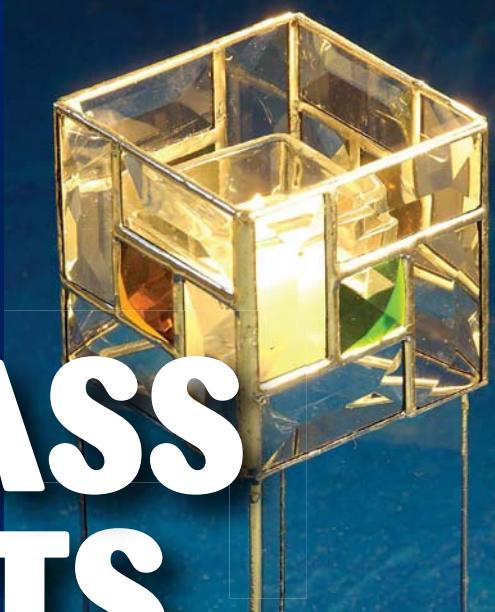


40 Great STAINED GLASS PROJECTS



Michael Johnston

INCLUDES FULL-SIZE PATTERNS

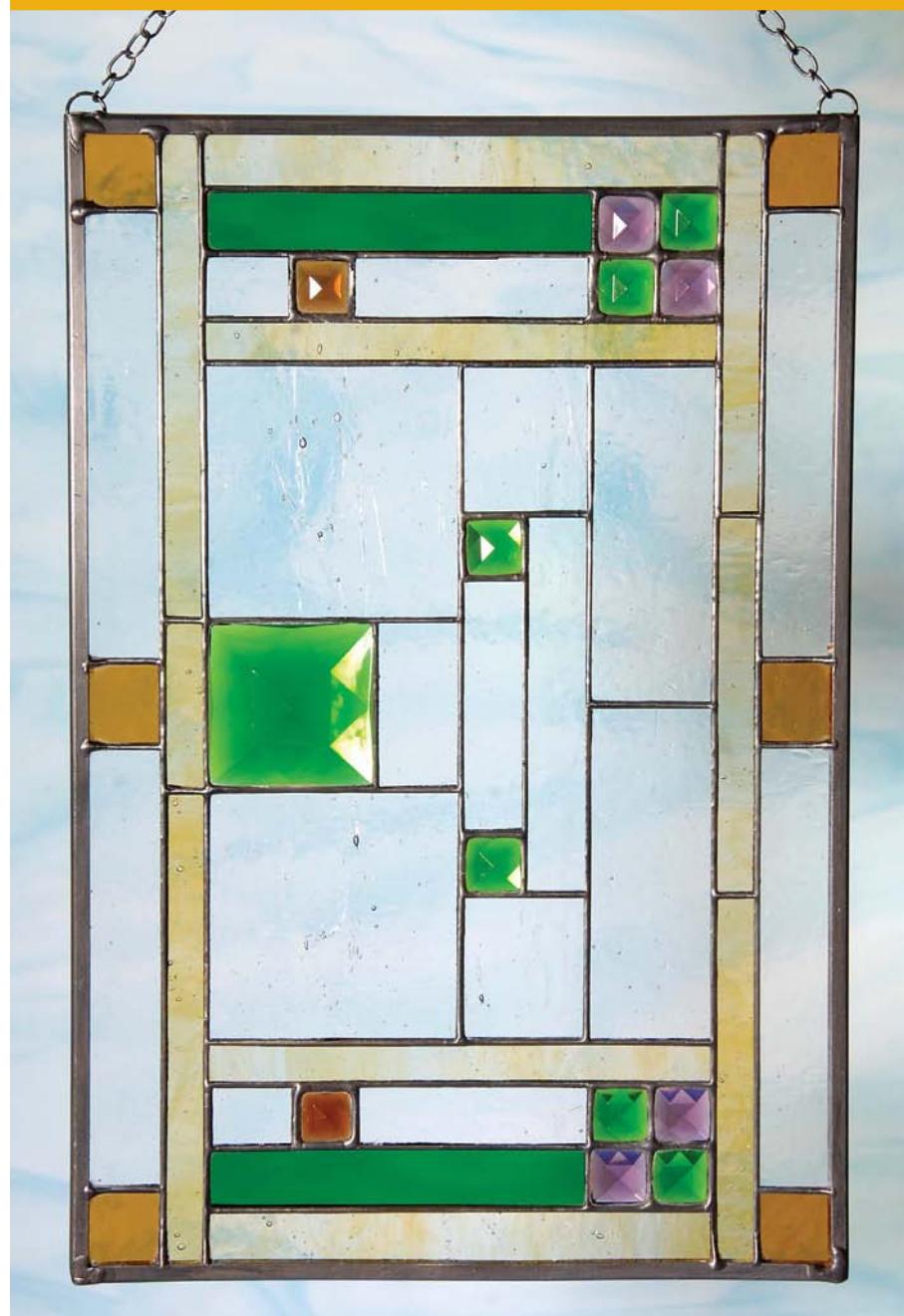
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The First Project

