

Workshop 1: Sunday March 10th 9-4pm

Title: Pewter Medallions

Casting Pewter in Carved Plaster Molds

SAIR program, Art Ed students & alum w/ HS students (15 students maximum)

Objective:

Students will make a relief design casted in pewter. Students will learn how to make a two part plaster mold, carve it, and cast molten pewter into it. Additionally, they will learn how to file, sand, and patina the pewter casting.

Prep:

Plaster 2" x 4" rectangles: each to ½ to ¾ inches deep, MUST BE DRY. Cast these at least 3 days prior to workshop. Let sit in dry and sunny place.

Material needs:

Safety: dust masks, rubber gloves, safety glasses

A empty frame to pour plaster into (I can demo this, so students know how)

40 Prepared Plaster blocks (minimum 2 each, with some spares)

80 or 100 grit sandpaper (6 sheets to share between all students)

Pewter **5 lbs** of R-98 pewter ingot ([link](#))

[Wax carving tools](#) (variety collection to be shared)

Small paint brushes (to wipe plaster dust out of carved area)

Rubber bands

[Crucible for pewter](#) and torch to melt it, or [hot plate](#) with steel pot and metal ladle

12" long, ¼" Dowel rod, or wood stick of similar size (no varnish or oils)

Flat plate to put molds on when pouring (pewter may roll out of mold on to this)

Spru Cutter or Jeweler's Saw frames with #3 saw blades

Files (coarse teeth)

Sandpaper 320 grit (collection to share)

Sanding Sticks 320 grit (collection to share)

[Pewter patina](#)

Steel wool (000 grit)

Paint brushes (to apply patina)

Renaissance wax

THE Step by Step PROCESS

Step 1: Making the plaster block

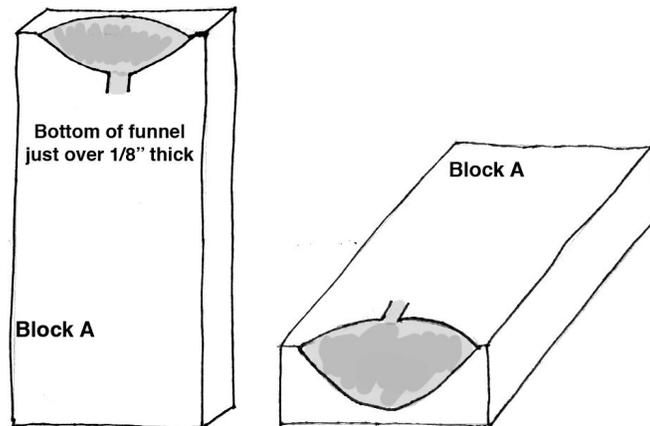
1. Find material to use as walls for your plaster mold. (Wet clay, a container or L- shaped brackets work well) . Mix plaster and pour into the mold walls. You will need two rectangles of similar size. About 2"x4", at ½" to ¾" thick.
2. To mix the plaster, start with warm water, and slowly add plaster to it until you've created a little dry plaster mountain above the surface of the water.



3. Wait for that mountain to become saturated with water (it will happen slowly, be patient and don't touch the plaster).
4. Now mix plaster by hand to ensure all little bumps are gone.
5. **Allow the plaster to dry completely.** Set it in the sun for a few days. When it is dry, it will not be cold to the touch, but room temperature.

Step 2: Carving the plaster blocks

6. First sand down one side of each block so that it is perfectly flat. Use the 80 or 220 grit sandpaper. Hold them against each other. If you see a gap, then it is not flat enough.
7. Use one block now. Carve a half funnel into it using the following guidelines:

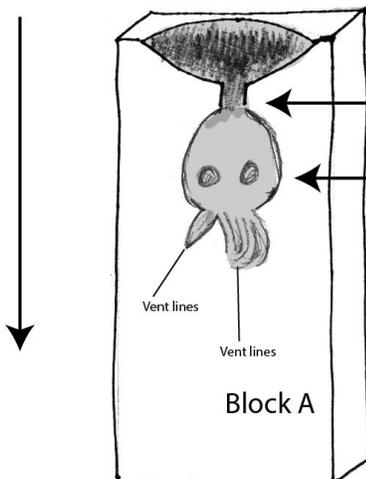


8. Now plan what you want to carve into your plaster.

Keep the following rules in mind:

