



How Poole's Cavern was made

Poole's Cavern is formed in limestone rock. This rock was created about 350 million years ago when Britain was part of a huge continent and close to the equator.

Warm tropical seas covered the area and the shells of sea creatures, which were made from calcium minerals, lay on the seabed and were gradually crushed and cemented together to form limestone rock.

Limestone is formed in layers - called bedding planes. These bedding planes contain vertical cracks called joints. Joints and bedding planes make the rock permeable.

Rainwater is able to trickle down through the cracks and into the rock. Rainwater is a weak carbonic acid which reacts with the limestone as it passes through the rock, dissolving the stone while enlarging joints and bedding planes.

Underground rivers can carry stones and gravel which can wear away limestone, this is called erosion. After thousands of years the cracks can dissolve and erode to become large caverns.





Stalagmites

Stalactites &

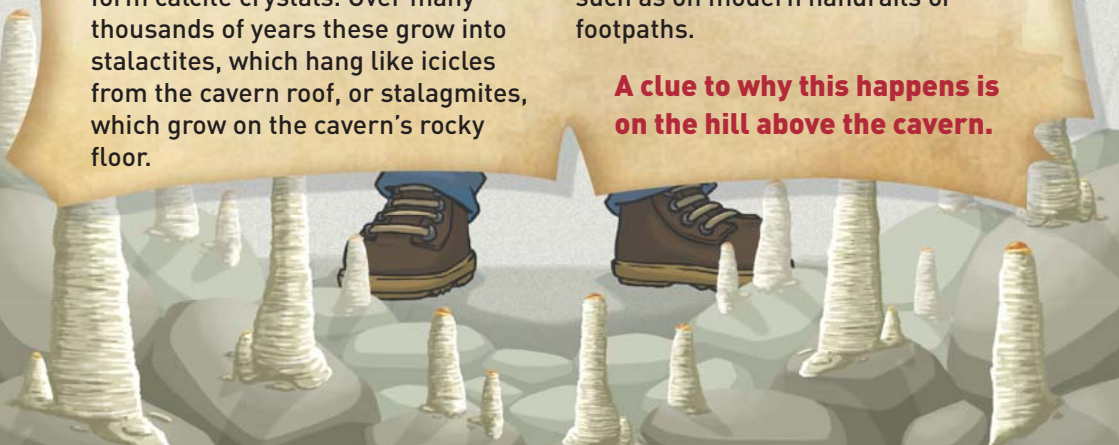
Have you felt a drip of water drop on your head in the cave? Each tiny drop of water is helping to make cave formations grow. Rain from the clouds isn't pure water and chemicals from the air can make rain slightly acidic.

This can dissolve limestone rock to form calcium carbonate. Each drip can deposit a tiny amount of calcium on the roof, or floor of the cave to form calcite crystals. Over many thousands of years these grow into stalactites, which hang like icicles from the cavern roof, or stalagmites, which grow on the cavern's rocky floor.

Sometimes flowing water will deposit flowstone, or curtain formations and beautiful crystal pools. Minerals, like iron, can colour the rocks with amazing orange and red shades.

Most cave formations grow very slowly, perhaps just one centimetre in 100 years. However, in parts of Poole's Cavern stalagmites can grow much more rapidly. See if you can spot any growing in unusual places, such as on modern handrails or footpaths.

A clue to why this happens is on the hill above the cavern.



Lime Burning

For hundreds of years limestone was dug out in quarries on the hill above Poole's Cavern. Limestone is a very useful rock as it is strong and good for building houses.

Workers heated up the stone in kilns and the resulting powder was a useful chemical, called calcium oxide or quicklime. It can also be used to make cement, concrete, white paint and fertiliser to improve the soil. Even toothpaste contains fine limestone, or calcium.

The fine dust dissolves very quickly and speeds up the growth of the stalagmites in parts of Poole's Cavern.

Waste dust, in huge piles, eventually covered most of the hill and by 1820 the quarries had closed and trees were planted to hide the mess. The bumps and hollows of the quarries can still be seen in the country park today.



Sandstone

The hills surrounding Buxton are made of a sandstone rock known locally as gritstone. This rock is very useful as a building material because it can easily be carved by stonemasons.

At Solomon's Temple you can see the white limestone walls, but the carved door and window frames are darker gritstone. Grit was laid down in an immense river, which flowed from a mountainous area. The land was below the sea and every tide and every flood dumped sand on to the sea floor.

All this happened around 300 million years ago, long before the dinosaurs. Eventually, the grit was buried by mud, coal and limestone. The layers of sand, under pressure and subject to chemical change, became rock.



Remember to look closely for fossils in the rocks!
Can you name the fossils?



Poole's Cavern,
Green Lane, Buxton, SK17 9DH.
poolescavern.co.uk



Created and published
by Colour Heroes Ltd © 2018.
www.colourheroes.com