PROJECT 1

Prairie-Inspired Panel



MATERIALS LIST

Clear seedy glass (less than
 $\frac{1}{2}$ square foot)
 Amber streaky glass (less than
 $\frac{1}{2}$ square foot)
 18 mm square jewels (12)
 50 mm square jewel (1)
 1/4-inch U-lead (4 feet)

In this project we have incorporated a large glass jewel and several smaller ones. The glass cutting is easy since the piece features only rectangles and squares; this also makes the soldering easier. We are including all the steps to complete this project in detail; you can refer to this as you set up and work through the rest of the projects.

Patterns on insert 1

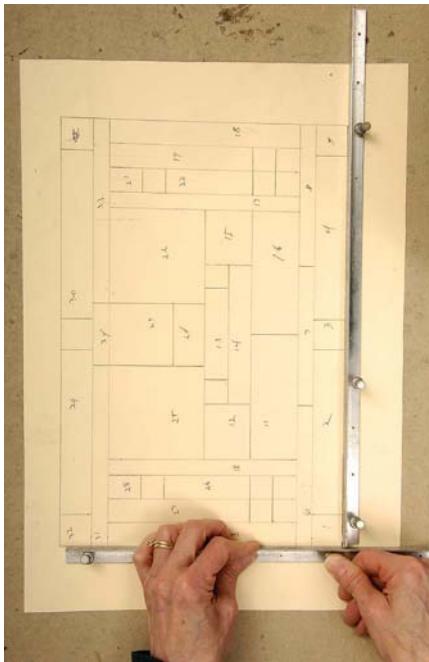
PRO TIP: To prepare the glass for foiling, wash all pieces with a cleaner (we use Simple Green). Pay particular attention to the outside edges, removing all the grinding dust.

Preparing the Pieces

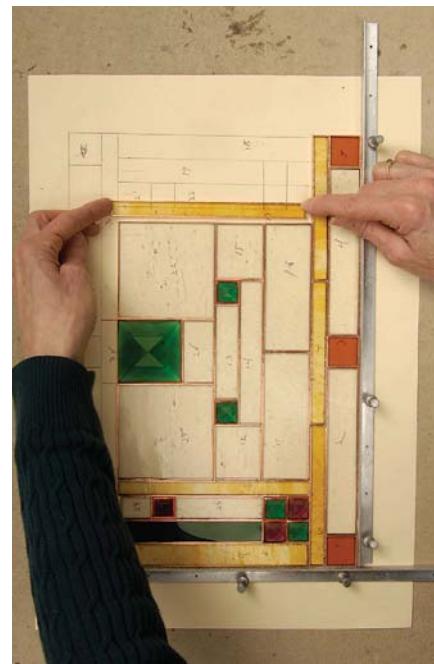
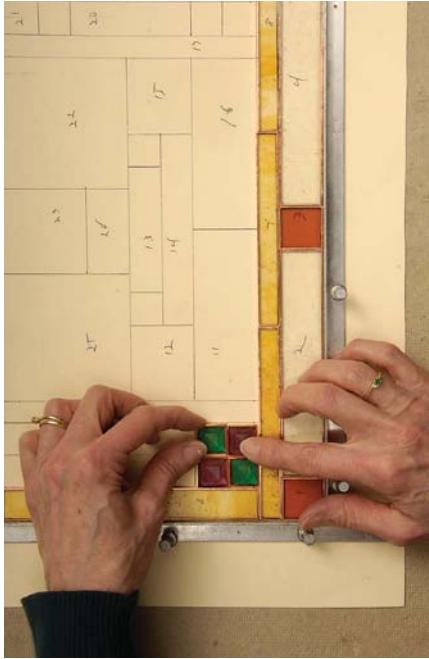
1. Foil all the pieces with $\frac{3}{16}$ -inch black-back copper foil ($\frac{3}{16}$ -inch foil is fairly narrow and we chose it because we wanted narrow solder lines. We chose black-back foil because we were using all transparent glass and we planned to use a black patina).

