



Use this guide to check your knowledge and ensure you haven't missed any great content!

---

A cave is a naturally occurring hole formed in stone. Insulated below ground and with areas where sunlight can't reach, caves tend to have very stable conditions, including consistently cool temperatures and high humidity. Inspired by real local caves, Cincinnati Museum Center's *Cave* is one of the largest artificial caves found in the United States, with more than 500 feet of passage through a realistic and immersive experience. The exhibit provides a look back in time to tell the long story of limestone cave formation. From waterfalls and stalactites, to fossils and troglobites, discover all the features in *The Cave's* twists and turns.

## Cave Formation

*The Cave* at CMC represents a solutional cave, where water picks up carbon dioxide as it travels through the soil, forming carbonic acid. The acidic water enters the rock and starts to dissolve it and slowly shapes the cave.

### Check your knowledge!

What are types of cave structures and how are they evidence of the cave's development?

If you visited this region 350 million years ago, during the Mississippian Period, you would find yourself under a tropical sea teeming with invertebrate life. The limestone that makes up the surrounding landscape of our region formed millions and millions of years ago when the area was under a shallow sea. The fossils found in these limestone beds help scientists understand the history of life on Earth.

### Check your knowledge!

How did the fossils end up in our limestone?

## Life in a Cave

There are animals who visit, love, and live in caves. Troglobites are animals that live only in caves and have special adaptations, like enhanced senses to navigate and find food in the dark environment. Troglobites can't survive outside these habitats and often become specialized to one or a few cave systems.

### Check your knowledge!

What are examples of troglobites, and how are they adapted to live in a cave?

Big brown bats are an example of troglaxenes, or animals that use caves when needed, roosting in them in summer, and hibernating in them in winter. Bats are nocturnal, hunting for food at night. They are also extremely helpful to humans, eating half of their body weight in insects each night, including mosquitoes and beetles. To fly in the dark, bats rely on echolocation to find their way around.

### Check your knowledge!

How do bats use echolocation to “see” in the dark?

Meals in the dark zones of caves are unpredictable. Troglaxenes bring food from the surface into the cave and leave nutrients behind for the animals that live in caves full-time and are dependent on those energy sources. However, troglobites also rely on their adapted ability to conserve energy.

### Check your knowledge!

Water is an important feature in caves. How does water help plants play an important role in caves when they can't grow without sunlight?

## Taking Care of Caves

Like all-natural settings, caves should not be used as dumping grounds for our trash. Fragile cave ecosystems are deeply affected by the impact of human pollution. Without soil, plants or any way to remove any toxins from the environment, the entire food web feels the impact of pollutants. This is an extremely important matter for the survival of our caves and the animals that live in them.

### Check your knowledge!

What are ways humans can safely and responsibly explore caves?

## Pack Your Bags

Caves are found all around the world and there are many different kinds. The largest limestone cave is in Vietnam. Limestone caves are the most abundant of *solutional caves*, meaning the rock can dissolve in acidic water. Caves that rely on erosion instead are called *erosional caves*. This can happen through the movement of water or wind, like the Wind Cave in Utah. There are lava caves, like those found in Hawaii, formed by lava. These are also known as *primary caves* because the cave formed at the same time as the surrounding rock. We call them *cave systems* when they branch out in different directions.

### Have a little fun!

What caves do you want to visit?