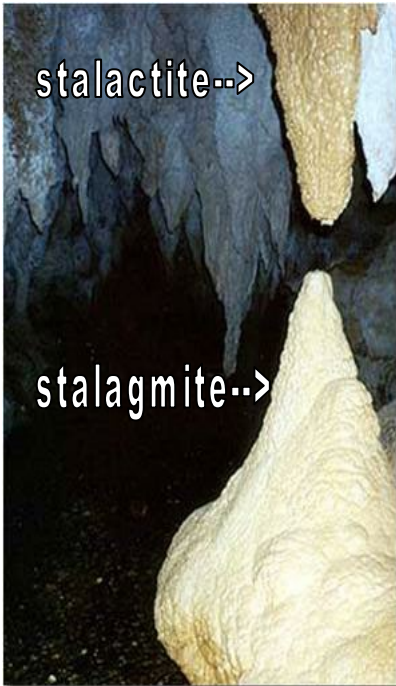


# Stalactite and Stalagmite Formation

Stalactites, with the "C" hang from the Ceiling, and stalagmites with the "G" stick up from the Ground

Stalactites are icicle-like mineral formations that hang from the ceiling of a cave. The formation on the floor underneath a stalactite is known as a stalagmite. Given enough time, these formations can meet and fuse to create *columns*.



Stalactites and stalagmites form from minerals that are dissolved in water. Every stalactite begins with a single mineral-laden drop of water. Just like salt or sugar dissolve in water, some of the minerals that make up rocks can, too. When the drop falls, it leaves behind the thinnest ring of calcite. Each subsequent drop that forms and falls deposits another calcite ring. Eventually, these rings form a very narrow (0.5 mm), hollow tube commonly known as a "soda straw" stalactite. Soda straws can grow quite long, but are very fragile. If they become plugged by debris, water begins flowing over the outside, depositing more calcite and creating the more familiar cone-shaped stalactite.

The same water drops that fall from the tip of a stalactite deposit more calcite on the floor below, eventually resulting in a rounded or cone-shaped stalagmite. Unlike stalactites, stalagmites never start out as hollow "soda straws." It may take many thousands of years for them to build up.

There are two main reasons they form only in caves. First, when water falls down as rain, it doesn't have any minerals in it yet.

It's "distilled" water that has evaporated from oceans, lakes, and rivers and then falls back to earth. It has to travel through the ground for a while, dissolving some minerals as it goes, before it can make stalactites and stalagmites. In some places, caves are actually formed by underground water dissolving away the most easily dissolved rock. Second, there has to be a constant place water drips from to make stalactites and stalagmites. Otherwise, there would just be a kind of spread out mineral layer that wouldn't have the fantastic shapes we see in caves. But when there is a steady drip, drip in one spot from underground water that is loaded with minerals, that's when things happen.

A cave is the perfect place for this. It's protected from the weather, so erosion doesn't wear things down. The water that leaks in has traveled through the ground picking up minerals on the way. And of course, a cave is an open space that allows just a little of the water to evaporate and leave tiny bit of the mineral deposited on the growing stalactite or stalagmite.

And no one disturbs things, so a steady drip can go on for thousands of years in the same spot, making some of the most beautiful formations found on earth.

While it has been claimed that the longest stalactite known hangs in the Chamber of Rarities in the Gruta Rei do Mato (Sete Lagoas, Minas Gerais, Brazil) and is 20 metres long, vertical cavers have often encountered longer stalactites while exploring. The longest stalactite viewable by the general public is in Doolin Cave, County Clare, Ireland.

A common growth rate is 1 millimeter a year.

