

Fun with Fossils

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What types of plants or animals live long ago but are no longer in existence? How do we know they existed? For those answers, we look to the fossil record which provides a wealth of information on what once existed on the Earth. More than likely you have heard of the term fossil, but do you know what they are or how they form? Payne Elementary 4th graders had these questions and more answered when they enjoyed a program on fossils and had the opportunity to identify some.

First, let us answer the question of what a fossil is and what can become a fossil. According to the British Broadcasting Channel (BBC), Earth has a history spanning about 3.8 billion years with the appearance of bacteria all the way to humans appearing about 200,000 years ago. Within this time, many plants and animals have come and gone and fossils help paint the picture of the amazing natural history our Earth has to offer. Fossils are remains of a living thing that once existed such as bone fragments, seeds, or even footprints.

To get an idea of Earth's life history, we look to the fossil record. The fossil record contains the remains of both plants and animals that have been preserved in layers of sedimentary rock. As sediment piles in layers on top of dead organisms, the weight of these layers presses upon one another preserving certain remains of the organism such as the bones. According to National Geographic, we look to the fossil record and its layers to get a glimpse of how different groups of organisms possibly changed over time to adapt themselves to their environment by gaining or losing features that better its survival.

How exactly are fossils made? Some plants and animals who have died are often covered by sediments before they had the opportunity to decompose since decomposition slows down if air is not available. According to National Geographic, for an organism to become fossilized, it needs to be covered by sediment shortly after death, but most organisms decompose before this can happen. Once buried, soft tissue of the organism such as organs and skin will easily decompose while the bone will be all that is left behind.

What can fossils tell us? With fossils, there is a multitude of information we can gather about the animal the remains came from. The weight of the animal could be guessed along with the animal's size based on the size of the fossil. Should we have dental remains, we can look at the structure of the animal's teeth to get an idea of what the animal's diet may have been like such as whether it was an herbivore or an omnivore. Looking at the shape of the foot bones could give suggestions of what type of feet the animal had whether it was paws or hooves.

Even though fossils can tell us a lot of things about each animal, they will not paint the whole picture. Think about looking at a traditional skeleton, if you knew nothing about the specimen, can you guess what it looked like just by examining the bones? Fossils are not able to tell us the hair or skin color the animal may have had nor, will it tell us any of the animal's social behaviors such as whether it was a herd animal or preferred to be on its own. One

last thing that fossils are unable to tell us is what type of sound the animal had. Even though we can't get the entire profile of the specimen the fossil belonged to, we can at least obtain a basic understanding of the animal.

Paleontologists are scientists whose profession it is to study fossils. They study the fossil record looking for signs of ancient life that once existed on earth to gain an understanding of when and how different species lived long ago, according to National Geographic. These scientists are reconstructing early animal communities to understand any changes that led to animals we have today. A good day for a paleontologist would be to find a complete set of remains of an organism, but this is not always the case as they will find incomplete discoveries such as bones, footprints, or leaf impressions.

What is one way you use fossils daily? Every time you get in your car, turn on the heat in the house, or flip on a light switch you are using fossils in the form of fossil fuels. Energy sources such as oil, coal, and natural gas are remains of prehistoric plants & animals that were gradually buried by rock. As an activity, students looked at samples of fossils and used an identification chart to see the plant or animal the fossil came from and were greatly amazed to see what once lived on earth! Students made notes of how these fossils are different from the animals we see today or how they are alike in addition to what animal or plant existing today the fossil is related to.