Mary Anning

Aim

- I can explain Mary Anning's contribution to palaeontology.

Success Criteria

- I can explain what a palaeontologist does.
- I can understand why Mary Anning's fossil findings were important.
- I can describe how palaeontology has changed our understanding of prehistoric animals.

Palaeontology and Palaeontologists

Key words to learn!

Palaeontology

(pay-lee-on-tolo-jee)

Palaeontologist

(pay-lee-on-tolo-jist)

What could a palaeontologist be?

What would a palaeontologist do?

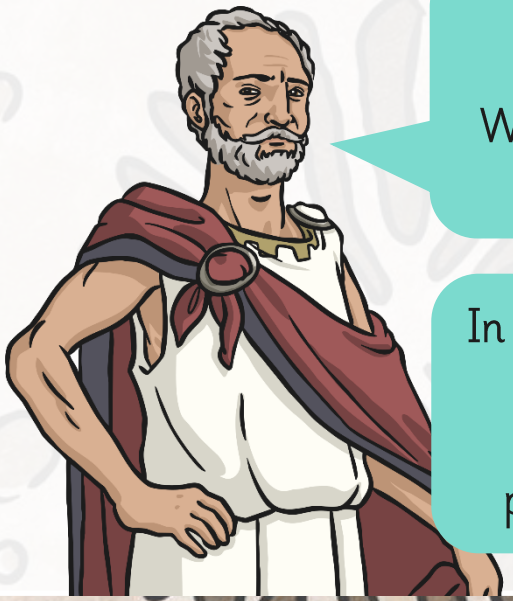
Use your previous learning in this unit to help you work it out.

History of Ideas About Fossils

Fossils have been found by people throughout history.

It's only in the last two hundred years that we have begun to understand what these fossils really are and how they formed.

Here are some ideas from the past.



We ancient Greeks found fossils of marine animals.
We realised that this meant some land used to be under water.

In ancient China, we found many fossils of dinosaurs although these were mistaken for dragon bones! Some people even used them in medicines!

Georges Cuvier
The Breakthrough

Believe it or not, in the past people were not convinced that some animals had become extinct (died out)!

Cuvier proved that fossils found were of animals, who were similar to animals that were known like elephants, but which had died out due to natural disasters like floods.

This was a really important idea which led to the beginning of Palaeontology (the study of fossils) as it proved the existence of animals that humans did not know about as they had died out before our time.

Georges Cuvier
The Breakthrough

Georges Cuvier named the fossil of a flying reptile Pterodactylus.

Cuvier's ideas were supported by evidence of fossils found in Britain, particularly those of Mary Anning.

Types of Fossils

Before we find out more about Mary Anning, let's see what you remember about the different types of fossils. In groups discuss what is hidden under the shapes.

Types of Fossils

Body Fossils

Trace Fossils

Chemical Fossils

The remains of animals or plants

Show animal activity

Matter containing carbon

Footprints and Trackways

Mold Fossils

Cast Fossils

Replacement Fossils

Whole Body Fossils

Coprolites

Mary Anning

So who was Mary Anning and what did she find that was so important?

While watching the video see if you can work out the types of fossils she found.

What have you learnt about Mary Anning?

What types of fossils did she find?

How did she learn about fossils?

Why were her finds so important?

Why do you think she was not credited with finding the fossils?

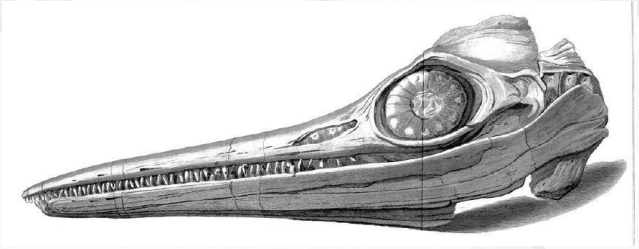
Click me to watch the video!

Mary Anning and Palaeontology

In Mary Anning's lifetime palaeontology (the study of fossils) was still a very new field of ideas and theories.

The fossils Mary Anning found were important for a number of reasons:

- Her major finds included the first ichthyosaur skull (and then whole skeleton), a complete plesiosaur skeleton and a partial skeleton of a pterosaur.
- The fossils provided evidence for the ideas of the early palaeontologists.



Ichthyosaur skull

A sketch of a plesiosaur

Mary Anning and Palaeontology

- Many scientists visited Mary Anning and she was able to help them understand more about the fossils she had found.

- She discovered 'bezoar' stones in the abdominal area of the ichthyosaur. These contained fish bones. She discussed her findings with William Buckland (a geologist and palaeontologist) who identified them as faeces and named them coprolites (which is now a type of trace fossil).

A model of a pterosaur

Mary Anning and Palaeontology

The area where she collected her fossils is now known as the Jurassic Coast, due to the large number of pre-historic sea creatures found in that area.

