

A **fossil** is the evidence of a living thing that has been preserved over time. It takes a very long time for a fossil to form—sometimes many millions of years!

Paleontologists study fossils to learn about ancient life. But what are fossils and how do they form? Let's find out!



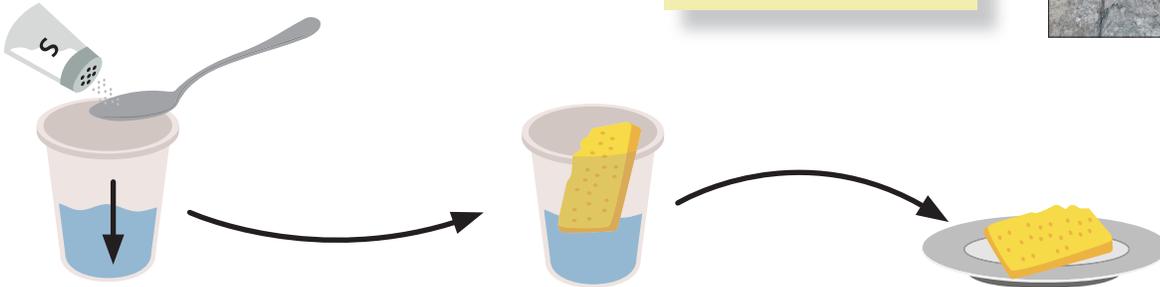
## Turning to Stone

Most dinosaur bones are preserved by **permineralization**. This is when minerals are deposited in the pores, or open spaces, within the remains of a living thing and harden into stone.

### What you need:

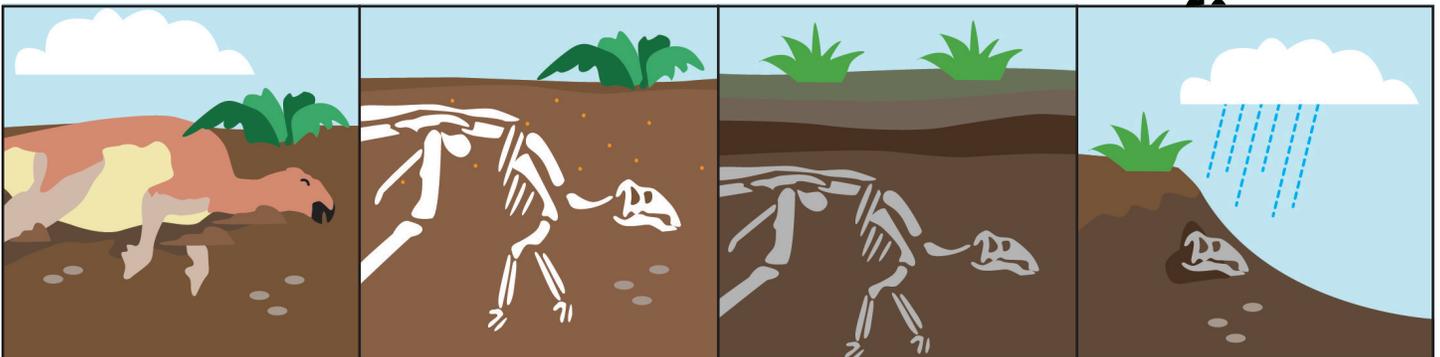
- Salt
- Sponge
- Water
- Plate
- Cup
- Spoon

### What to do:



1. Add 1 tablespoon of salt to 1/4 cup of very warm water. Mix until almost all the salt disappears.
2. Soak the sponge in the salt water. Squeeze and resoak it a few times so that it gets really salty.
3. Place the fully soaked sponge on a plate and add a few drops of salt water on top. Let it dry for 5-6 days.

What does the dried-out sponge feel like? Is it soft or hard? Hold it in a bright light. Can you see the sparkly mineral crystals? The sponge has become **permineralized**—like a dinosaur bone fossil!



### Step 1

After an animal dies, it is buried by silt, sand, or ash (sediment).

### Step 2

The soft parts of the animal decay, leaving the hard bones. Minerals seep into the bones.

### Step 3

Over millions of years, the sediment becomes rock. The skeleton becomes a fossil.

### Step 4

The rock erodes and exposes the fossil.



Try these activities to explore other ways that fossils form.

### Trapped in Time

Some fossils form when a living thing gets trapped in a material, such as tree sap, tar, or ice. Sometimes this type of fossil can include skin, wings, or fur!

This insect was trapped in tree sap that hardened into a kind of stone, called **amber**.



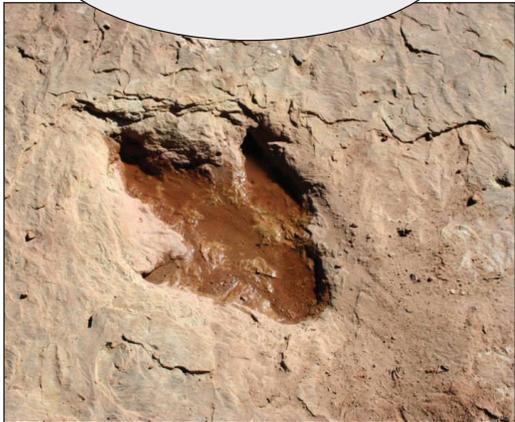
- What you need:**
- Small object (shell, toy animal, etc.)
  - Water
  - Ice cube tray or cup

### What to do:

1. Freeze a small object (toy animal, gummy bear, piece of a plant, shell) in water.
2. Use warm water (with a dropper or spoon) to “excavate” your fossil from the ice.



Fossil footprints show us how dinosaurs behaved, how they moved, and how fast they could run.



### Leave a Trace

Fossils that show evidence of an animal’s behavior or activity are called **trace fossils**. This includes footprints, nests, burrows, teeth marks, or even poop!

### What to do:

- What you need:**
- Model Magic clay or Dino Dough
  - Dinosaur and lizard toys

1. Use the dinosaur and lizard toys to make footprints in the clay. Can you tell which animal made the different prints?
2. Explore inside and outside for evidence, or traces, of animal activity—such as scratched furniture, footprints, fur or hair, spiderwebs, or plants eaten by insects.



### Footprints

Can you make footprints outside? Try walking in soft dirt or step in water and then walk on a dry sidewalk. How far apart are your steps? How are your footprints different from an adult’s footprints?



