

GeoBus

Fossils

Note to the reader

This activity pack will help you explore the topic of fossils all from the comfort of your own home! We have adapted the activities from an interactive session that the GeoBus usually delivers in schools. This activity pack is aimed at pupils in key stage 2 (Y3-Y6) but younger children could have a go with the help of someone older.

Follow these instructions and use the Activity Worksheets when prompted: everything can be found on our website. You will need a pen, paper and colouring pencils as well as some additional materials that are detailed in each activity. Access to the internet might also be useful if you get stuck! Although it isn't essential to print out the sheets, it will make them easier to use.

Introduction

The study of fossils is important for understanding the history and evolution of life on Earth. For example, we wouldn't know that dinosaurs existed if we didn't have fossil evidence! Palaeontologists are scientists who study fossils and by the end of this workshop you will be on your way to becoming one too.

Activity One: What is a fossil?

1. Watch this clip on YouTube to find out what a fossil is and learn about different types of fossil: <https://www.youtube.com/watch?v=TVwPLWOo9TE>
 - Copy and paste the link in a new tab so you don't lose this page.
2. The clip explains four types of fossil:



Trace fossils



Mould fossils



Resin fossils



Body fossils

- Open Activity One Worksheet and use the information from the video to make fact cards about the four types of fossil. You can print out the card templates or use ours as inspiration to make your own.

→ Take this further by researching other types of fossil on the internet and making more cards! How many different types of fossil can you find?

Activity Two: How are body fossils made?

Body fossils are some of the most common fossils found around the world and there are many examples such as the extinct trilobites and ammonites. Complete dinosaur body fossils are very rare in comparison.



A trilobite body fossil



An ammonite body fossil

1. Use Activity Two Worksheet to test your knowledge on how animal body fossils are made and make your own cartoon strip to illustrate the process.

- Use the video from Activity One and BBC Bitesize to help you.
- Link to BBC Bitesize:
<https://www.bbc.co.uk/bitesize/topics/z9bbkqt/articles/z2ym2p3>

→ Take this further by making more cartoon strips of how the other types of fossil are made.

Activity Three: Make your own fossil

1. Now you have learnt how a fossil is made, you can have a go at making your own!
 - Find and open Making a Fossil Worksheet for instructions on how to make trace and body fossils from salt dough.

Activity Four: Fossils in the rock record

This activity uses jelly and sweets to show you how fossils are preserved in different layers of rock, and what that might tell us about the fossil. You can eat your fossil jelly after!

1. Find and open [Activity Four Worksheet](#) to explore how fossils are preserved in the rock record.

Summary

We hope you enjoyed this activity pack and now know all about fossils! If you like, why not display everything you have made and present it to your family to tell them what you have learned. Show us how you got along with the activities by sharing on social media and tagging us!

Instagram: [geobus_ucl](#)

Twitter: [@GeoBus_UCL](#)

Fossils: Activity One Worksheet

Using the templates below, make fact cards about the four types of fossil explained in the video found in Activity One's Instructions: (<https://www.youtube.com/watch?v=TVwPLWOO9TE>). Cut out your cards and display them somewhere like the fridge!

FOSSIL TYPE:

Sketch:

Examples:

What can they tell us:

FOSSIL TYPE:

Sketch:

Examples:

What can they tell us:

FOSSIL TYPE:

Sketch:

Examples:

What can they tell us:

FOSSIL TYPE:

Sketch:

Examples:

What can they tell us:

Fossils: Activity Two Worksheet

In this activity we are going to think about how a body fossil is made. Body fossils are fossils where the whole animal has been preserved and can include bones, teeth, claws and sometimes even skin. We can also find body fossils of ancient plants which would include wood trunks, branches and stems.

1. Cut out the sentences below and arrange into a sequence of how an animal body fossil is made. If you can't print out this worksheet, then you could write out the sentences in order. Use the YouTube clip found in the instructions for Activity One (<https://www.youtube.com/watch?v=TVwPLWOo9TE>), and other information on the internet to help you.
2. After finding the order, use the sequence to make a cartoon strip of how a body fossil is made. This worksheet includes a template that you can use.

Over millions of years, layers of rock build up on top of the fossil, burying it deep below ground.

More sediment builds up on top of the animal skeleton and is compressed to form rock.

Wind, water and ice eventually erode the rock layers to reveal the fossil.

Minerals in the ground/ groundwater surrounding the skeleton slowly replace the bone and form a fossil.

