

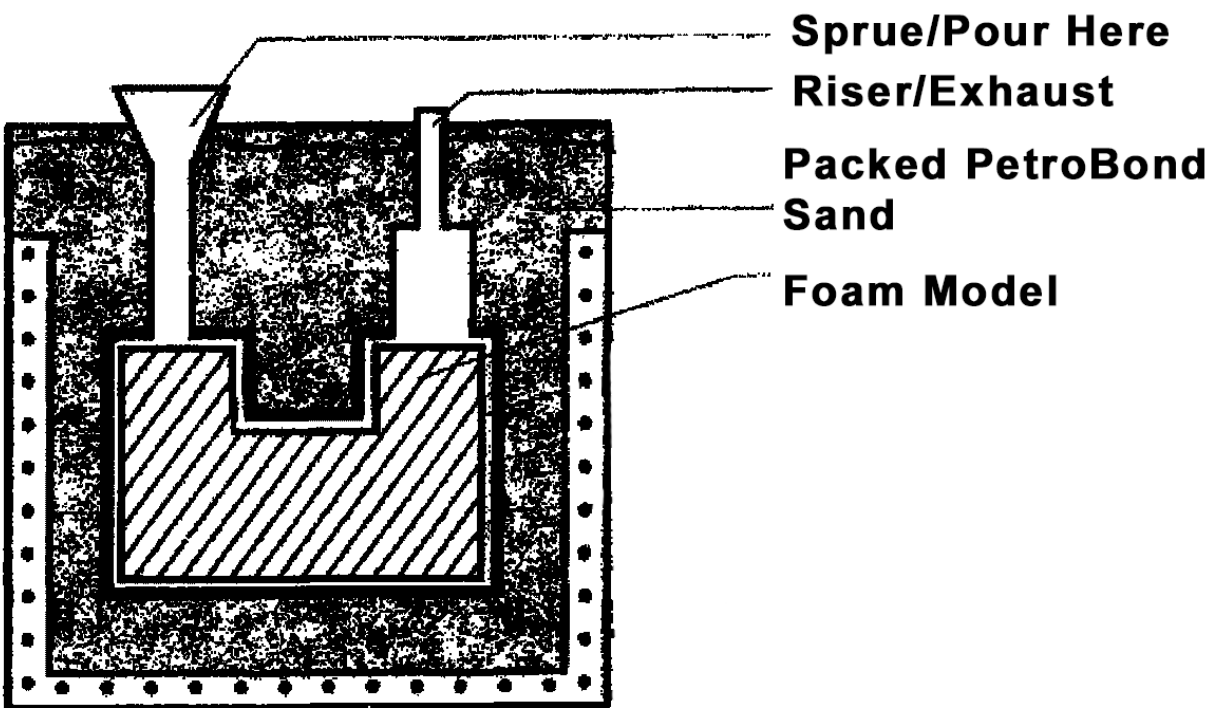
Lost Foam Casting

Name: _____ Block: ____ Date: _____

1) You will be given a “chunk” of foam to carve your initial design from. Tools that can be used for cutting/carving may include: Hacksaw, Jewelers saw, files, exacto blades, sandpaper, rotary tools, etc

It is important not to rush or waste the foam carving process. You want to carve your foam the way you want your final project to look.

2) After your shape is finished and looking 100% like your final version will be you need to attach 2 sprues or tunnels for the molten material to flow through when we do the pour. Use hot glue to add your “sticks” of foam. The Sprue stick should be about **twice the thickness of your finger** and be long enough to stick out of the Petrobond casting sand when compacted and buried. We will call this the Intake or Pouring Sprue. The riser sprue is to allow gases to escape and when metal comes out the top during the pour this indicates that the cast has filled and you can stop pouring.



Packing your Model:

Pick a large Metal Flask box (round or rectangle) that your foam model can fit into. In our class we usually put a piece of wood below that if you don't finish the packing process you can move it to the side and continue the next day allowing other students to use the station.

