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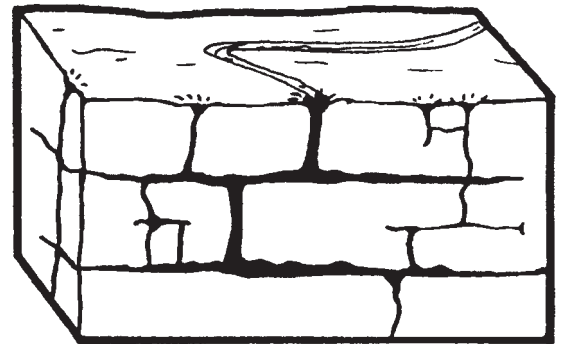
Caves

Just as the students were finding many fossils, Ms. Frizzle told them to get back on the bus. Suddenly, as they were driving, they heard rock crumbling underneath them. They were falling through a dark hole into the earth! Bump! They had landed in a huge limestone cave.

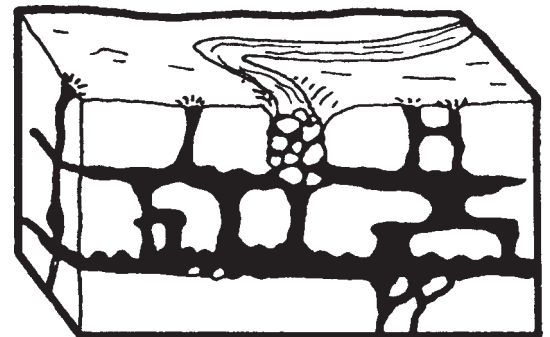
Cave Facts

Most caves are made of limestone layers which have been dissolved by rain water. As shown in the pictures below, rain water drips down through cracks in the rocks and combines with underground water.

Rain picks up carbon dioxide as it falls, and then it mixes with leaves and other materials in the soil, changing the water to a weak carbonic acid.



Over thousands of years, the acid gradually dissolves the limestone rocks, leaving crevices.



The crevices are made larger by water rushing through the cave and by rock slides. This can leave huge underground rooms and tunnels.



To the Teacher: The activities which follow will help students understand how caves are created, as well as what they look like. Use the pictures on this page to show the students the process which creates caves naturally and then conduct the lessons so they can simulate this process.

Why Does the Crust Move? *(cont.)*

To the Teacher: Do the following demonstration to show your students how convection currents work and then compare this with the motion of the magma in the mantle beneath the earth's crust

Materials: large glass bread dish (oven safe), aquarium heater, ice, small plastic bag, red and blue food coloring, water, masking tape

Procedure: Place the glass bread dish on books on a table so that the students will be able to see it clearly. Fill the glass bread dish with water within about one inch (2.5 cm) from the top. Put the aquarium heater at one end and tape it in place. Plug it in and turn it to the highest setting to warm the water. After the water feels warm to the touch (about 5-8 minutes), gather the students around the table. Place them so that they will be looking through the sides of the dish, not down on it. Place a plastic bag with several ice cubes inside at the opposite end of the dish from the heater and tape it in place. Explain to the students that this represents the layers of the earth with the heater being the core of the earth and heating the mantle (water) and the ice representing the cooler undersurface of the crust. Tell them that you will be using red; and blue food coloring to trace the different temperatures of water; red will represent the hot water and blue, the cold water.

