

# Lunar Eclipse Pendant

By Valorie Clifton

This intermediate level course is intended for those with some skill in the areas of sawing, riveting and soldering.

This pendant is my representation of the lunar cycle. Hints of the graceful arcs of waxing and waning moons are present, and a central, dark lunar eclipse was created using Wubbers EnCapture Artisan concrete.

I created a template to accompany this course, complete with the shapes to cut out of the metal and placement marks for the holes to be drilled for the rivets.

I created this using copper and brass, but it would look great in silver or other mixed metals. The finished size is approximately 3 inches long by 1.5 inches wide.



## Materials List

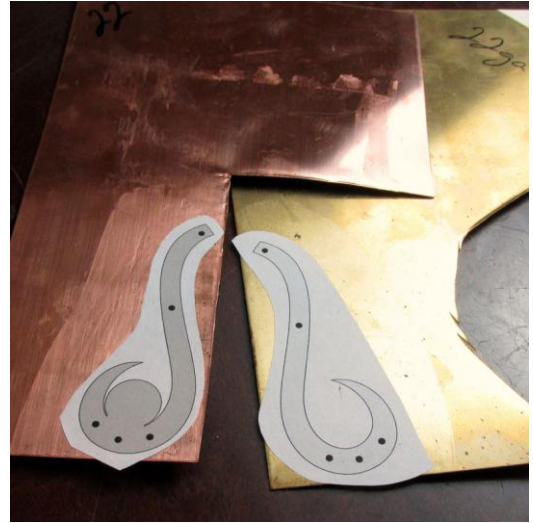
- 22 gauge copper sheet
- 22 gauge red or yellow brass sheet
- 26 gauge copper sheet OR 6mm wide bezel wire
- Wubbers EnCapture Artisan Concrete with black pigment powder
- 4 - ¼ inch long, 14 gauge nail-head rivets (or you can create your own rivets using 14g. wire)

## Tool List

- Safety glasses and particulate mask
- Rubber cement
- Jeweler's saw and blades, size 2/0 or 3/0
- Bench pin
- Torch and soldering pad for annealing
- Template (provided with this tutorial)
- Flat jeweler's file with fine teeth
- Half round needle file
- Sandpaper or sanding sponges, medium and fine grits
- Polishing supplies
- Cylindrical, diamond coated burr (optional, for texturing)
- Flex shaft or rotary tool
- Gwen Youngblood's Riveting Essentials Kit (optional)
- Sharp wire cutter pliers
- Bench block or anvil
- Textured, rusty iron or concrete (optional, for texturing)
- Liver of sulfur (optional)
- WUBBERS Large Oval Mandrel Pliers
- WUBBERS Apprentice Flat Nose Pliers
- WUBBERS Artisan's Mark Sharp Texture Hammer
- 1.5mm drill bit
- Awl or metal punch
- Medium sized, hard rubber mallet
- Alphabet design stamps and stamping hammer (optional)
- Small ball peen hammer or a riveting hammer

### Step 1:

Print the template and cut out the two pieces for the pendant. Using the rubber cement, glue the “copper” template piece to 22 gauge copper and glue the “brass” template piece to 22 gauge brass; coat both the metal and the back of the paper for best adhesion. Allow the glue to dry (it doesn’t take very long at all). *Don’t worry about excess glue on the metal sheet; it can be easily rubbed off later.*



### Step 2:

Using the jeweler’s saw and bench pin, carefully cut out the shapes. If your sawing skills aren’t precise, try to err on the outside of the lines. Later, the metal can be filed to the lines if needed.

*It’s recommended to leave a little extra metal on the copper piece where the concrete focal will go. After the bezel is soldered in place, the excess metal can be trimmed with the saw and filed flush with the round bezel.*

I’ve provided two of each shape on the template in case a mistake occurs during sawing.



Here are the two sawn pieces. Do not remove the paper just yet! The paper is needed to mark the rivet holes for drilling.



