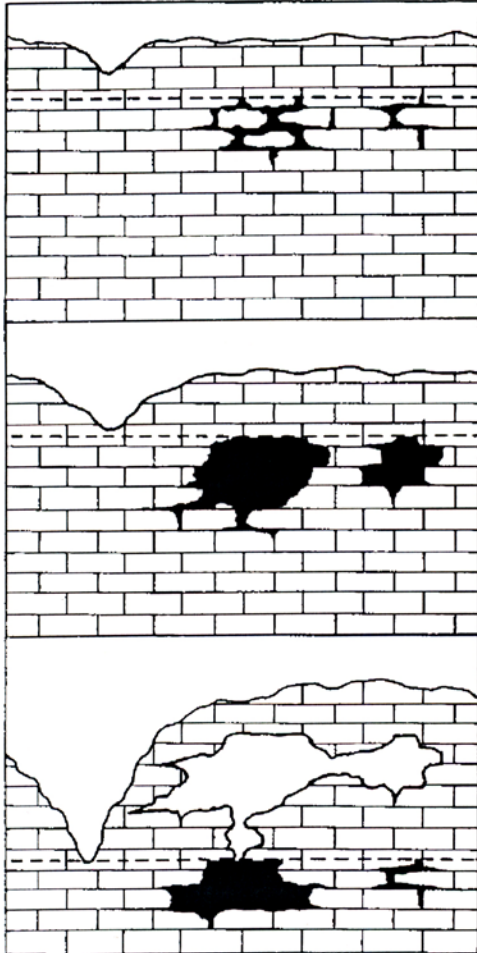


HOW CAVES FORM

Adapted from: *Kartchner Caverns State Park Natural History Curriculum*; and the *Caves and Karst Curriculum and Resource Guide*, American Cave Conservation Association, Inc. 1994

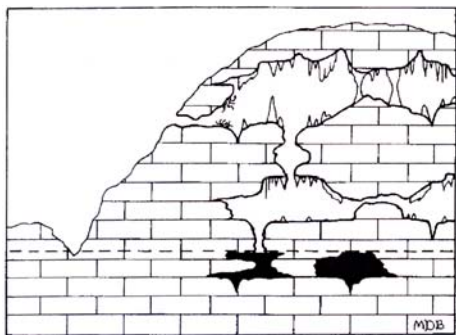
The vast majority of caves form in rock that can be dissolved by a weak, natural acid. Soluble rocks include limestone, dolomite, gypsum and marble. Caves formed in these rocks are **solutional caves**. Most of the world's caves are found in these types of rocks. 95% of the world's caves are found in limestone.



Stage 1: In the early stages, water seeps through fractures in solutional rocks, such as limestone. Rainwater dissolves carbon dioxide and forms a weak acid, called **carbonic acid**. As this acidic water moves through the limestone toward the water table, it dissolves the limestone and, in time, it develops a subterranean channel.

Underground water fills every crack in the rocks below the water table.

Stage 2: As the water table drops (usually by the down cutting of the river), upper level passages become filled with air and lower level passages begin to form. Limestone is now dissolving rapidly because of the large amounts of CO₂ in the cave water and air. The cave has no entrance yet, and no cave decorations.



Stage 3: A small passage in Glenwood Caverns collapses, making an opening to outside air. It is at this point that cave decorations begin to form. Opening the cave is similar to opening a bottle of soda pop; the CO₂ bubbles out. When this happens, the water inside the cave is not as acidic and stops dissolving rock. In fact, minerals already dissolved in the water begin to be deposited. These eventually become stalactites and other cave decorations.