Assembling the Panel

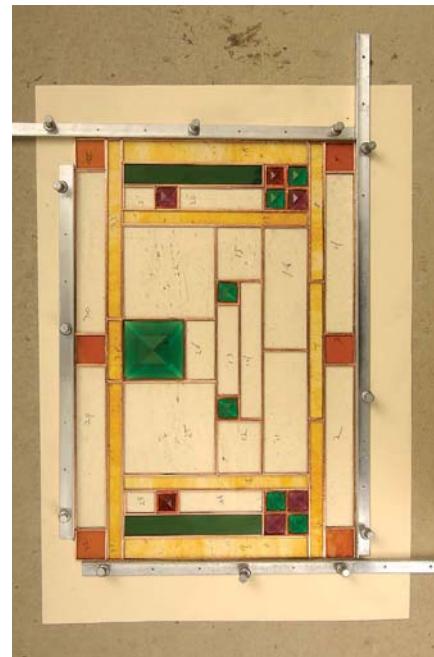
2. On a sheet of homasote board (plywood or ceiling tiles are suitable alternatives), attach layout strips to the right and bottom edges of the pattern.



Position all the foiled pieces in their respective places on the pattern sheet.



Attach layout strips to the top and right edges.

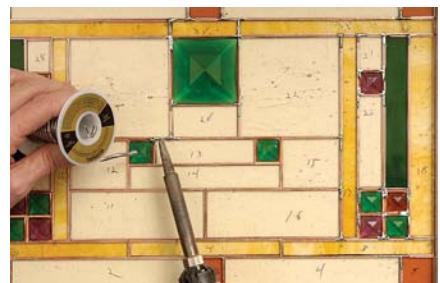


Apply flux to all the copper seams.



If any pieces move during the fluxing stage, reposition them.

Connect all the pieces by tack soldering them where three or more pieces meet.



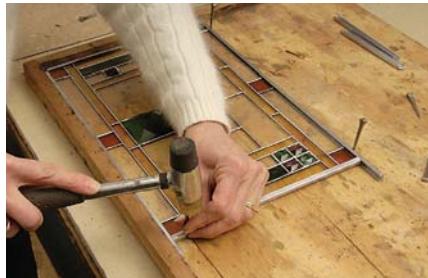
3. Remove the layout strips and bead solder all seams on both sides. If you're new to soldering, try flat soldering the panel first, and follow with the beading coat.



Attaching Lead Channel

4. For most copper foil panels we finish the outside edges with lead came (channel). For this project we chose $\frac{1}{4}$ -inch U-lead. A plywood workboard with strips that form a 90-degree angle is used.

Cut two pieces of lead that are about 1 inch longer than the panel and another two pieces that will fit between the longer pieces. Hold the leads in place with nails.



Solder the corners and all other locations where the interior solder lines meet the outside leads.



Use lead cutters to cut off the extra lead.