### Step 3:

Using the awl and mallet or a metal punch, mark the holes for drilling where indicated by the black dots.

*The divots created by the awl make it easier to begin the drilling process without having the drill skitter across the metal.*



### Step 4:

Carefully drill the holes in both pieces where indicated by the black dots and the divots. I leave the paper on for this step.



### Step 5:

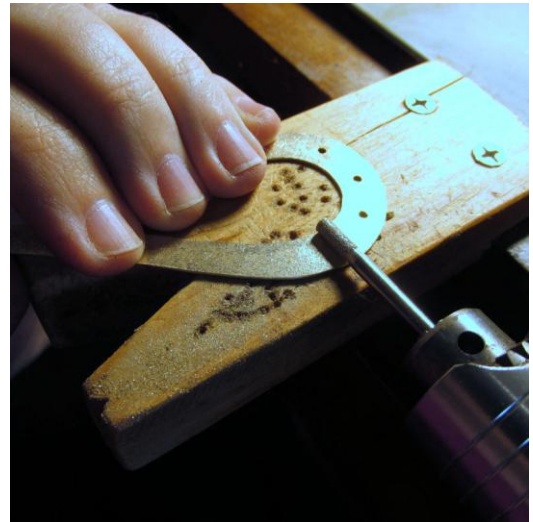
Using the flat file and half round needle files, carefully file any sharp edges and burs, and then sand both pieces smooth using sandpaper or sanding sponges. Try to maintain the curves. The filing can be done with the paper still attached (if edge cleanup is needed) or you can remove the paper. I removed my paper.



### Step 6:

Using the diamond bur in the flex shaft or rotary tool, carefully texture the front of the brass section of the pendant. Refer to the template photo to ensure the correct side is being textured.

This is a suggested texture; however, design stamps, hammers or other texturing methods can be used.



For the copper side, I chose to texture the front using an old, rusty iron and the rubber mallet. Another great option is to hammer the piece face down over a sidewalk or concrete floor. Don't hit your finger! It hurts.

*When hammering on surfaces, I prefer to use rubber mallets because the rubber conforms to the shapes and textures, creating a better texture; it also won't harm my texture tool like a steel hammer would.*



### Step 7:

If desired, this is a good time to also initial, sign, stamp a maker's mark, etc. on the BACK of the copper side where the concrete will sit.

It's also a good idea to flatten the piece after all that heavy texturing using the mallet and a flat bench block or anvil.



### Step 8:

Using the bezel strip piece from the template (or just measuring a piece of bezel wire to match), cut the bezel wire for the well out of 26 gauge copper.

Solder the bezel strip together to form a circle, and then solder the bezel to the copper.

*An alternative is to use a pre-purchased bezel cup that is 18mm diameter and 6mm deep; this cup can be riveted to the back plate if soldering is difficult.*

Pickle if desired. I prefer to leave my copper darkened. Brass brush both pieces with soapy water; rinse and dry the pieces.



### Step 9:

It's time to rivet the pieces together! Insert a nail head rivet through the bottom center hole of both pieces (*make sure the necks of those pieces cross correctly, using the template diagram as a reference*).

Cut the wire to the correct length (*I used Gwen Youngblood's Riveting Essentials gauge for 14-gauge wire as my guide*).

Carefully set the bottom edge of the pendant flush along the edge of an anvil or bench block, taking care not to mar or crush the bezel wall. The bezel wall should rest along the side of the bench block.

Using a small ball peen hammer or a riveting hammer, gently spread the rivet in the back of the piece; planish the rivet flush to finish.

Repeat this process for the other rivets along the bottom edge.



