

Fun with fossils

Fossils are remains or traces of living things that lived long, long ago. Paleontologists study fossils to learn about animal and plant life in the past. Only the hard parts of a skeleton are usually fossilized. However, softer parts have also been found intact.

Facts about...

Fossilization
This is a **very slow** process, but the remains of dead creatures have to be first buried quickly by sand or mud, so that they aren't eaten by other animals.

ANSWER
the questions in the quiz box. Check your answers on pp. 92–93.

Quiz

- 1 What is a person who studies fossils called?
 - a. Paleontologist
 - b. Archaeologist
 - c. Historian
- 2 Which of the following is an example of a trace fossil?
 - a. Skull
 - b. Amber
 - c. Footprints
- 3 Where are most fossils found?
 - a. Seafloor
 - b. Forests
 - c. Beaches
- 4 What is a mold fossil?
 - a. A preserved skeleton
 - b. The impression of a dead creature
 - c. An ancient object



Petrified wood is the fossilized remains of a tree trunk that have been buried by volcanic ash for a long period of time.

Trace fossils

Trace fossils are evidence of the behaviour and activities of ancient life. This includes nests, footprints, and poo, known as coprolite.



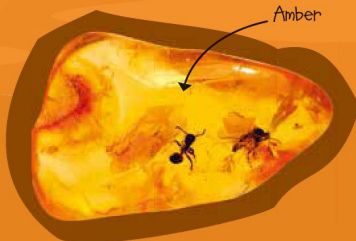
Coprolite



Dinosaur footprint

Amber

Tree sap hardens into amber over time. If a creepy-crawly gets stuck in the sap before it hardens, its body is trapped inside the amber, for people to discover much later.



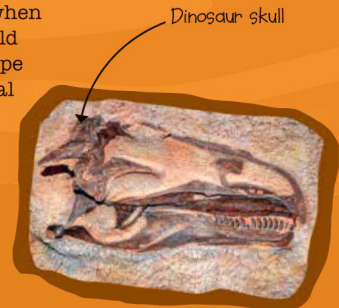
Amber

Molds and casts

A mold fossil is the impression of a dead animal or plant that rotted away after being covered in mud, sand, or sediment. A cast fossil is created when water and minerals flow into a mold fossil and turn into a solid. This type of fossil creates a three-dimensional shape of the dead creature.



Mawsonites



Dinosaur skull



Rhodonite
This mineral takes its name from the Greek word **rhodon**, which means "rose".

There are roughly 4,000 known types of mineral, and there are probably even more that haven't been discovered yet. Can you imagine what they might be like?

Chalcanthite

Olivine

Vanadinite

Celestine
This mineral is named after the Latin word for "heavenly".

Create your own mineral

Name your mineral

DRAW
your own made-up mineral and give it an interesting name.

Geode
The crystals in a geode can be brightly coloured.



ANSWER
if these statements
are true or false.
Answers on
pp. 92-93

Gem Quiz

Take this fun quiz and see how much you know about gems.



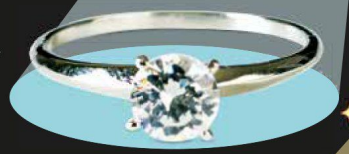
1 The softest natural substance on Earth is diamond.

2 The Imperial State Crown, part of the Crown Jewels of the British Royal Family, is set with over 3,000 gems.

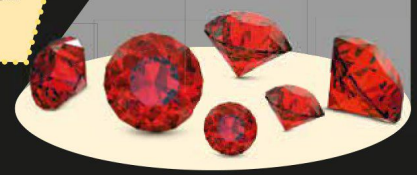
3 The Ancient Egyptians used emeralds as decorative jewels.

4 The gemstones ruby and sapphire both come from the same mineral.

5 The valuable metal gold is also a type of gem.

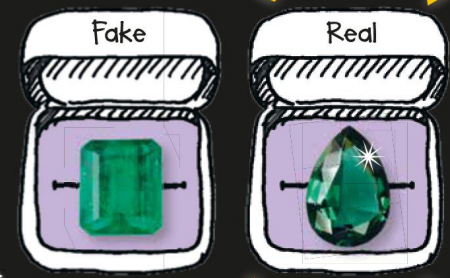


6 Rubies are known for their bright orange colour.



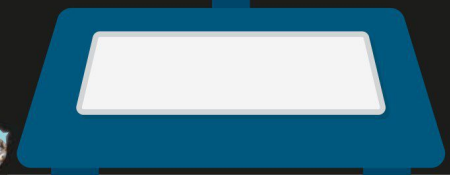
7 The largest diamond ever found on Earth is the Cullinan.

8 Aquamarine comes from the mineral beryl.



9 A fake copy of a gem is called a counterfeit.

10 The weight of a gem is measured in grams.



Draw your own crown

A crown is a headpiece (a fancy hat) usually worn by a king or queen. Crowns are a symbol of power and wealth, and are usually covered with expensive gems, such as diamonds and rubies.

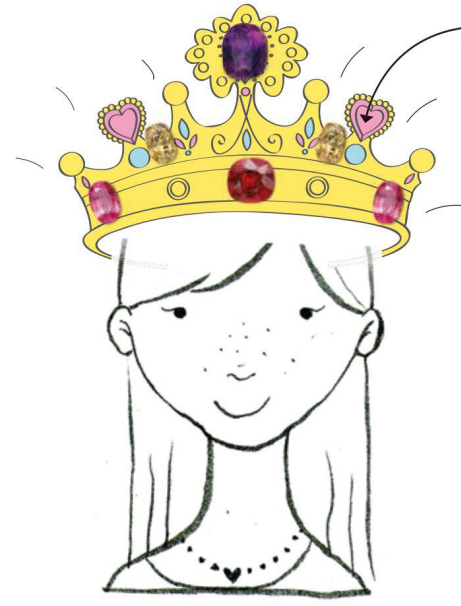


Top hat
One of the most famous crowns is the Imperial State Crown, part of the British Crown Jewels. It has more than 3,000 gems, including the "Second Star of Africa", which is cut out from the biggest diamond ever found, the Cullinan.

