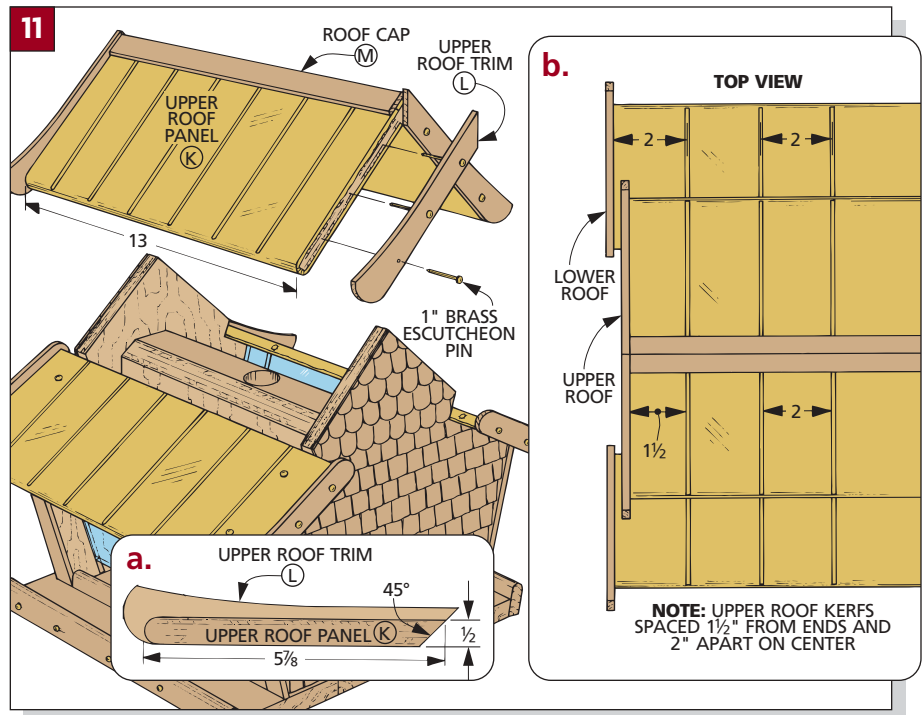
Once the lower panels are complete, they're centered over the ends of the feeder and nailed in place.

## UPPER ROOF

Like the lower roof, the upper roof is made up of two plywood panels. But this time, these pieces are glued together to form an L-shaped assembly. To do this, I started by cutting the upper roof panels (K) to finished size (5 7/8" x 13") with a 45° bevel on each top edge (Figs. 11 and 11a). Then I routed a roundover along the other edge.

Since the upper roof panels are narrower than the lower roof panels, the outer kerfs are spaced a bit differently than those on the lower roof (Fig. 11b). This is so the kerfs will line up between the upper and lower roof. Once these kerfs are cut, the two upper roof panels can be glued together.

**COPPER.** As with the lower roof, trim the copper 1/4" longer (13 1/4") than the upper roof panels. After applying spray adhesive, I wrapped the upper roof,



starting at the underside of the peak (Fig. 12a). Wrap the first sheet of copper around one side until it overlaps the peak. Then, use a second piece to wrap the

opposite side of the roof. Now tack the edge of the copper in place (Fig. 12). Finally, create the decorative “seams” (see the photo below).

# WOODWORKER'S NOTEBOOK

## COPPER FOIL

The 40-gauge copper foil used on the bird feeder roof is about the same thickness as the heavy-duty aluminum foil you'd use in the kitchen. This makes it easy to bend, shape and cut it without specialized tools.

You can trim copper foil easily with a pair of scissors. And since it's so pliable, it can be fastened to a surface using just a spray adhesive. (I used two coats on each surface when attaching the copper to the bird feeder

roof.) Since the feeder would be out in the elements, I also used tacks to hold the copper in place.

**Note:** One thing to be aware of is that you shouldn't use steel brads or nails to secure any type of copper. The contact between the copper and steel forms a small electric current. This isn't dangerous to you (or to the birds), but it will eat away at the nail until it dissolves. Instead, use only copper or brass fasteners.