5. Attach hooks to the back corners. Small metal rings are fine for a project this size.



6. Finish the project using the 6-step process outlined in chapter 3.

Boxes

PROJECT 16

Alternative Hinge Box

MATERIALS LIST

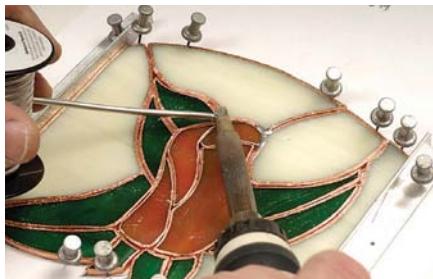
Glass for box—Spectrum 88437
(1 square foot)
Scrap glass for flower—Wiss-
mach 27
Brass tube hinge set
Felt pads



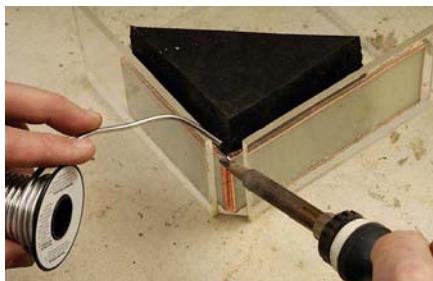
This box uses a hinge device that is different from those in the other boxes in this book and does not require a safety chain. You can substitute other flower designs or one of the critters from project 23 in the lid; to do this trace the perimeter of the lid and lay it over a new design. Draw any necessary break lines. If it looks good, then try it.

Patterns on pages 171 and 172

- 1.** Using layout strips, solder the lid together. Edge bead the outside.



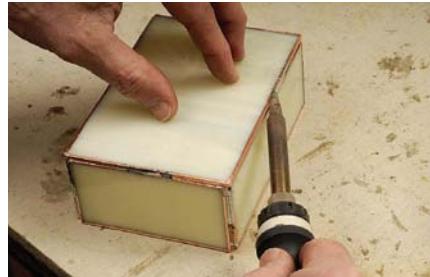
- 2.** Using a boxer or other supporting method, tack solder a short and long side (B and C) together. Remember: inside edges should be touching.



Add the remaining two sides.

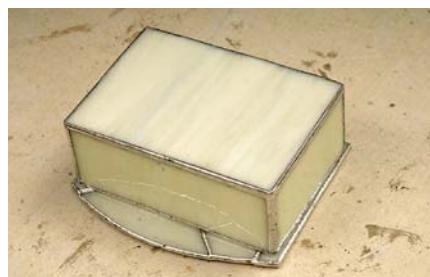


- 3.** Center the bottom piece and tack solder at two places on all four sides. Bead solder all seams, inside and out, and edge bead the top edge.



Installing the Lid

- 4.** With the lid face down, place the box unit so it is centered from side to side and about $\frac{1}{2}$ inch from the back at both corners.



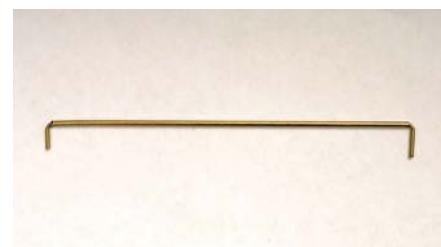
Place the larger hinge tube even with the vertical box seam and mark it at the same point at the opposite side. Cut the hinge as detailed in chapter 2.



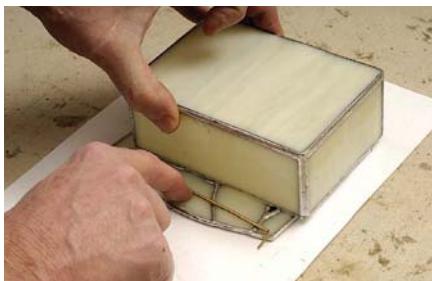
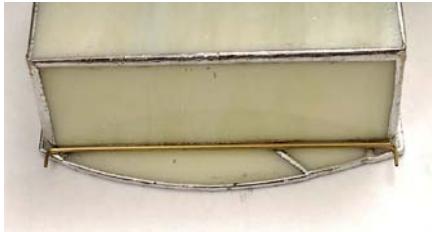
Cut the smaller tube about 2 inches longer than the larger tube. Insert the smaller tube through the larger tube, extending it out about 1 inch. Bend the small tube to a 90-degree angle.



Repeat for the opposite end, making sure that the second bend allows the hinge to lie evenly on the table.