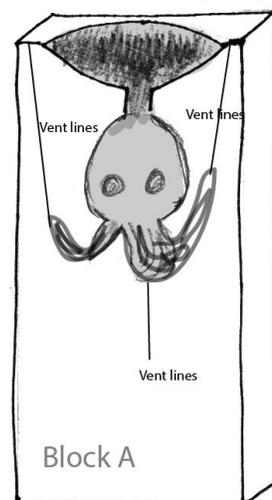
- a. Whatever you carve should attach to the the base of the funnel.
- b. Leave at least $\frac{1}{4}$ " space between your carved area and the edges of the plaster. (you don't want your pewter spilling out the sides)
- c. Add some thin vent lines. The air needs to go somewhere.
- d. Think about how gravity will work. Don't ask the metal to flow upwards

Gravity: All things will flow down



Carved item is connected to the funnel. Pewter will have to flow through.

At least $\frac{1}{4}$ " space between carved area and the edges of the plaster block. Including the bottom.

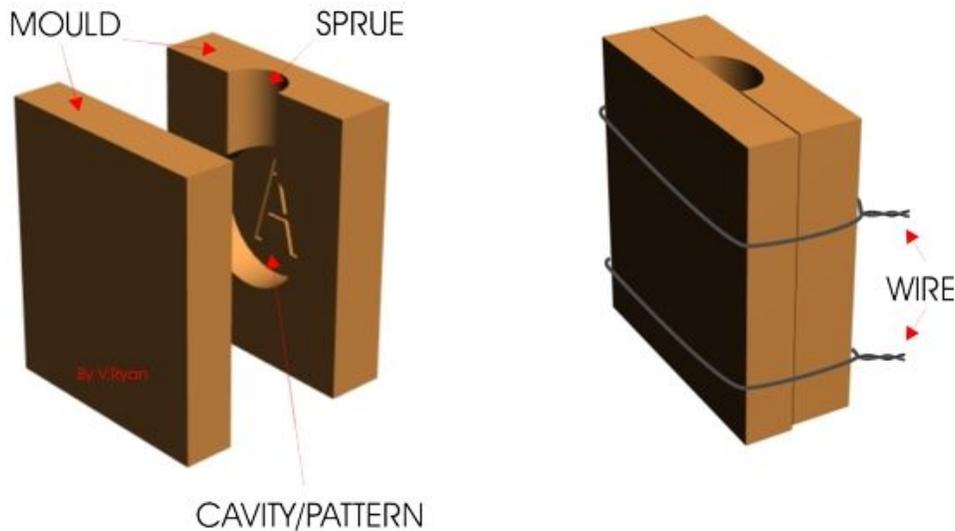
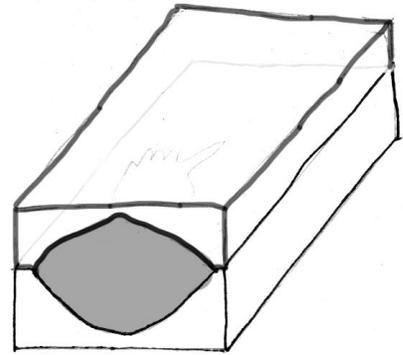


If your design will defy gravity, you will need vent lines that extend upwards.

Vent lines do not need to be very thick. You want to avoid excess clean up later.