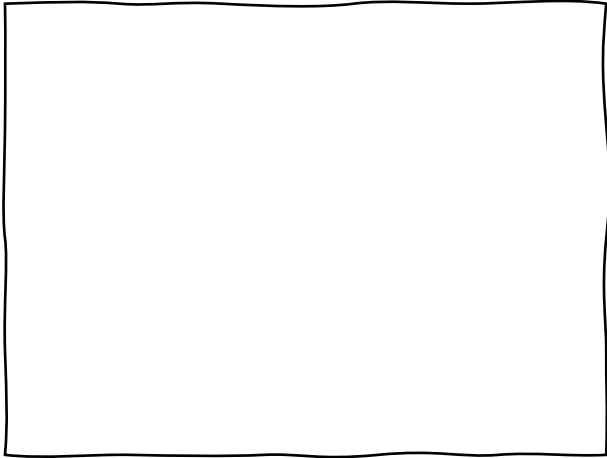
An animal dies and is buried quickly by sediment.

The fossil is displayed in a museum for everyone to see.

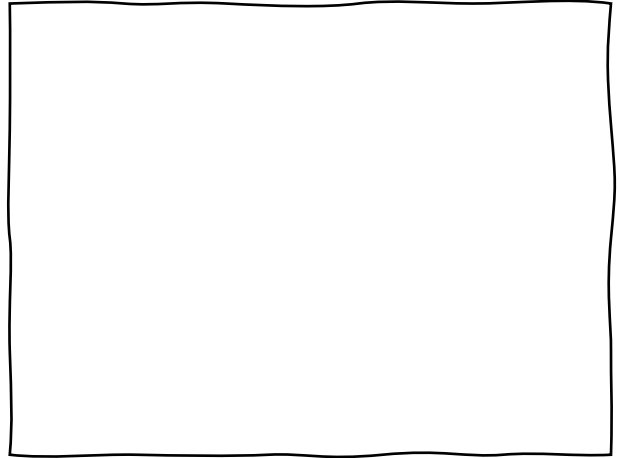
The soft parts of the animal decay, leaving only hard parts of the animal like teeth and bones.

The fossil is discovered! The fossil is carefully removed from the rock and studied by a palaeontologist.

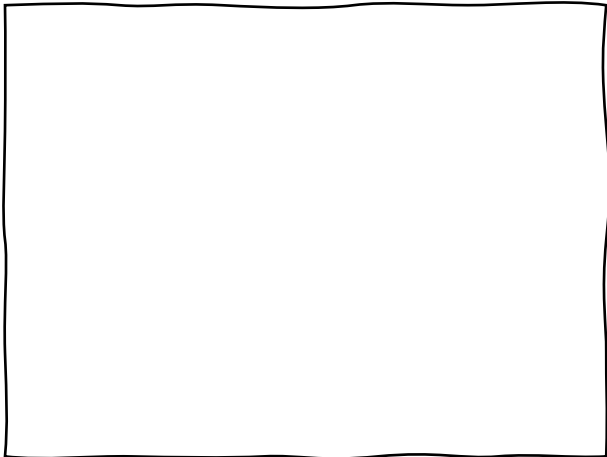
How an animal body fossil is made



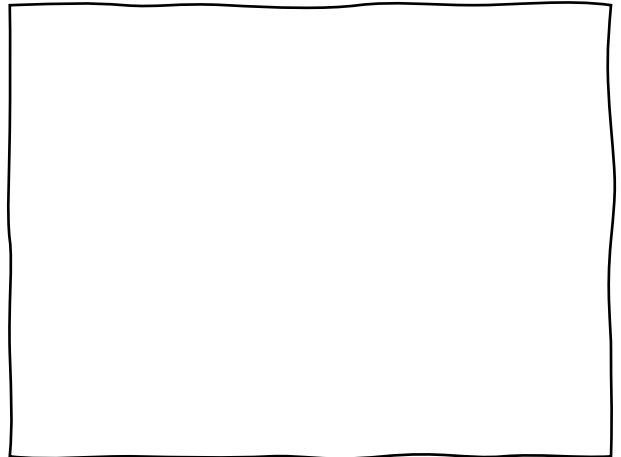
1.



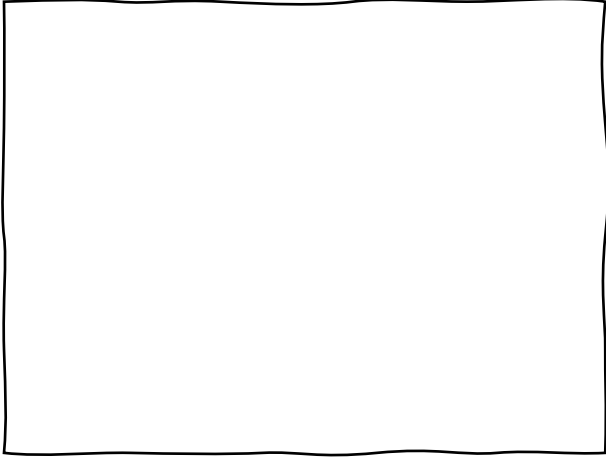
2.



