

Types of Fossils



Mould Fossils



Mould fossils give us clues to what ancient animals and plants looked like.

When a plant or an animal's body is buried quickly in sediment a mould fossil could form.

The weight of the many layers of sediment that wash over the organism press down on it. This compacts the sediment, which in time turns into rock.

Chemical changes take place and the animal or plant may dissolve away, leaving a mould of its shape.

Cast Fossils

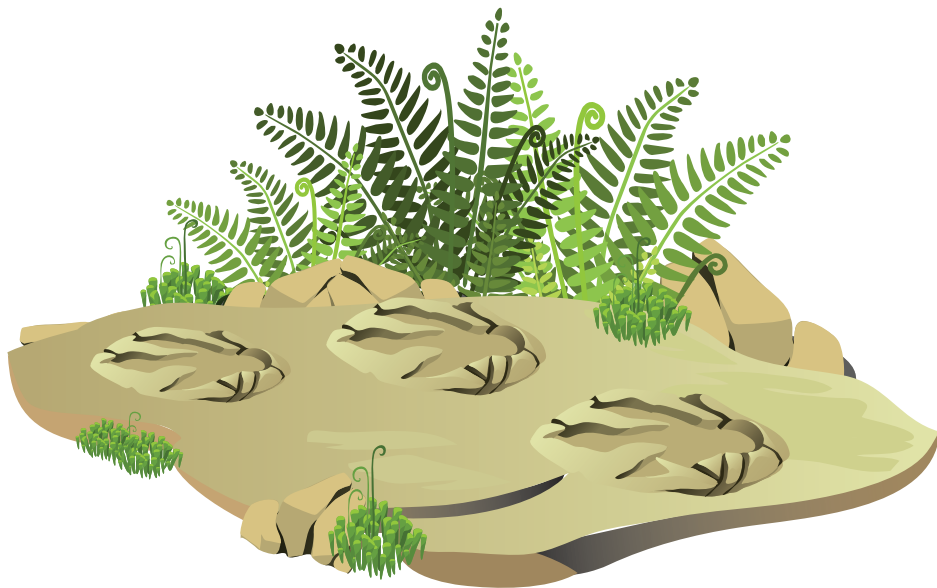
Cast fossils refer to the fossils that form inside a mould.

A plant or animal, completely buried in sediment, will take up space as the sediments press down and compact into hard rock. Eventually, the plant or animal may dissolve away leaving a cavity called a mould.

Over time dissolved minerals may fill the space in the cavity, creating a cast in the shape of the impression the plant or animal left behind in the rock.



Trace Fossils



Trace fossils give us clues as to how ancient animals lived in past eras.

Traces of an animal's life include footprints, dung, nesting materials, and the pebbles some dinosaurs may have swallowed to help digest their food (gastroliths).

Chemical reactions take place over a long period of time leading to the fossilisation of objects.

Moulds of footprints formed when an animal walked across muddy or swampy land, leaving footprints. Prolonged drought dried out the mud. Eventually the mud pan turned into rock,

True Form, Preserved Fossils



These types of fossils are preserved whole. They are very rare.

The animal may be encased suddenly in tree sap that hardens into amber. They may be frozen in ice or engulfed in a tar pit.

The soft tissues of the organism are preserved. There is little decay as oxygen cannot penetrate through the encasing substance.

Permineralisation



When an organism is buried in sediment, groundwater may permeate through its cells. The organic cells are gradually replaced by the minerals in the groundwater. Eventually the water evaporates and all that is left is fossilised mineral rock.

Minerals in groundwater that are responsible for this type of fossilising process include calcite, iron and silica.

Hard organic material as well as soft tissue material can be preserved in this way. However, soft tissue tends to decay quickly so hard materials like bones and teeth are more likely to be found as fossil specimens.

Petrification



Petrification occurs when dissolved minerals in groundwater slowly leech into the plant or animal specimen, replacing the original organic tissue.

The result is a hard fossil containing minerals such as silica, calcite and pyrite.

The fossil retains the shape of the original plant or animal.

These pictures are of petrified wood from ancient forests which have been uncovered by erosion.



Carbonisation



Carbonisation is a process that occurs when organisms dissolve, leaving behind traces of carbon in the surrounding sediments.

This process takes place when heat and pressure cause the soft tissues of plants and animals to release hydrogen and oxygen, leaving only carbon.

This leaves a detailed carbon impression of the dead organism in the rock.

