

Fossils

Fossils are formed when the remains of things that been alive are preserved within rock. They range from tiny (microscopic) to huge – like dinosaur bones.

These remains can then be discovered and studied by people (known as palaeontologists), even millions of years later.

Some of the more well-known types of fossil include:

- Fossil plants (1)
- Fossil fish (2)
- Ammonites (3)
- Trilobites (4)



1



2



3



4

Do you know any others?

Why are fossils important?

Fossils give us a window into the past.

They can give us information about how life has changed on Earth and what past environments were like. Matching fossils around the world shows how the layout of the continents has changed.

If we know the age of fossils, we can also use them to work out the age of the rocks around them. This is called relative dating (dating the other parts compared to the fossils) and has lots of uses.

Fossils have even been used to solve crimes. For example, if very small fossils are present in soil, they can be used to match suspects to crime scenes to show that they were there.

Types of fossil

It's mostly only the hard parts of living things, like their bones, that are preserved. The soft parts, such as skin, usually disappear.

Two key types of fossil are:

- Body fossils
 - Parts of the living thing's body, such as bones, teeth or leaves
- Trace fossils
 - Evidence that living things leave behind, like droppings or tracks.

How do fossils form?

Body fossils can form when:

- A living thing dies and is buried, usually by mud or sand
- This protects the remains from being destroyed completely
- Parts of the living thing, usually only the hard parts, are replaced by rock over time
- The living thing has now been fossilised.

Fossils can also form due to compression, which leaves an imprint of the animal or plant in rocks, or by a cast being formed by the shape left behind by the living thing being filled in.

In very rare cases sometimes the soft parts are preserved too, for example in amber.



Image: Kennethcgass via Wikimedia Commons.
Public domain.

Trace fossils are produced when a record of activity by living things, for example fossilised evidence of footprints, tracks, holes, droppings or teeth marks gets preserved in rock.

Try the Geological Society of London's free [fossils activity sheet](#) and [fossils fact sheet](#) for more information about the fossilisation process and the geological timescale.

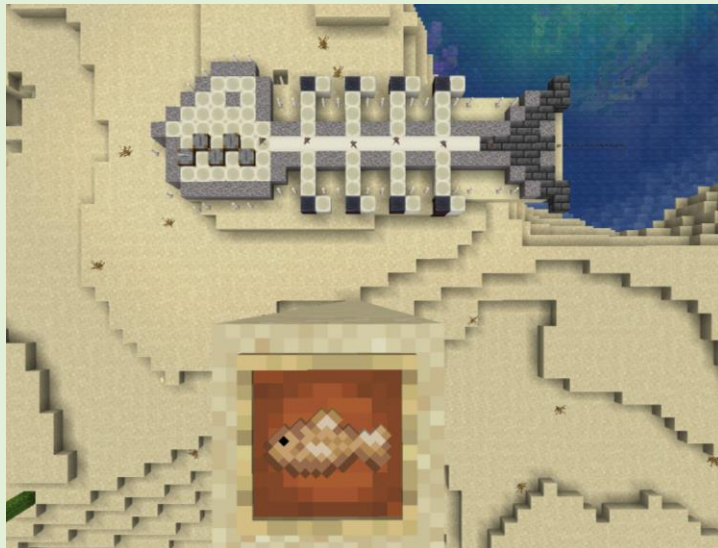
Minecraft challenge

Can you build your own fossil in Minecraft?

This could be one of the fossils pictured earlier, or another type (you could research these first). You could even make up your own.

What about making a fossil of something that lives today, ready to be found in the future?

Think about where the living thing that turned into your fossil would have lived. Which parts of the living thing might not be found in the fossil?



A fossil fish and what it might have looked like when alive, built in Minecraft by Alex Hobbs.

If you do not have access to Minecraft you could **draw** your design, or build your own using **simple materials**.

Extension: Imagine you are a palaeontologist and try building some kit that would help you hunt for fossils. You could start with a hammer. What else might be useful?