She didn't chance upon the fossils. She realised that they were found at the Blue Lias cliffs.
These cliffs are made from layers of shale and limestone which formed over 200 million years ago!

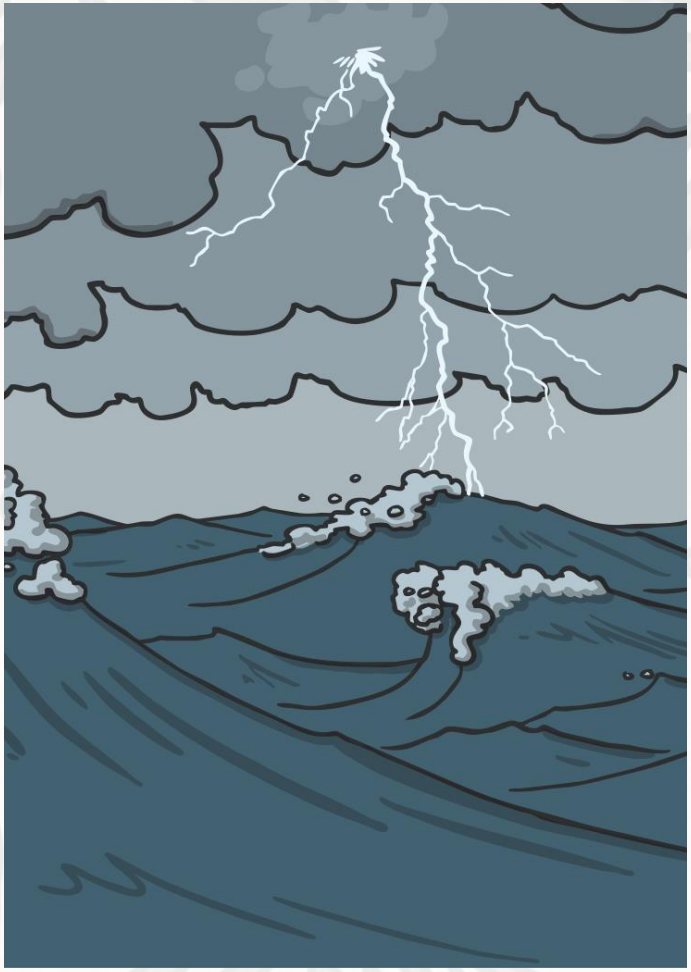
As with all discoveries, there is an element of chance. Mary Anning lived in Lyme Regis.

Mary Anning and Palaeontology

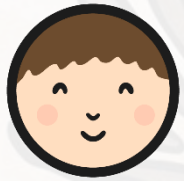
She also knew to search after a storm, as this eroded the rocks. This made it easier to hunt for fossils as they became more exposed.

In addition, she knew that she would have to search soon after the storm so that the smaller fossils were not washed away to the sea.

She was most definitely an expert fossil hunter!



Palaeontology



Palaeontology Readin
Comprehension Question

Read the Palaeontology Reading Comprehension and then answer the following ques

Q1: What are palaeontologists?

Q.2: What kind of animals lived millions of years ago?

Q.3: What does the word 'extinct' mean?

Q.4: Why did Mary Anning go fossil hunting when it was not always safe?

Q.5: What do modern palaeontologists do to keep safe?

Q.6: Why has a 'Did You Know?' box been included?

Palaeontology Reading Comprehension

Read through this reading comprehension and answer questions on the answer sheet.

Fossil Hunting Then and Now

Palaeontology has come a long way since Mary Anning's time.

We now know that there were animals who lived millions of years ago, the most fascinating of which are the dinosaurs!

We understand more about dinosaurs, how they might have looked, what they ate and how they lived.

It is thought that the dinosaurs became extinct due to a falling asteroid. The impact of the asteroid was so huge that it changed the climate (weather) around the world.

The climate became colder and the dinosaurs were unable to survive.

Finding fossils was, and still is, a dangerous activity. Falling rocks, slippery and sometimes unstable surfaces mean that it is necessary to take precautions when finding fossils.

Mary Anning narrowly missed being killed by a landslide (where lots of rocks fall at once from the cliff). Unfortunately her dog Trey was buried underneath the rocks and died as a result.

Modern palaeontologists don't often go out searching for fossils like Mary Anning did. They search existing sites where fossils have been found. They take safety precautions, like wearing a hard hat and checking the times of tides, so they don't become isolated in remote locations.

New fossils sites are usually found by accident by people who are not palaeontologists at all!

Did You Know?

Not all dinosaurs are dead! All the birds (including chickens) that are alive today are related to those dinosaurs! Even the dinosaurs that did not fly, like the T-Rex, have similarities with modern birds, including hollow bones!

Palaeontologist

Would you want to be a palaeontologist?

Why? Why not?