Step 3: Getting Ready to Pour

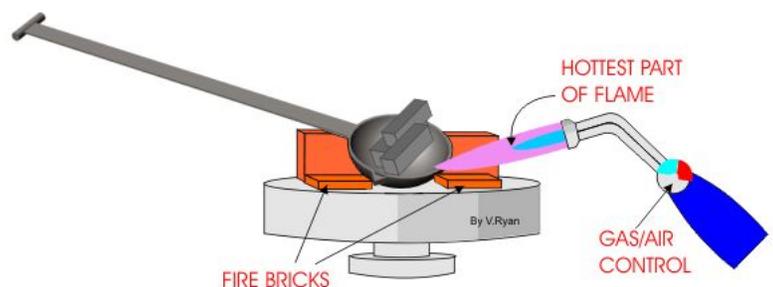
9. Take your second plaster block and place it on top of the one you just carved so that the carving is on the inside.
10. Use a pencil and draw a line along the inner surface of the funnel, transferring the shape of the funnel onto the fresh block.
11. Now carve the funnel onto the new block so that it looks like the other one.
* you do not have to carve the bottom of the funnel, just the mouth.
12. Use binding wire, or rubber bands to hold the blocks together.



**Image found at <http://www.technologystudent.com>*

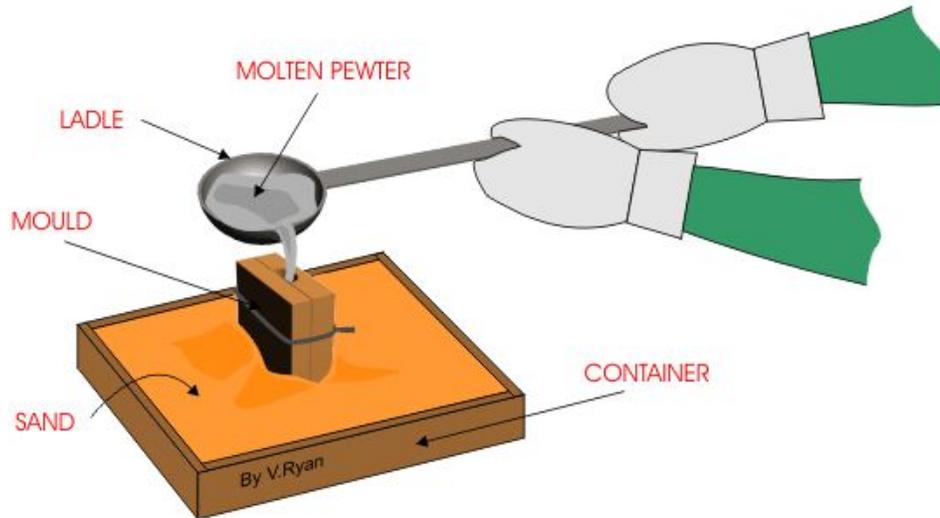
Step 6: Casting the Pewter

13. Place the mold vertically in a soldering pan.
14. Heat the pewter to about 460-465 degrees.
(Either in a metal pot over a hot plate burner or in a small crucible). Keep a wooden dowel handy. Heat the metal until molten. If you feel a vibration with the wooden stick submerged into the metal, then it is slightly overheated. If you are casting a lot, a metal pot and a hotplate is the best solution. You need to use a metal ladle to pour.



**Image found at <http://www.technologystudent.com>*

15. Pour the molten metal into the mouth of the mold. Pour evenly, don't let it dribble one plop at a time.



**Image found at <http://www.technologystudent.com>*

16. Allow to solidify (a minute or so based on the size).
17. With heat safe gloves pull the pewter object out of the mold. IT IS STILL HOT.
18. Quench it in the sink with some cold water for a few seconds.
19. If you like it, YAY. If not, melt it down and cast again. The plaster mold will not handle many pours. The best will likely be your first. But it's worth a try.
20. You may be able to carve a new item with the space and sides that you have left on your plaster squares.

Step 7: Clean up and finishing

1. Using an metal band saw or your jewelers saw, cut off your spru.
2. Use files to clean up any areas that need to be filed down
3. Drill a hole if you made a pendant
4. Use sandpaper to smooth out the filed areas, or any area you want a nice smooth surface.
5. Drill a hole into the base that will fit the drawer pull mechanism
6. Epoxy it into place (don't get glue everywhere).
7. Then patina you pewter until it's all very dark. Brush the patina chemical onto the surface. It will change immediately.
8. Finally, rub fine steel wool over the surface in small circles. This will highlight the raised areas, and allow the recessed areas to stay nice a dark, leaving a beautiful contrast.
9. Seal with a very thin layer of renaissance wax.