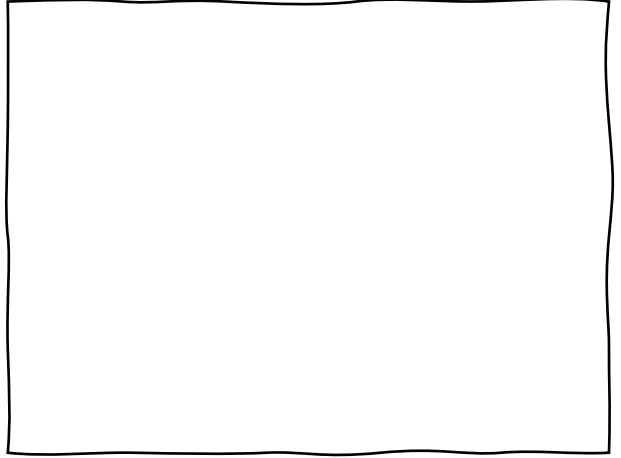
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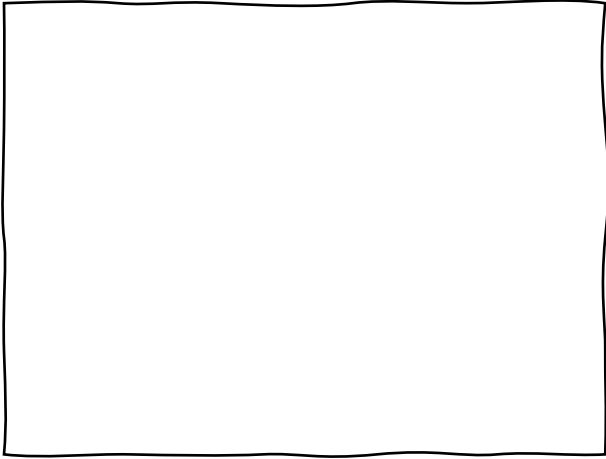
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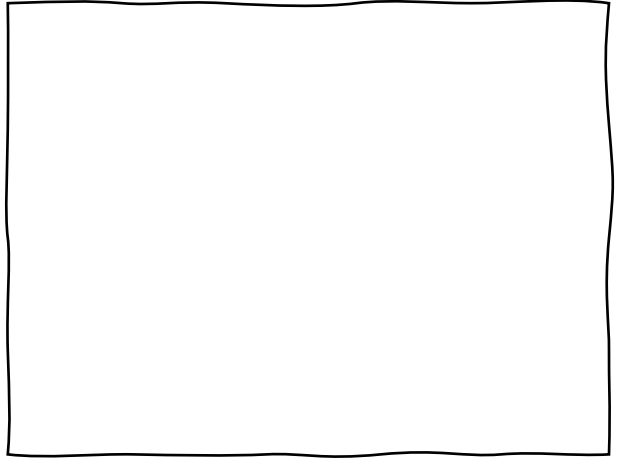
5.



6.



7.



8.



Fossils: Activity Three Worksheet

Making a Fossil



A scientist that studies fossils is called a **palaeontologist**.

There are lots of different types of fossils that can be found. When you think of a fossil, what do you think of? You probably imagine large dinosaur bones or skeletons. These are called **body fossils**.

Body fossils are the fossilised remains of plants and animals, for example leaves and bones. One type of body fossil is a **mould and cast fossil** (you can find out more about how mould and cast fossils are made by using the 'How are fossils made?' worksheet).

Another type of fossil is called a **trace fossil**. These are the clues left behind that show us how dinosaurs and other animals lived such as footprints, burrows and coprolite (fossilised dung!).

What do I need?

- 1/2 cup of **flour** (~ 125 g)
- 1/4 cup of table **salt** (~ 63 g)
- 1/4 cup of **water** (~ 63 ml)
- Sharp **pencil** or cocktail stick
- Toy dinosaur** or any toy animal
(to make footprints)

Make your own ammonite

1. Add the flour and salt into a large bowl and mix. Add the water a little bit at a time making sure you keep stirring until you have a dough.
2. Split your dough in half. Shape half of your dough into a flat pebble shape and leave the other half to one side. Try not to play with it in your hands for too long as it can get very sticky!
3. Once you have made a pebble shape, use a pencil to create the outline of an ammonite fossil into your dough. If you need help, try following our ammonite outline on the next page.
Remember! This doesn't have to be perfect - it should look millions of years old.
4. Once your drawing is finished put your dough aside to dry. This will take a couple of days but once dried, it's yours to keep forever.