Your model needs to have at least 1.5 inches (4cm) of hard packed sand below it. This is easier if your model has a flat bottom. If a different shape you will need to use your fingers or the packing tools to ensure your shape is buried and packed tightly. The Sprue and Riser must stick out the top of the flask

with at least 1.5" (4cm) of sand packed tightly above your mold. Tight means I should be able to pickup your flask and turn it upside down without any sand falling out from the top or bottom. I don't want to test that just in case all your hard work comes crumbling out but that is the general idea...

If the metal flask is not tall enough to accommodate your project you will need to use two flasks that fit together. The bottom is called the "Drag" and the top is called the "Cope". You need to figure this out before you start any packing since you still need the Sprue and Riser to stick out above the metal flask.

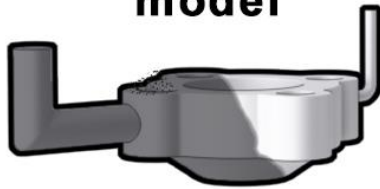
The **Sprue requires a cone shape or funnel** so that when you pour your molten material it can easily be guided down the sprue hole to your foam. I use a spoon or similar shaped object to carve a small funnel in the sand around the sprue.

We will then add aluminum into a crucible and heat it up with the furnace/foundry. You will get dressed up in the appropriate safety outfit, do the pour with the teacher, and once cooled down you can "shake off" the sand and cut off excess material from your project to be melted down again.

The rest of the process can be hand tools and machining depending on the shapes. **No Grinders for aluminum.**

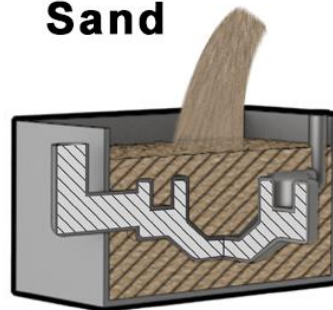
1

Make your model



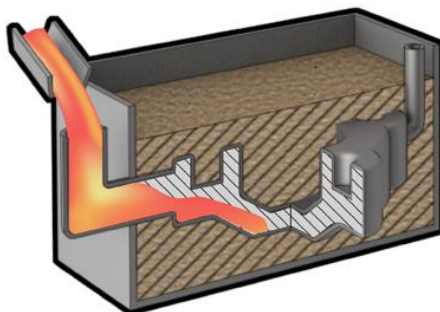
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Bury in Sand

