Make Your Own Fossil

Science Film Festival Knowledge Through Entertainment

Science Film Festival Film

Ralph and the Dinosaurs

Introduction

Paleontology is the branch of biology that studies the forms of life that existed in former geologic periods, primarily by studying fossils. The only direct way we have of learning about dinosaurs is by studying fossils. Fossils are the remains of ancient animals and plants, the traces or impressions of living things from past geologic ages, or the traces of their activities. Fossils have been found on every continent on Earth. The word fossil comes from the Latin word fossilis, which means, "dug up". Most fossils are excavated from sedimentary rock layers (Sedimentary rock is rock that has formed from sediment, like sand, mud, and small pieces of rock).

Over long periods of time, these small pieces of debris are compressed (squeezed) and are buried under more and more layers of sediment that piles up on top of it. Eventually, they are compressed into sedimentary rock. The fossil of a bone doesn't have any bone in it! A fossilized object has the same shape as the original object, but is chemically more like a rock. Some animals were quickly buried after their death (by sinking in mud, being buried in a sandstorm, etc). Over time more and more sediment covered the remains. The parts of the animals that didn't rot (usually the harder parts like bones and teeth) were encased in the newly formed sediment. In the right circumstances (when there is no scavengers, quick burial, not much weathering) parts of the animal turned into fossils over time.

After a long time the chemicals in the buried animals bodies underwent a series of changes. As the bone slowly decayed, water infused with minerals seeped into the bone and replaced the chemicals in the bone with rock-like minerals. The process of fossilization involves the dissolving and replacement of the original minerals in the object with other minerals (and or per-mineralization - the filling up of spaces in fossils with minerals, and /or recrystallization in which a mineral changes its form). In the end we get a heavy, rock-like copy of the original object - a fossil. The fossil has the same shape as the original object, but is chemically more like a rock! Petrification can preserve hard and soft parts and slowly replaces organic material with silica, calcite or pyrite, forming a rock-like fossil. Wood is often found petrified. Some organisms are embedded in Amber (a hardened form of tree sap). This usually preserved insects or pieces of plants.

Fossils of imprints may form, like casts of dinosaur footprints. The impressions, in the right circumstances, fill with sediments that fossilize. Most animals did not fossilize, they simply decayed and were lost from the fossil record. Paleontologist's estimate that only a small percentage of the dinosaurs that ever lived have been or will be found as fossils.

For this project, find an interesting object and set it in stone, letting its impression live on in the form of a fossil. Have fun making your own fossil and learning how scientists use them to unlock secrets of the past, including those that provide a remarkable insight into life in the age of dinosaurs. Children will learn how fossils are formed, what the words paleontology and petrification mean, how we know so much about the dinosaurs and much more.

Key Objectives

- To understand what fossils are and how they are formed.
- To understand what paleontology is and what palaeontologists do.

Beginner

Resource Type

Project

Topics

Fossils | Dinosaurs

Subjects

Biology | Palaeontology

Keywords

Paleontologists | Sediment | Petrification | Fossilisationtion

Time For Activity

20 – 30 minutes
(leave plaster for 24 hours)

Make Your Own Fossil

Materials

- Plasticine
- 2 paper cups
- An object that you would like to use as the fossilized impression
- Plaster of paris
- Water

Safety Instructions

Take care no plastecine is ingested by the children.

Guiding Questions

1. What are fossils and what is paleontology?
2. How are fossils formed?

Tasks/Steps

1. Flatten a ball of plasticine until it is about 2 cm thick while making sure the top is smooth.
2. Put the plasticine inside a paper cup with the smooth side facing up. Carefully press the object you want to fossilize into the plasticine until it is partially buried.
3. Carefully remove the object from the plasticine. An impression of the object should be left behind.
4. Pour half a cup of plaster of paris into the other paper cup. Add a quarter cup of water to the plaster and stir until the mixture is smooth. Leave it for around two minutes.
5. When the mixture has thickened pour it on top of the plasticine in the other cup. Leave the mixture until the plaster has dried (leave it for 24hrs if you want to be sure).
6. When the plaster has fully dried, tear away the sides of the paper cup and take out the plasticine and plaster. Keep it in a warm dry place and enjoy your very own fossil.

Authors/Source

→ **http://www.sciencekids.co.nz/projects/fossilcast.html**