

**First it starts with an idea!**

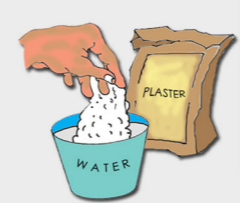


The **Marshall M. Fredericks Sculpture Museum** is an exciting and continually evolving place where you can see the sculptor's work and, learn about how his sculptures were made in **The Sculptors Studio**. Museum tours offer great opportunities for all ages: temporary exhibition gallery tours, hands-on activities, and learning about art in general.

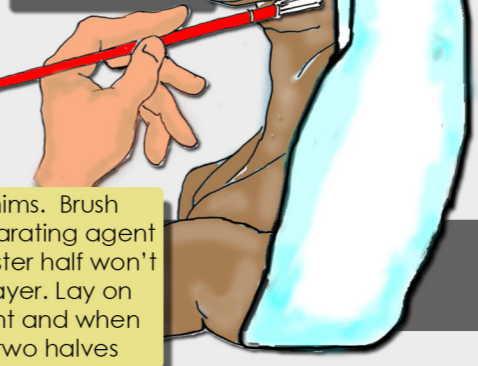


and, pencil and paper

Draw your idea



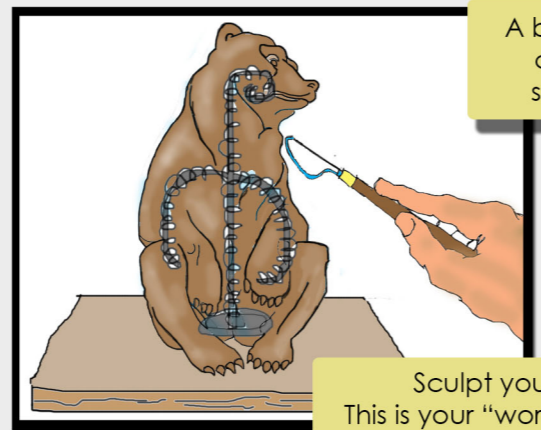
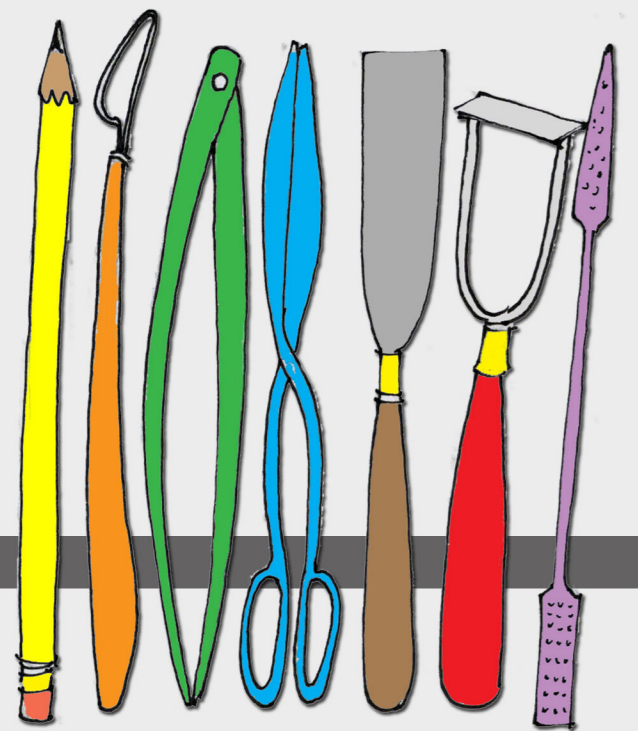
Mix plaster with water and cover the back side of the sculpture. Let dry.