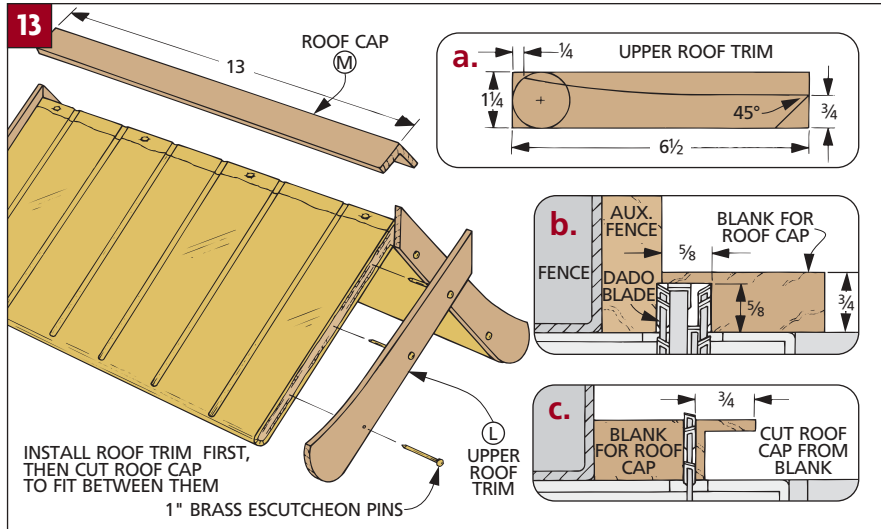


The grooves in the roof simulate the seams between copper panels on full-sized buildings. On the bird feeder, the “seams” are created by using a dowel to press the copper foil into the kerfs cut earlier in the roof panel.

**UPPER ROOF TRIM.** The next step is to attach the upper roof trim (L) (Fig. 13). These pieces are constructed the same as those on the lower roofs except one end of each is mitered (Fig. 13a). Then they're nailed and epoxied to the ends of the roof.

**ROOF CAP.** To cover the seam and tacks, I made a roof cap (M). It's a 3/4"-thick piece cut in an L-shape (Fig. 13).

To do this, first use a table saw and dado blade to make a 5/8"-wide by 5/8"-deep rabbet on one edge of an oversized blank (Fig. 13b). Then rip the roof cap free (Fig. 13c). Now cut it to match the length of the roof ridge (13") and epoxy it in place.



## MOUNTING

To refill this bird feeder, you don't remove the roof, as you might expect. Instead, the upper roof is mounted to the top of a support pipe that passes through the hole in the base of the feeder. When it's time to add more birdseed, all you have to do is drop the base of the feeder.

**ROOF BLOCK.** To attach the upper roof to the end of the pole, I made a roof block (N). This is just two 3/4"-thick pieces of cedar glued together and beveled on the edges to fit under the roof (Fig. 14).

Then I screwed a pipe flange to the bottom of the roof block. This flange allows the roof to be screwed to the threaded end of the support pole.