- 5.** Place the hinge set on the lid as shown, hold it into place, and push the box away to avoid attaching solder to it.



Solder the hinge at both left and right seams and at the one toward the middle.



- 6.** Position the lid on the box and hold the unit at an angle so that the solder will not run back into the box.

Tack both ends of the inner tube to the vertical seams of the box.

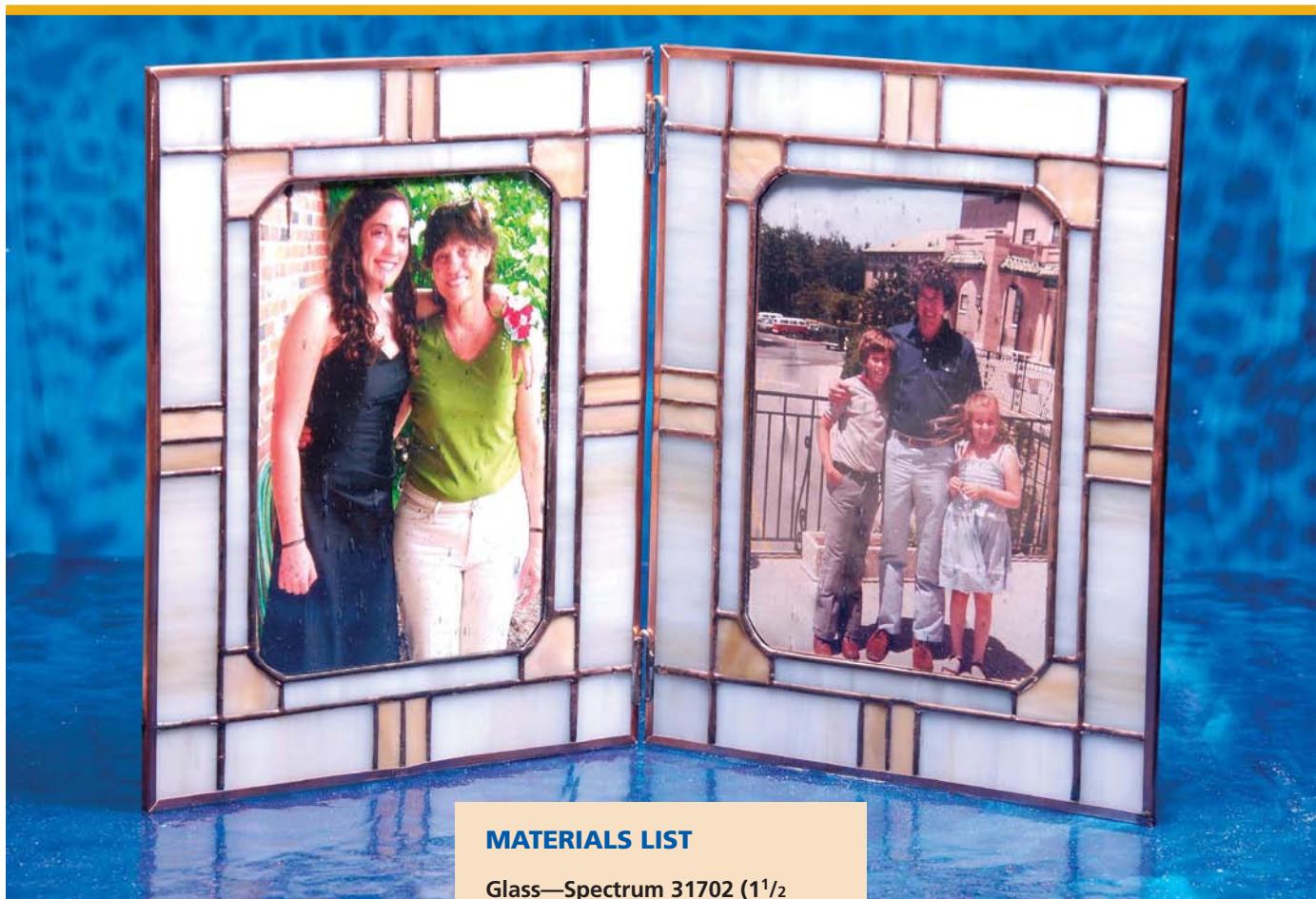


Smooth out the solder on the inner tube ends.

