

Making 2-Part Plaster Molds

You will need:

- A non-absorbent board for making the mold on
- Clay for building up the model and reinforcing the cottle boards
 - *DO NOT put the clay back in the class buckets after it has been used for moldmaking!
- Murphy's oil soap (release agent)
- Cottle boards
- Clamps
- Plaster and a bucket for mixing
- Your chosen object



1

Before you begin, use some soft clay to fill in any areas on your object that may cause problems with undercuts – smooth over the clay so that it blends in.

Make a line around the halfway point of the object with a marker (tape is used in the images).



2

Balance the model on a pad of soft clay so that the halfway line is perfectly horizontal. Make adjustments until it's perfectly positioned.

Next, begin to build up the bed of clay around the model with soft clay, to the top of the line.



3

Continue to build up the clay bed around the model to the line as shown, allowing at least 2 inches of extra width on each side of the widest point of the model. Try to keep the bed as level as possible as you build it up.



4

When the model has been satisfactorily embedded, level and smooth the clay with a rib, taking great care around the model itself. You can use a small paintbrush to clean clay from the edges of the object.



5

Using cottle boards, start to build the walls around the model. Clamp 2 boards together and then run a thin, soft coil of clay along the inner edge of the boards and up the joint in the corner to prevent any leakage of plaster when casting. Continue to add boards around the model until all sides are secured and reinforced with clay.



6

Create at least three notches (called keys or registration marks) in the surface of the clay around the object. Make sure the marks do not create undercuts. Use a spherical object like a marble or the backside of a tool to create little cup cut-outs. These will hold the 2 parts together tightly for casting.

7

Apply 3 layers of diluted Murphy's oil soap to the surface of the object and the inner walls of the coddle boards. Use a brush and allow each coat to dry in between applications. You do not have to coat the clay, as it will not adhere to the plaster (and it will muddy the brush and soap solution).

8

You are now ready to mix plaster for the first half of your mold. Once you mix your plaster, you must be ready to pour immediately. Double-check that you have properly prepared. Fill a (dedicated plaster) bucket halfway with water for rinsing.

9.

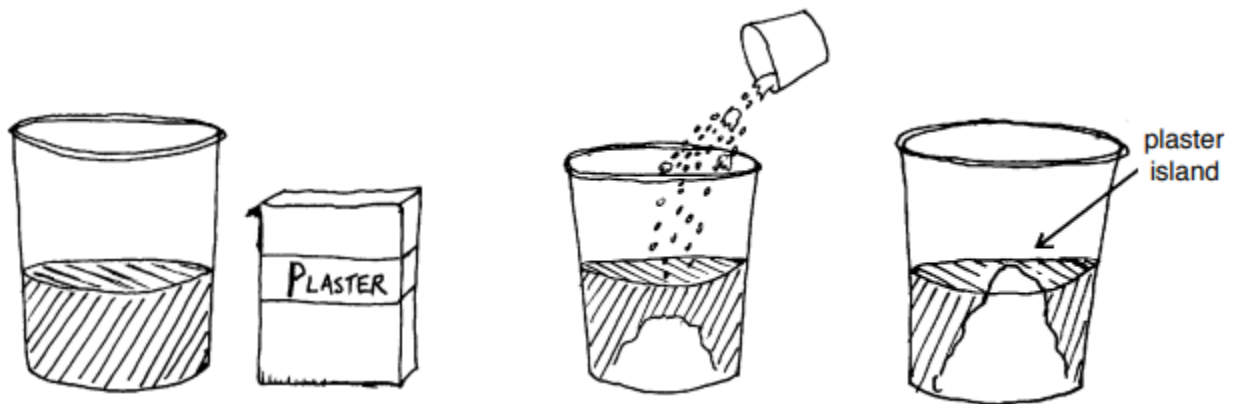
Mixing and Pouring the Plaster:

Preparation:

Begin with a clean bucket. The bucket should be deep enough to allow you to mix enough plaster to fill the mold to at least a one-inch depth above the original. Fill the bucket so that the water level is high enough that it approximates two-thirds the amount of plaster you will need. Ensure there is enough space in the bucket to accommodate the full amount of mixed plaster. Water should be room temperature-warm, if it is too cold or too hot it will impede the curing process and weaken the strength of the final mold.

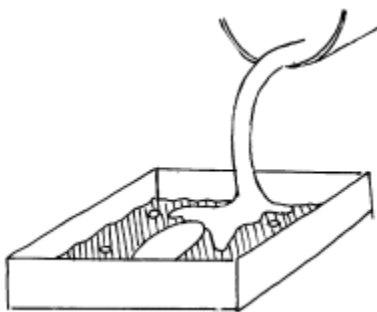
Mixing:

Mix plaster using the 'Island Method'. For the Island method, sift the plaster into the center of the bucket of water. Let the plaster settle on its own. Keep sifting until the plaster forms an 'island' about the size of a quarter above the water surface. You will notice that as the island starts to form, the edges slowly disperse into the water. Once the island remains above the surface without dispersion you have achieved the right amount of plaster to water. Let the plaster sit for two to five minutes. This will allow the water to absorb the plaster molecules. After sitting, give the bucket a good bang to release any air bubbles. Now begin mixing using your hand or a mixing implement. Break up any lumps in the plaster and mix using a figure-eight motion. Don't mix too vigorously as this will create air bubbles. Mix to the consistency of thick cream, still thin enough that you can pour it evenly into the mold. Mixing will take several minutes.



Pouring:

When the plaster is the consistency of thick cream with no lumps, you are ready to pour it into the mold. Pour the plaster into a corner so that it will find its own way around the object. Pour until the plaster is at least a one-inch thickness above the object. Once poured, tap the side of the coddle boards with a rubber mallet to release any air bubbles. Then allow the plaster to set. The surface of the plaster will heat up and then become cool again. This is part of the curing process. Once the plaster is firm and cool to the touch, you may take off the clamps and coddle boards.



*As soon as you finish pouring and tapping the plaster in the mold, pour a small amount of water into your plaster mixing bucket and swish it around. Make sure to clean excess plaster off the sides of the bucket and your hands. Pour the waste plaster directly into the dumpster. Repeat if necessary.

**Only rinse in the sink once 99% of the plaster has been removed.



10

Flip the mold over and remove the clay. Store the clay in the bucket labeled "Mold Clay". Do not put any clay back in the class buckets or the reclaim!!! Do not dislodge the object from the plaster!



If you have forgotten to add keys to the surface of the clay, you can carve them into the surface of the plaster using a butter knife or a coin.



11

Apply Murphy's oil soap at least three times to the surface of the mold, drying in between. Make sure that you coat the entire surface of the plaster, including the keys, as plaster will stick to itself.



12

Clamp the cottle boards around the mold for a second time, following the same procedure as before to ensure all possible escape routes for the liquid plaster are sealed with coils of soft clay. Mix the same amount of plaster and cast the second half of the mold, following the same procedure as before (Step 9).



13

Once the second half of your mold is completely set, remove the cottle boards, then gently insert a knife or wooden tool between the two parts of the mold to separate the pieces. This step is a little tricky as the original may be quite tightly embedded and you do not want to damage the mold. Once the two halves are separated, remove the object from the mold.

Use a surform tool to clean up the edges of the plaster to remove any sharpness. Carefully dispose of the plaster residue in the trash can or dumpster to ensure it can't contaminate your clay later.

Place the mold somewhere warm to dry out completely before using.

