

Introduction to Fossils Notes

What Is A Fossil?

- A fossil is an imprint or remains of a plant or animal from the past.
- A fossil is usually not the plant or animal itself.
- Fossils range from thousands of years to many millions of years old.
- The earliest fossils date from around 600 million years ago. The dinosaurs became extinct just 65 million years ago.

Becoming A Fossil

- Any organism can become a fossil, but some organisms are easier to fossilize than others.
- The hard parts of plants and animals like bones and shells can become fossils much more easily than the soft parts can.
- Soft internal organs, muscle, and skin decay quickly and rarely become fossils.

How Does A Fossil Form?

- Fossils are formed in many different ways, but most are formed when a plant or animal dies in a watery environment and is buried in mud and silt.
- Soft tissues quickly decompose leaving the hard bones or shells behind.
- Over time sediment builds up and hardens into rock. As the bones decay, minerals seep in and replace the organic material. This process is called petrification.
- The bones may also decay completely, leaving behind an imprint of the organism. The imprint may then fill with minerals and make a cast of the organism.

Unusual Fossil Formation

- Small bugs or insects can become trapped in tree sap.

- Eventually, the sap hardens and forms a semi-precious material called amber.
- Sometimes, the remains of animals can be perfectly preserved in amber.
- Volcanic eruptions can form fossils when animals get trapped in the hot ash flows.
- In this case, the fossil is a hole in the shape of the animal.
- This type of fossil formation is rare.

Studying Fossils

- Scientists who study fossils are called paleontologists.
- Fossils can be used to understand the age and geological history of the Earth.
- Fossils also provide important evidence of how life and environmental conditions have changed.

Problems With Studying Fossils

- Not all animals that ever lived became fossils. Scientists only have proof of species that they have fossils for. There may be species that we will never know existed.
- Some species of animals are very easily fossilized while others are not. It might look like some species were very numerous or that other species were very rare when this may not have actually been the case.
- Scientists have not searched all regions of the globe equally when looking for fossils.
- Certain regions, like Central Asia and Africa, may be difficult to explore. The fossil record in these areas may be incomplete.
- Other regions, like North America and Europe, have been carefully explored. A more complete fossil record exists for these areas.

