

# Surprises Inside a Rock



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Have you ever broken a rock open? What did you see? The inside of your rock probably looked like the outside. That's not the case with geodes, though. On the outside, geodes look like ordinary rocks. However, on the inside, geodes display sparkling crystals.

The crystals inside geodes are usually quartz, and they can be found in many different colors, including pink, purple,

blue, and green. Their color depends on the minerals that were present when the crystals formed.

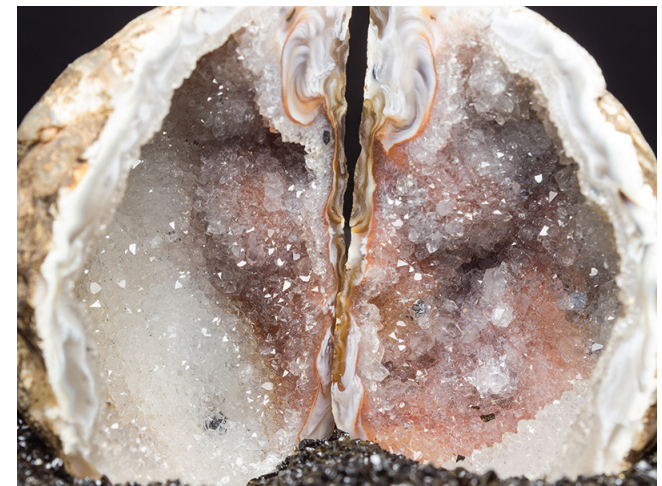
Geodes form in a few ways. Some form inside volcanic rock. Others form inside the remains of animal burrows, tree roots, or rocks that were hollowed out by water. They start with a bubble of gas trapped inside the rock. As water and steam slowly seep through the bubble, they leave behind the minerals they carried with them. These minerals then turn into crystals. Over millions of years, the crystals grow and build on each other. Because they form in the earth, the word *geode*

contains the Greek prefix *ge-*, which means "earth."

Some kinds of geodes are called thunder eggs. Native Americans in Oregon created the name thunder egg because they believed that two gods stood on the tops of mountains and threw these rocks at each other during storms.

Geodes can be found around the world, often in areas called geode beds. Many beautiful geodes have been found in Brazil and Mexico. In the United States, California, Iowa, and Utah have many geode beds. Geodes are even the state rock of Iowa and Oregon.

How can you tell if a rock is a geode? There are no clear signs. Geodes are usually round and about the size of a baseball. The only way to tell if you have a geode is to break it open. Then you might find beautiful crystals that show you that Earth has many surprises.



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