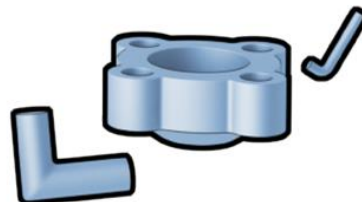


3

Pour Melted Metal



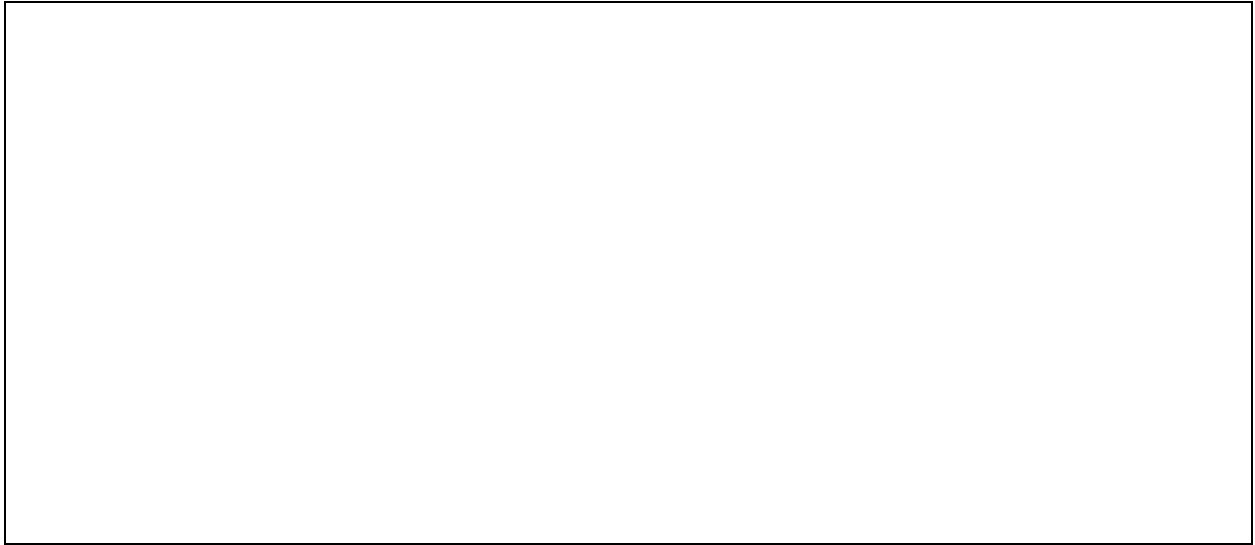
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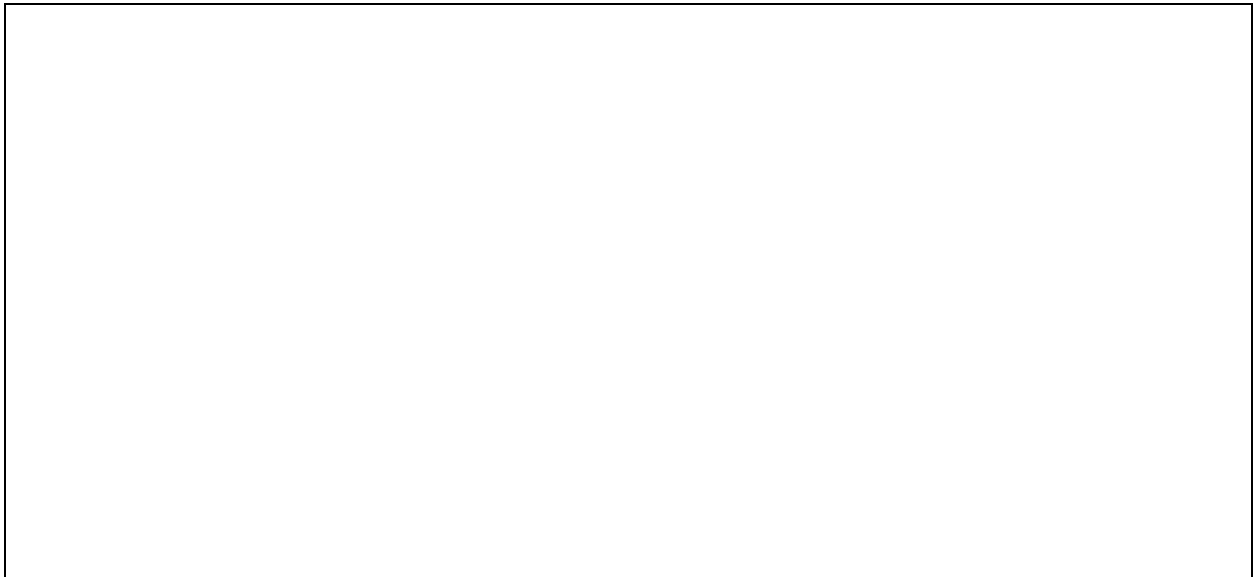
Cut off excess material

Size: I recommend you stick within a 4"x4" (10cm x 10cm)

Sketches:

A large, empty rectangular box with a thin black border, intended for drawing sketches. It occupies the upper half of the page.

Final Idea:

A large, empty rectangular box with a thin black border, intended for describing the final idea. It occupies the lower half of the page.

We will schedule aluminum pours during the week. Do not rush this process!

You get one piece of foam. Do not waste it!

Full size drawings:

