

FOSSIL FORMATION



Fossils are the preserved remains of past life. They form when an organism dies in or near a watery environment, and is covered by sediments like mud and silt before fully decomposing. The sediments harden and minerals seep in to replace the remaining organic material in a process called petrification. Sometimes, all of the parts do decompose, leaving behind a cast of the organism, which is similarly filled by minerals to create a stone replica.

Most ancient organisms never become fossils, as the conditions required are very specific, and the process can take thousands to millions of years. Usually only the hard parts of plants and animals fossilize, since soft organs, muscle, and skin decompose much more rapidly. As a result, the fossil record is full of gaps and missing information that may never be uncovered. Dorothy is a great example of this, as the only confirmed (yet incomplete) *Elasmosaurus* specimen found so far.

Trace fossils are the indirect evidence of ancient life, such as footprints, skin impressions, and coprolite (fossilized poop). Body fossils are the direct remains of organisms, such as bone, shell, and horn. Many fossils are created via a cast and mold process, where minerals replace the space where the original body part decomposed. Similarly, we can create our own casts and molds from these fossils, to study and display. The Pacific Museum of Earth's Dorothy is a replica of the original skeleton discovered in 1868 and housed at the Academy of Natural Sciences in Drexel.



ACTIVITY ON NEXT PAGE

MAKE YOUR OWN FOSSIL



What you will need:

1. Two containers (shallow tupperware/baking dish & mixing bowl)
2. Modeling clay
3. Plaster of paris
4. Water
5. Popsicle sticks or similar for stirring
6. A template for your fossil, such as a shell or toy dinosaur (it can be anything!)

STEPS

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1. Fill the bottom of a container with approximately 2 cm of modeling clay.
2. Press your fossil template into the clay, creating an impression to serve as the negative image for the cast.
3. Mix together plaster of paris and water in a separate container, stirring until it has the consistency of cake batter.
4. Quickly pour the mixture into the mold, making sure to cover 2 cm above the impression.
5. Let it sit overnight or until fully dry.
6. Remove the cast from the container, peeling away any remaining clay.