Remove the shims. Brush the edge with separating agent so the second plaster half won't stick to the first layer. Lay on plaster to the front and when dry, open the two halves



**How is Sculpture Cast?**  
The Tools and Materials of Traditional Sculpture

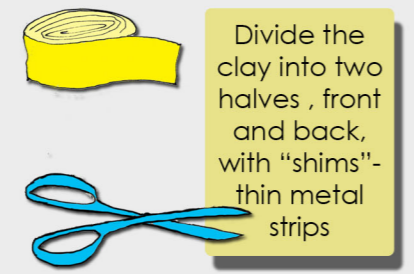


A board, wire, clay, and some tools

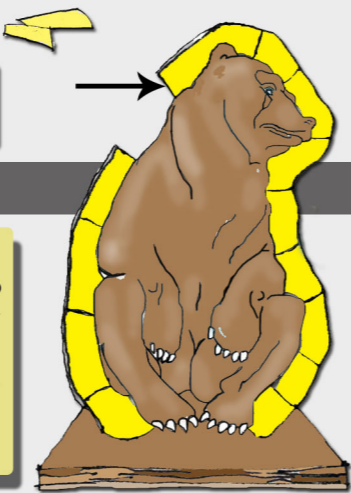
Sculpt your idea. This is your "working model"

Now, cast your model into plaster

**The Plaster Cast**



Divide the clay into two halves, front and back, with "shims"- thin metal strips



Brush separating agent on the inside surfaces of the mold sections. Now close the mold halves, secure with a band, tip upside down and fill with wet plaster.



When hardened, carefully chip away the outer plaster layer to reveal your plaster model.

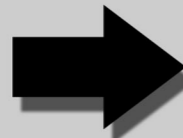


Mon. - Fri. 11 AM - 5:00 PM  
Sat. 12 Noon - 5:00 PM  
Closed national and University holidays.  
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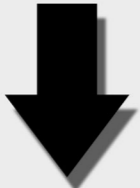


**NOW WHAT DO YOU WANT TO DO?**

Do you want to **ENLARGE** your sculpture?



**CAST** your sculpture into bronze?



1 Then take your sculpture to the art foundry.

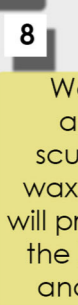
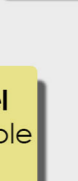
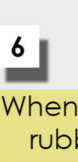
2 This is what will happen there: the foundry will make a rubber mold from your plaster sculpture.

3 First mix the rubber with the hardner

6 When set the two halves are opened and the rubber surfaces are brushed with hot wax.

7 The hollow **wax model** is eased out of the flexible rubber mold

8 Wax tubes or "**sprues**" are attached to the sculpture that lead to a wax "cup". These sprues will provide channels where the liquid bronze will flow and hot gasses escape.



1 Then you will want a **pointing machine** to help you.

2 **First,** Cover the small plaster model with pencil dots

5 Next, they make a 2-part **plaster mold** over the rubber like you did with your original clay.

9 The whole thing is dipped into a **ceramic slurry vat** and hung up to dry. This is done several times until a thick coating is built up

10 The ceramic coated sculpture is put into a hot furnace, hardening the ceramic shell and draining the heated wax out the bottom ("lost wax")

11 The fired (hollow) sculpture is stabilized in a sand-filled box, cup-side up, and liquid bronze is poured into the now empty space and fills the cavity.

12 After it has cooled, the ceramic material is chipped off, the sprues removed, and the sculpture is **sand-blasted** clean.

13 A **patina** is chosen and the foundryman, using a special chemical formula and a hot torch will apply the final color.

14 Your sculpture is affixed to a base, **protective wax** is applied and the surface is given a thorough **polishing**. Your sculpture is now ready to be taken home!

3 Figure out how big you want your sculpture to be and build an **armature** to accommodate it. This is a wooden lathe support structure for the clay

4 The **pointing machine** has two arms that are connected so when one moves the other - touching the large armature - automatically moves too. By touching the point to one of the dot sites and seeing where the corresponding point touches the large model, you can tell how far out to build the clay.

5 Repeat this process at each dot, turning the wheeled bases when needed until the large version resembles the small model. You can work on the finer details after this process is finished. You would then make **piece molds** of your large model. Lift the piece molds from the clay and take these to the foundry for casting.

