

## Mold Making

Plaster: Grades 3–12

Pewter: High School

Time to Complete: Minimum one hour

### Lesson Overview

In this lesson, students will create a mold using clay to cast a plaster object or a cuttlefish bone to cast a pewter object.

Molds are a part of our everyday lives. We use them to make things like ice cubes, cakes, or sand castles; and have objects made from molds all around us like plastic toys and containers or ceramic toilets and bathtubs. Many artists also use molds to create their work. Mary Nohl melted her parents' silverware to create cast metal artworks. Stella Waitzkin used molds to cast resin sculptures, many of them books, to create *The Lost Library*. Arts/Industry artists-in-residence make molds in the Kohler factory to cast work out of ceramics and metal.

Visit <https://www.jmkac.org/engage/educators/> to find more information about this lesson plan, including links to learn about Mary Nohl, Stella Waitzkin, and the Arts/Industry program.

### Objectives

- Students will consider how molds are a part of our everyday lives.
- Students will develop a design for their mold that emphasizes depth and/or pattern.
- Students will create their mold and cast it using plaster or pewter.

### National standard connection Visual Arts/ Creating: #VA:Cr2.3

**Anchor Standard:** Organize and develop artistic ideas and work.

**Enduring Understanding:** People create and interact with objects, places, and design that define, shape, enhance, and empower their lives.

**Essential Question:** How do objects, places, and design shape lives and communities? How do artists and designers determine goals for designing or redesigning objects, places, or systems? How do artists and designers create works of art or design that effectively communicate?

### Discuss

Begin with a brainstorming question before looking at any images: How are molds a part of our everyday lives?

After discussing as a group, show students images of different molds and the work of Mary Nohl and Stella Waitzkin. Discuss how molds need to have depth to create the form. Have students consider how a mold is the negative space that will be filled with a material, like cake batter into a cake pan.



1 Mary Nohl, untitled, c. 1949–c. 1975; silver; 2 1/2 x 2 x 3/4 in. John Michael Kohler Arts Center Collection, gift of Kohler Foundation Inc.  
2 Mary Nohl, untitled, c. 1949–c. 1975; silver; 1 5/8 x 2 7/8 x 3/8 in. John Michael Kohler Arts Center Collection, gift of Kohler Foundation Inc.  
3 Mary Nohl, untitled, c. 1949–c. 1975; silver; 1 1/2 x 3 3/4 x 1/8 in. John Michael Kohler Arts Center Collection, gift of Kohler Foundation Inc.

## Step-by-Step

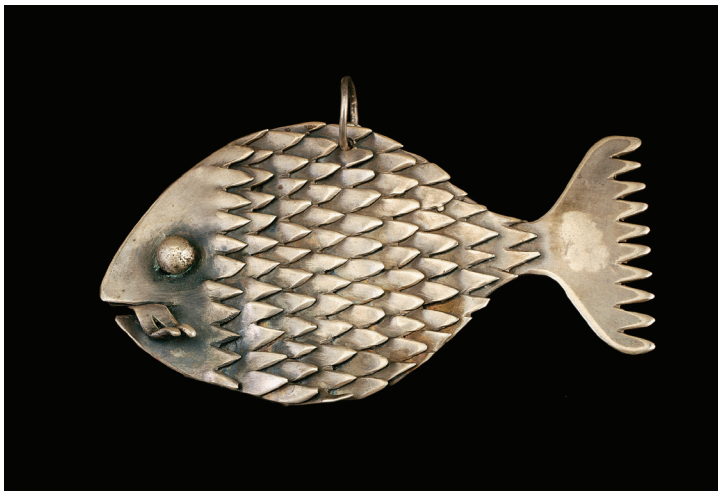
(Find a video tutorial for plaster casting at <https://www.jmkac.org/engage/educators/>)

### Plaster

1. Create a plan for the mold by tracing the outline of the container and drawing a simple design inside of the shape. You can use a paper soup bowl or a small cardboard takeout box. Any paper container that is fully sealed works well.
2. Add air dry or bench clay to the container and smooth it out to touch all sides. The container should be about half-full with clay.
3. Press the planned design into the clay using clay tools or hands, remembering everything will be opposite! What you press in will protrude in the final piece, and anything raised up will be indented. Make sure any words, numbers, or symbols that have a specific directions are drawn backwards.
4. Add any additional embellishments, such as buttons or beads. Remember to gently press them into the clay so that they stick, but are not embedded. You can also add colored sand. Only sprinkle a small amount so it does not fill in the design.
5. Mix the plaster and water per the ratio listed on the plaster and then carefully pour it into the mold. If you want to be able to hang the final piece, mark where the top is on the edge of the paper container before you pour the plaster. After pouring the plaster, gently place a paper clip or loop of wire into the plaster to set as a hook lined up with the mark you made indicating the top of the mold. Make sure the initials or name of the artist is written on the outside of the container.
6. Let the plaster set, and then demold your artwork.

### Materials

- Pencil and paper to sketch ideas
- Paper container, such as a paper soup bowl or take out container
- Sculpting tools—skewers, spoons, and assorted small objects that can be stamped into clay work well
- Optional: embellishments like buttons, beads, and small stones and colored sand
- Quick set craft plaster
- Optional: Wire or paper clip to create hanging device



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## Step-by-Step

### Pewter

1. Prep the cuttlefish bones by cutting it in half with a saw. Smooth the softer, chalkier side of the bone half on an abrasive surface, such as a brick of cement or concrete.
2. Match up two soft sides of cuttlefish bone. Select the smaller of the two sides and trace it on a piece of paper. Plan the mold design in the traced area. Leave a minimum of a ¼ inch border to ensure that the pewter does not leak. Create a sprue, or the opening for the pewter to enter the mold, by carving away a funnel shaped indent leading to the final design. Remember to make sure that all of the design connects.
3. Carve the design using tools such as a sharpened pencil, paper clip end, nail, or dental pick. Be aware of having levels to create depth and make sure any numbers, words, or symbols that have a specific direction are drawn backwards.
4. Using at least two rubber bands, secure the two halves of cuttlefish bones together tightly. Write the initials of the artist using a pencil on the outside of the cuttlefish bone.
5. Optional, but highly recommended—use coils of bench clay to create a seal around the mold and make a small base so that it stands.
6. The instructor/teacher/adult melts the pewter in a crucible using a propane blowtorch. They carefully pour the pewter into the mold over a flame-resistant surface, such as a kiln shelf.
7. Let the mold cool and then demold the pewter piece and use files, pliers, and sandpaper to smooth away the sprue and any excess pewter.

• *This is a complicated process! Arts Center staff are available to walk you through the lesson plan and answer any questions you have. We can also help virtually with the project if you are unable to visit the Arts Center to complete this workshop.*

### Materials

- Cuttlefish bones—can be purchased through pet shops
- Concrete or cement brick
- Paper and pencil
- Pewter—can be purchased from Nasco
- Carving tools: nails, dental picks, sharpened pencils, paper clip
- Rubberbands and bench clay to seal the mold
- Crucible
- Propane blowtorch
- Flame-resistant surface such as a kiln shelf

### Key Vocabulary

#### Cast:

Act of pouring a liquid substance into a mold.

#### Mold:

A hollow form used to shape a liquid substance as it hardens.

#### Three-dimensional art:

Art with height, width and depth, often also described as a sculpture