- 7.** Clean and finish according to the procedures detailed in chapter 3.

PROJECT 25

Double Hinged Photo Frame



A popular item in our studio over the years has been a double picture frame displaying a photo of a married couple on their wedding day and a copy of their wedding invitation. This frame can be taken apart for mailing or storage. It can also be embellished by adding an overlay item such as a flower.

We are framing the edges in $\frac{1}{8}$ -inch channel and employing a different method of cutting from the one shown in the previous project. Chapter 2 shows this method in detail. Since we are planning to finish this project in copper, we chose copper channeling.

Patterns on insert 2

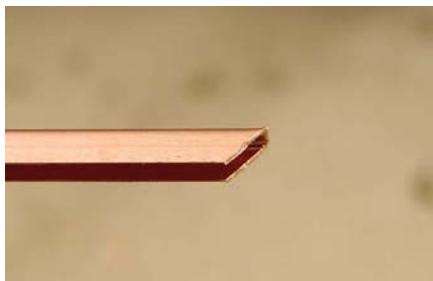
- Solder the frames.

MATERIALS LIST

Glass—Spectrum 31702 ($1\frac{1}{2}$ square feet), Spectrum 3172 ($\frac{1}{2}$ square foot), Spectrum 100 seedy (1 square foot)
 $\frac{3}{32}$ -inch brass tube
 $\frac{1}{16}$ -inch brass rod
 $\frac{1}{8}$ -inch copper U-channel (12 feet)

- Take a 3-foot piece of channel. Cut one end at a 45-degree angle.

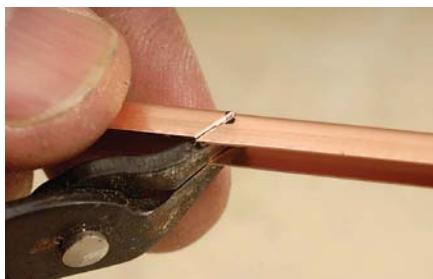




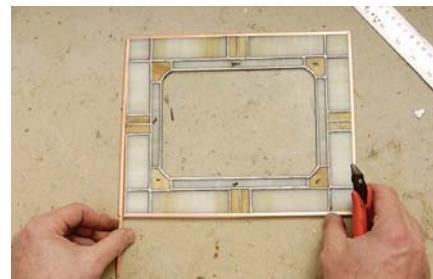
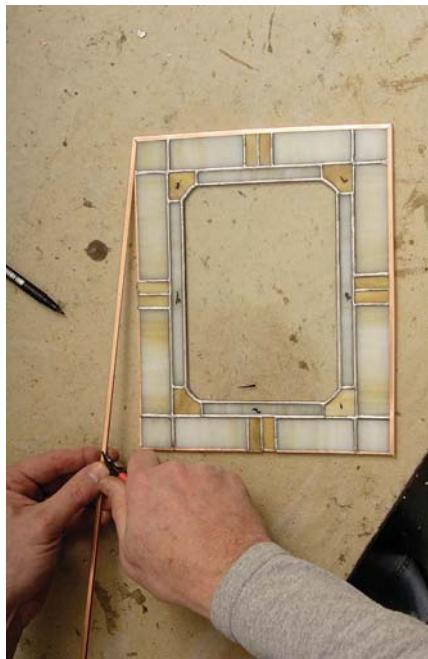
Place the copper over a side of one of the frames. Mark where it needs to be notched at the opposite end.



Cut a 45-degree angle on both the left and right sides (top and bottom).

