

# Fossils

*The evidence of living things long ago can teach us about life today.*

Sometimes when a creature dies its remains can be preserved. We call this becoming a fossil. We can learn about the past from them.

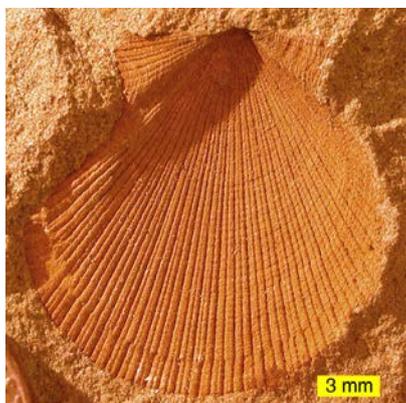
Most animals are eaten or broken up before they can be preserved

Not one in every million living creatures becomes a fossil, and we've yet to find far more than one in every million fossils that may exist!. So what are the ways that animals can become fossils?

There are plenty of other ways to become a fossil, this is just a few of them. One of the most interesting would have to be the living fossils – creatures alive today that have similar ancestors found in the fossil record hundreds of thousands, if not millions of years ago. They include goblin sharks, horseshoe crabs, and the coelacanth.

## **Mould or cast**

*The original material is completely removed, leaving a space. This can then be filled by other chemicals later on.*



## **Permineralization**

*Water slowly moving through the remains can deposit chemicals in the gaps, resulting in a fossil. This is the most common method, for example, fossilised wood and most dinosaur bones.*



## **Preserved Remains**

*Sometimes animals can be preserved inside amber or frozen ice. This is the most complete kind of fossil, capable of preserving soft tissues and even DNA.*



## **Compression**

*Occurs when the original creature is crushed flat within sedimentary rocks. This is most common with plant remains, such as coal.*



## **Replacement**

*Sometimes the original chemicals are completely replaced by new ones, such as when calcite is replaced by quartz over millions of years.*



Fact is: most (ie, more than 99%) of all the different species that have ever lived on earth are no longer alive today. The only way science knows that they were here is by their fossils.

## **Trace fossils**

Why not make your own trace fossil?  
1/ Paint the palm of your hand or foot, and while it is still wet press it to a clean piece of paper. Label and date it, and after it dries you can keep it as your very own trace fossil to show you lived!

2/ Take some air drying clay, and press your finger into it. After it dries you can fill it with plaster to create a mould of your finger, or keep the imprint as it is. Again, evidence you were here!  
What type of fossil do you think these would be classed as?

## **Creating science:**

How old does evidence of life need to be before it is considered a 'fossil'?  
Is this the best way to categorise fossils? Who came up with this categorisation scheme?  
What are index fossils? How do they help us know when things lived on earth?  
What proportion of fossils are discovered whole, while all others are only partial remains?