### Step 10:

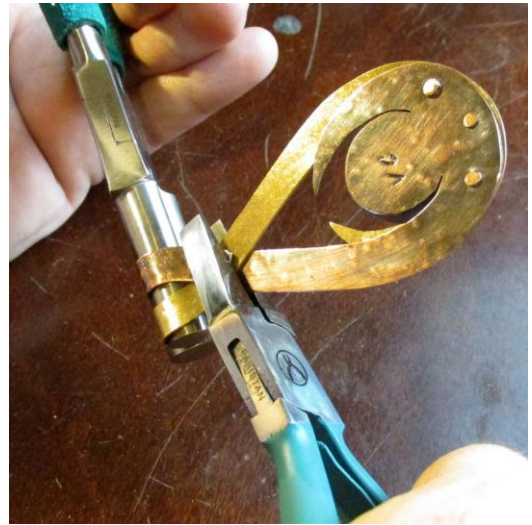
Using the smaller oval jaw of the Wubbers Large Oval Mandrel Pliers, carefully bend the top portions of the pendant to the back of the pendant to create the bail. *The metal strips should look similar to the photo, with the holes lined up and crossed according to the template diagram.*

Use the Wubbers Apprentice Flat-Nose pliers to place a bend in the end of the bail where the two metals meet.



### Step 11:

Use the Wubbers Apprentice Flat-Nose Pliers to make sure the front and back of the pendant are flush with each other for riveting. *It's best to do this part while the bail is still wrapped around the Wubbers Large Oval Mandrel Pliers.*



### Step 12:

If needed, use the awl to help align the holes in the bail portion for riveting.

Once aligned, repeat the riveting process for the bail, securing the front and back portions of the bail together.



### Step 13:

After the riveting is finished and the form of the pendant is perfected and tweaked to your liking, check for any rough edges and sand as needed. I also took the Wubbers Artisan's Mark Sharp Texturing Hammer and created a slight texture along the top of the bezel wall.

*At this point, oxidize and polish the pendant to your liking. It will be more difficult to oxidize the pendant once the concrete is in place.*



#### Step 14:

To protect my pendant, I've taken a circle of paper and cut a small hole from the center. Place the paper over the bezel portion of the pendant. Another option is to use painter's tape.

Prepare the Wubbers EnCapture Artisan Concrete according to package directions, using the included black pigment powder. I added just a little more of the liquid solution to mine for a soupier texture - approximately 1-2 oz. extra.

Carefully fill the bezel cup to the top with the solution. Gently tap the side of the bezel wall with a wooden dowel or a similar, non-marring tool to remove excess air bubbles and to vibrate the liquid to the top for a smoother finish (*a process known as Liquefaction, frequently seen during earthquakes where buildings sink into the seemingly dry earth*). You can also gently tap the back of the pendant on the table top, taking care not to splatter concrete. Light concrete spills can easily be removed after drying.

*Remember that the bail will cause the pendant to sit at an angle, so position the pendant with the bail hanging off a flat surface so the pendant is level. Allow the concrete mixture to dry overnight.*



#### Step 15:

The concrete can be lightly sanded very carefully, avoiding marring the edge of the bezel wall. Sanding the surface may reveal air bubbles underneath, but since this is a moon, pockets and light texture are OK.

I was able to lightly polish my concrete using a polishing compound and a muslin buff. Whether to sand and polish the concrete is your decision.

Congratulations! Your pendant is complete!



## Review Questions

- 1) True or False: Excess rubber cement is very difficult to remove from sheet metal.
  - a) True
  - b) False
  
- 2) Why is it a good idea to use a rubber mallet for texturing metal?
  - a) The rubber conforms to the shape of the texture, creating a better result.
  - b) The rubber doesn't hurt if you accidentally strike your fingers.
  - c) The rubber mallet is larger than a steel hammer.
  
- 3) True or False: You can use a rubber mallet to flare rivets.
  - a) True
  - b) False
  
- 4) True or False: It's a good idea to oxidize and polish the pendant before preparing the concrete portion.
  - a) True
  - b) False
  
- 5) True or False: If your sawing skills aren't perfect, it is better to saw outside the lines and file the metal to the lines later.
  - a) True
  - b) False