Imperial State Crown

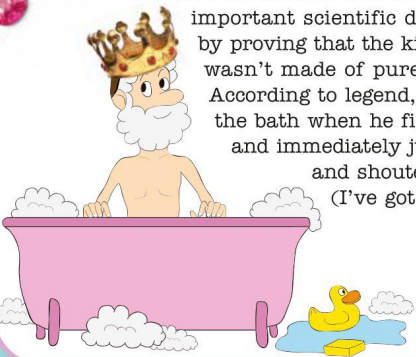
DRAW
crowns or tiaras on all of the heads, then colour them in.

Don't forget to add colour!



I've got it!

Archimedes was a Greek mathematician who made an important scientific discovery by proving that the king's crown wasn't made of pure gold. According to legend, he was in the bath when he figured it out, and immediately jumped out and shouted "Eureka!" (I've got it!).



Facts about...

Gold
Most crowns are made from gold because it's so **valuable** and **rare**. One tonne of gold is worth around £41 million today!



Cave maze

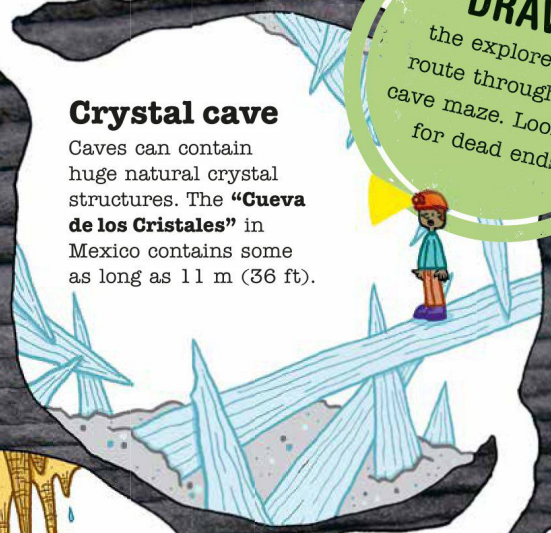
Beneath the Earth are millions of twisting, turning caves, some of which are hundreds of miles long. These are being explored by scientists and people looking for an adventure.



DRAW
the explorers a route through the cave maze. Look out for dead ends!

Crystal cave

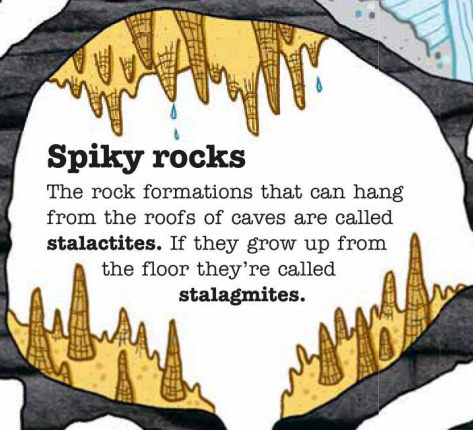
Caves can contain huge natural crystal structures. The "Cueva de los Cristales" in Mexico contains some as long as 11 m (36 ft).



TRUE OR FALSE?
SPELUNKER IS ANOTHER WORD FOR A CAVE EXPLORER.

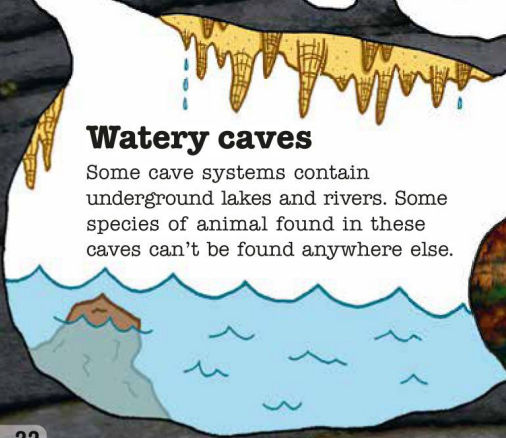
Spiky rocks

The rock formations that can hang from the roofs of caves are called **stalactites**. If they grow up from the floor they're called **stalagmites**.



Watery caves

Some cave systems contain underground lakes and rivers. Some species of animal found in these caves can't be found anywhere else.

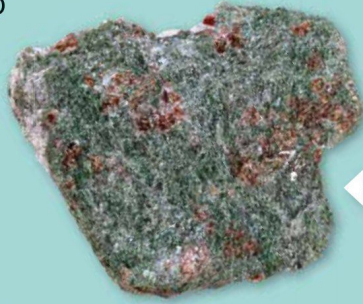


Stalactites are made from the mineral calcite.



Metamorphic rocks

Different types of rock squashed together into metamorphic rock often form bands. This, and other features, can help you identify which rock you have.



FOLLOW
the lines to see
what different
metamorphic rocks
look like.

Migmatite
The name of this rock means "mixed rock", because it is made up of gneiss or schist with layers, streaks, or veins of granite.

Gneiss
You can often identify this rock from the bands of minerals inside it, which are usually folded. It contains medium to coarse (large) grains.

Quartzite
This rock tends to be white or pale grey. The paler it is, the more quartz is present. A large amount of other minerals can cause it to be other colours.

Eclogite
This rare, beautiful rock is formed from red garnet and green omphacite. These form under extremely high pressures and are very dense.

Skarn
Differently coloured patches of minerals can help you identify this brown rock. Gold and other metals might also be found inside.