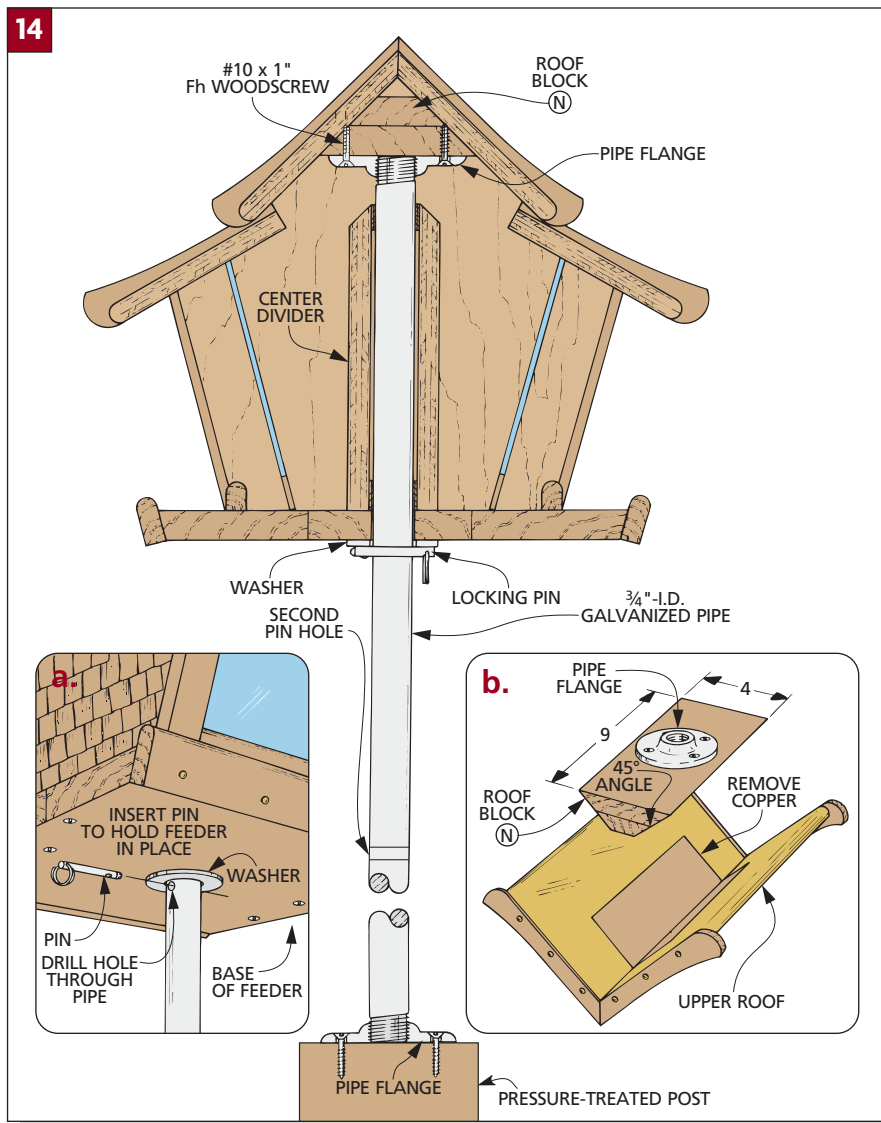
Before attaching the roof block underneath the roof, I removed a portion of the copper foil with a utility knife (Fig. 14b). Then I glued the block to the roof with epoxy, making sure that the block was centered.

**SUPPORT POLE.** To assemble the feeder, simply slip a piece of pipe through the hole in the base of the feeder. (I used a 6'-long, 3/4"-I.D. galvanized pipe.) Then screw the pipe into the flange on the upper roof.

**Note:** Ask to have the pipe threaded at both ends when you purchase it.

The feeder itself is held up with a washer and removable locking pin inserted through a hole drilled in the pipe. To locate the position for drilling the hole, hold the feeder up against the roof (Fig. 14). A second hole drilled below the first allows you to reposition the pin and drop the feeder down to refill it with birdseed.

To mount the pole, I screwed a



second pipe flange onto the end of a short, pressure-treated post. I mounted the post in a hole with ready-mix con-

