

Create a Fossil Cast/Mold

Explanation: In this activity, students will model the process of **mold and cast fossilization** in which the organism's parts are no longer present but have left behind impressions of their internal or external parts (molds), which may be filled by minerals (casts).

Option 1: Mold

Supplies:

- Plaster of Paris
- Aluminum foil
- Water
- Popsicle sticks
- Something to fossilize (ex: shells, sea stars, dinosaur foot imitations, fish bones)

Steps:

1. Create a shallow bowl shape with the aluminum foil
2. Mix plaster and water with a popsicle stick in the aluminum foil bowl
3. Press the fossil material (shells, etc.) into the surface (Note: if pressed too far, they can be very difficult to pry out!)
4. Let plaster harden, and then remove fossil and aluminum foil

Option 2: Cast

Additional Supplies:

- Clay
- Small plastic or paper cups

Steps:

1. Start with a lump of clay inside a small cup (instead of plaster), and complete the steps for a mold.
2. In another small cup, mix the plaster and water with the popsicle stick. **Quickly** pour it over the clay mold. (The reason to do this quickly is that when the plaster hardens, it won't fill in the fine details of the mold. Alternatively, you can pour the plaster powder into the mold, then add water directly.)
3. Wait for the plaster to harden, then tear away the cup around it and gently remove the clay.

Create a Fossil Cast/Mold

Teachable moments:

- Emphasize the importance of a moldable substrate. Here we used man-made plaster, but in real life, prints would be made in mud, ash, or the soft seafloor. If a dinosaur walked across hard rock, such as granite, no imprint would be made.
- Ask students to explain the relationship between molds and casts. The processes in nature are similar to the ones in the activity. For example, an ocean animal dies and sinks to the bottom of the sea, where it is then buried quickly by sediment. Over time, its body deteriorates and eventually dissolves away completely; this leaves an empty space in the sediment in the shape of the organism (a natural mold). Then, water circulating through the sediment leaves behind minerals such as silica, filling in the mold and creating a cast. Later, the cast may be unearthed by natural geological processes, or by human activities (often construction work, rarely archeological digs).