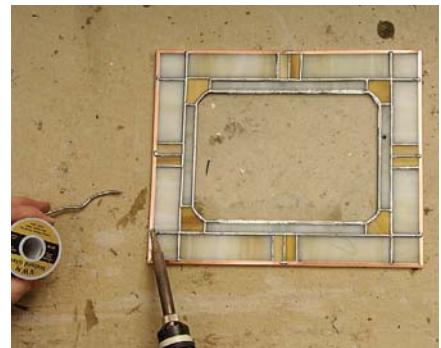


3. Bend the channel, place it onto the frame, and notch the next two corners.



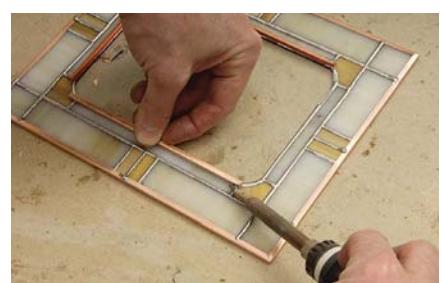
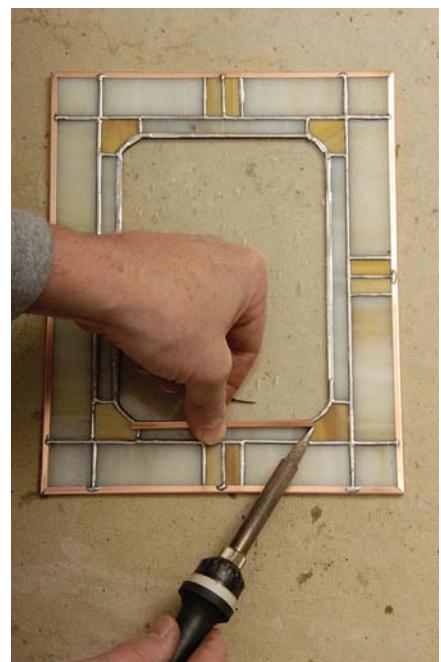
Measure the last length of channel and cut it so it meets the end of the channel where you started at a 45-degree angle. Solder at this point.

4. On the back, solder the copper to the glass frame at three places on each side.

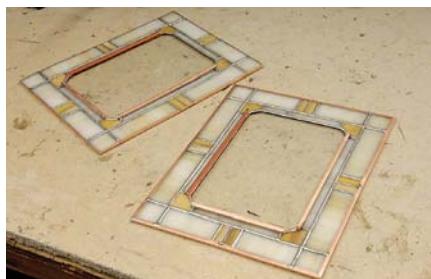


Attaching the Rear Channels

5. Because the interior corners are rounded, we will use three separate copper channels to support the photos. Cut them about $\frac{1}{4}$ inch longer than the straight edge of the clear glass. This will allow you to tack solder onto the seams at the corners of the yellow glass.



Put the copper framing and photo supports on the other frame.



Attaching the Hinges

6. The smaller brass tube that is used for box hinging would not work here because it cannot be bent into a U shape without breaking. Instead, cut two 1½-inch pieces of ¼-inch brass rod.



Pro Tip: Our frames accommodate vertical pictures. You can make a picture frame that works with horizontal pictures by attaching the hinges on the short sides.

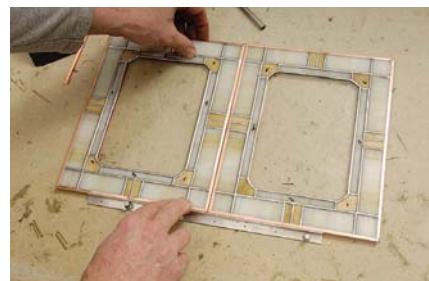
At about the ½-inch point of each rod, bend it into a tight loop with needle-nose pliers.



Cut two lengths of the larger box tube (¾-inch) approximately 1 inch long. Insert these over the shorter legs of the small rods.



7. Lay the two frames side by side with a layout strip at the bottom. Check to make sure that the rear channels on the frames are lined up the same.



After fluxing, hold the left side of the bottom hinge and solder down the right side. This is the side with the bent rod. Solder the top hinge in the same way.



Pro Tip: Exercise care so that solder does not get between the two frames or onto the other side of the hinge. Using a narrow tip on your iron will help.

Solder the tube side of each hinge, again keeping the iron away from the opposite side of the hinge.



Stand the frames up and see how easily they separate.

8. Decide how you want to finish the project and follow the steps in chapter 3.

CRAFTS/Stained Glass



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