Make your own fossil footprints

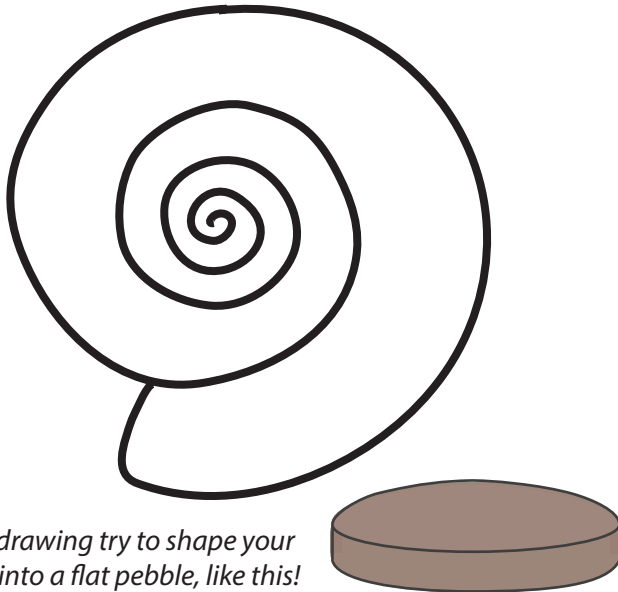
1. Use the other half of your dough that you put aside earlier. *If you have not made any dough yet simply follow step 1 of 'How to make an ammonite' to create salt dough.*
2. Shape your dough into a flat pebble shape. Try not to play with it in your hands for too long as it can get very sticky!
3. Once you have made a pebble shape, use your toy dinosaur/animal and lightly press their feet into the surface of the dough. You want to make footprints in the dough, so add more to show your animal walking across the dough.
4. Once your footprints are made put your dough aside to dry. This will take a couple of days but once dry, it's yours to keep forever.

What does an ammonite fossil look like?

Try copying the ammonite picture below to shape your dough!

STEP 1

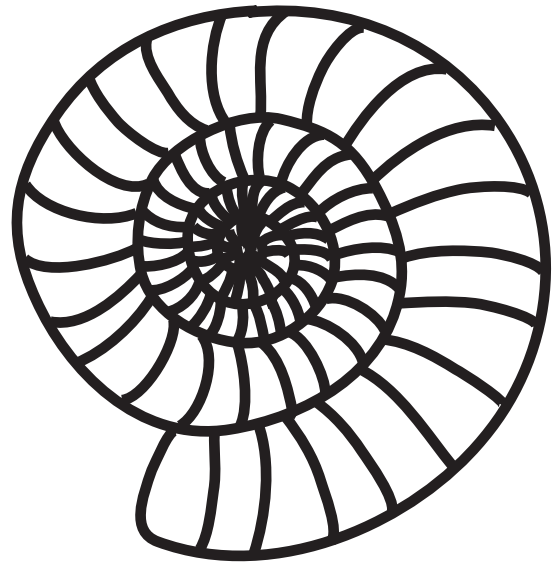
Make an imprint of a spiral using a pencil



Before drawing try to shape your dough into a flat pebble, like this!

STEP 2

Now add the lines that show the details of the ammonite shell.



Astounding ammonite facts!

Using the internet or a book to help you, challenge yourself to find the answers to the following astounding ammonite facts!

1. Where did ammonites live? Was it on land or in the sea?

.....

2. What size was the largest ammonite ever found?

.....

3. When did ammonites become extinct? *Bonus! What else went extinct at this time?*

.....

4. How did ammonites swim?

.....

5. What did ammonites look like when they were alive?

Draw a picture of one in the space opposite.

Bonus! Add labels to show the different parts of an ammonite.

Fossils in the rock record

The age of a fossil can be found by looking at the age of the rock layer it was discovered in. In this activity you will make a sequence of jelly layers (representing rock) which contain sweets (fossils) inside a jar.

You will need:

- A large glass jar.
- Different colours of make your own jelly cubes or gelatin.
- Sweets that look like animals or are interesting shapes (e.g. Gummy Worms, Foam Shrimps, Jelly Babies, Haribo) .

Instructions

1. Make your first colour of jelly as per the packet instructions. You want to make each layer about 2-4cm so how much you need to make will depend on the size of your jar.
2. Pour the first layer of jelly into the jar and mix in one type of sweet. This is your first rock and fossil layer.
3. Leave the jelly to set in the fridge (you might need to leave overnight).
4. Make your next colour of jelly and mix in a different type of sweet. Gently pour this over the first set layer of jelly in the jar and put back in the fridge to set.
5. Continue making layers of different coloured jelly and sweets until your jar is full!

The result



You will now have a jar with different layers of jelly and sweets like in the drawing above.

The jelly at the bottom of the jar is the oldest, whilst the most recent layer of jelly is at the top. This is also true for the sweets inside each layer.

The same idea can be related to fossils inside rock. This can tell us about what kinds of animals or plants lived in each time period in the history of our Earth.