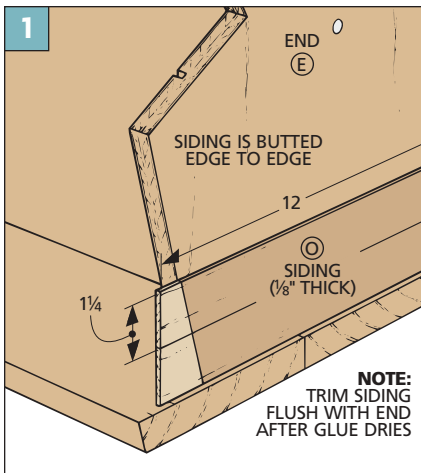
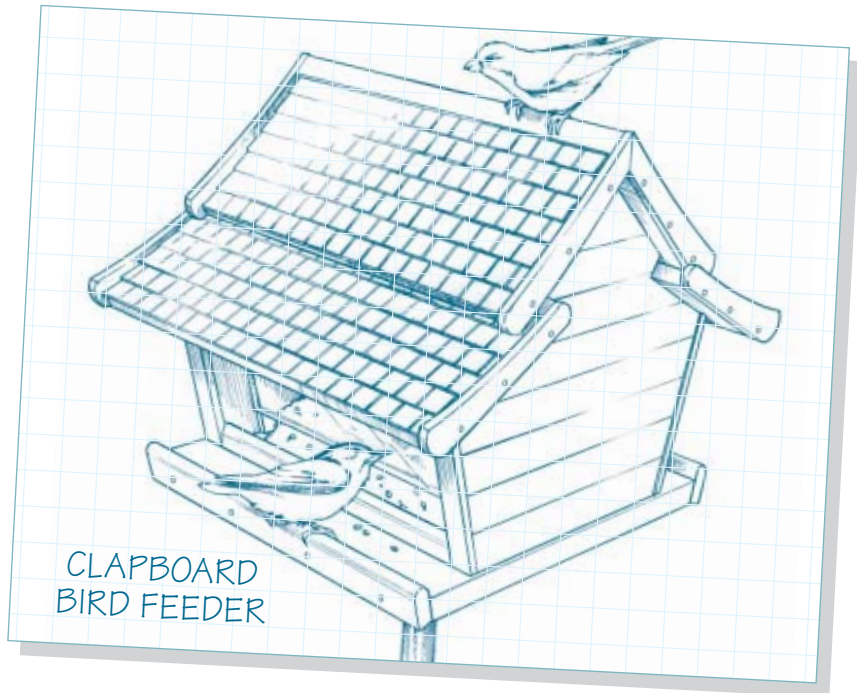
crete, and then screwed the pole into the flange (Fig. 14).

# DESIGNER'S NOTEBOOK

Just a few cosmetic changes give this version of the Bird Feeder a different look. It's built the same as the original, except that strips of siding are used on the ends and square shingles are used on the roof.

## CONSTRUCTION NOTES:

- For this variation of the Bird Feeder, construction is the same until it's time to apply the siding on the ends.
- After the end pieces (E) have been fastened to the divider, cut the siding strips (O) (Fig. 1).
- The clapboard siding is butted edge to edge (Fig. 1). Start by gluing the bottom strip in place, leaving an overhang on each end. Then butt the next strip in place. As you work up to the narrower top portion, cut one long strip to make two shorter siding strips.
- Once the glue has dried on the siding, trim them flush with the edge of the end pieces. Then attach the trim strips (F).
- The roof panels (I, K) are cut slightly narrower to allow for a fascia strip added later and the overhang of the shingles (Fig. 2). You won't need to cut the decorative kerfs.
- A fascia strip (P, Q) is attached to each roof panel to hide the plywood edge (Fig. 2). These 1/4"-thick strips are wider than the thickness of the plywood and have a 5° bevel cut on one edge (Fig. 2a). This raises the bottom row of shingles slightly.
- Glue the fascia flush with the bottom edge of the roof panels (Fig. 2).
- Lay out and fasten the shingles to the roof the same way you would have for the siding on the regular Bird Feeder. The bottom row should begin 7/8" from the outside face of the fascia (Fig. 3). Space the remaining courses 3/4" apart.
- Now cut the upper roof trim (L) to length (6 1/4") and glue it in place (Fig. 2).



**MATERIALS LIST**

**CHANGED PARTS**

- I** Lower Roof Panels (2) 1/2 ply - 4 1/2 x 14
- K** Upper Roof Panels (2) 1/2 ply - 5 1/8 x 13
- L** Upper Roof Trim (4) 1/4 x 5/8 - 6 1/4

**NEW PARTS**

- O** Siding (14) 1/8 x 1 1/4 - 12
- P** Lower Fascia (2) 1/4 x 9/16 - 14
- Q** Upper Fascia (2) 1/4 x 9/16 - 13

**HARDWARE SUPPLIES**

(1) additional bag of square cedar shingles. Do not need copper sheets, copper tacks, or fish scale cedar shingles

