Fossil Fondue

Science Film Festival Knowledge Through Entertainment

Science Film Festival Film

Dino Dana: Game of Bones

Introduction

How do we know about plants and animals that lived on Earth thousands of years ago? What is a fossil? A fossil is a remainder of something that lived a long time ago. Many times, fossils can be imprints of footprints or bones. To make a fossil, a footprint or a dead animal or plant first gets covered with soil, mud or silt. Eventually, the organism decomposes and the hard parts (such as the bones) are left to make an imprint in the soil.

Today, we will make our own fossils. In the natural world, all parts of the dead organism would decompose so fast that a fossil would not be formed looking like a whole animal. Bones take much longer to decompose, and so fossil imprints are often found of just the bones of an organism or the structure of a plant.

We are going to focus on the process of how fossils are made, and we'll ignore the fact that most of the organism would be decomposed. So, imagine this is a dying organism, and he falls to the muddy ground. Eventually, let's say this organism gets covered by more mud. Over time, the mud hardens so we can break open the mud and observe the fossil (ignoring the now decomposed organism). Let's model this exact process, using chocolate instead of mud!

Key Objectives

- To understand how fossils are formed, students model the process of fossilization by making fossils using small toy figures and melted chocolate.
- To extend the student's knowledge to the ways that scientists study fossils.
- To be able to define 'fossil'
- To be able to describe how fossils are created

Materials

Each group needs:

- One small paper cup (Dixie cup size)
- About ½ cup milk chocolate chips
- Clean, small object from which to create a fossil impression (such as a plastic toy dinosaur); the object should be just the right size to fit in the paper cup, and not much smaller
- Clean container, in which to melt chocolate
- Spoon
- Sharp knife

For the entire class to share:

- Hot plates or a microwave
- Refrigerator
- Paper towels
- Sink and water (for clean up)

Beginner

Resource Type
Experiment

Topics
Paleontology | Fossilization

Subjects
Geology | Earth Sciences

Keywords
Fossil | Paleontologist | Earth | Sedimentary | Prehistoric | Dinosaurs

Time For Activity
60 minutes

Guiding Questions

1. What is a fossil?
2. How are fossils formed?

Safety Instructions

- Make sure that the small objects, melting containers, spoons and knives are clean enough from which to eat.
- Make sure that students understand the dangers of the hot plates and the hot chocolate so they do not get burned.
- Direct students to be careful with the sharp knives.

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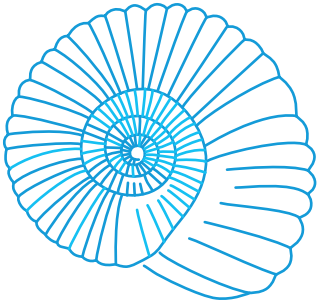
Tasks/Steps

Part 1

1. Gather materials and set up hot plates or microwave.
2. Divide the class into teams of two students each.
3. If using a microwave to melt the chocolate: Heat about 2 cups of chocolate chips for 30 seconds intervals, stirring between heating intervals, until smoothly melted. Continue melting batches of 2 cups of chips until there is enough melted chocolate for everyone.
4. If using hot plates to melt the chocolate: Have each group melt their own chocolate over medium-high heat, continuously stirring. After the chocolate is melted and smooth, direct students to turn off the hot plates.
5. Fill the paper cup about half-way with melted chocolate.
6. Place the toy in the cup, oriented it so it is entirely, or nearly, covered in chocolate.
7. Top off the cup with melted chocolate, as needed.
8. Refrigerate the cups for at least one hour.

Part 2

9. After at least an hour in the refrigerator, tear away the paper cups from the hardened chocolate.
10. Use a knife to carefully cut the chocolate in half, along a plane that creates the best looking fossil (based on where the toy was placed in the chocolate).
11. Carefully pull the toy out of the chocolate, preserving the fossil as much as possible.
12. Ask students the embedded assessment observation questions provided in the Assessment section. Make sure students observe the fossils before eating them!
13. Conclude the activity by leading the post-activity assessment about the thinking behind designing engineering instruments for fossils, as described in the Assessment section.



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→ **www.teachengineering.org/activities/view/cub_rock_lesson03_activity1**