

FLORIDA'S CAVES KEY

A learn-along activity sheet to accompany the video *Florida's Caves and Karst Geology*
(<https://www.stetson.edu/other/gillespie-museum/geology-resources.php>)

CAVE BASICS

A **cave** is a natural cavity in the ground which extends beyond the reach of direct sunlight, and is large enough to hold a person. The scientific study of caves is called **speleology**.

The two main **TYPES** of **CAVES** that occur in nature are **primary caves** and **secondary caves**.

1. Fill in the common examples of these two main cave types in the blanks provided.

Primary caves, like lava caves, form at the same time as the surrounding rock is forming. **Secondary caves**, like sea caves, glacier caves, talus/boulder caves, and solution/karst caves, form by dissolution and erosion of the surrounding rock *after* it has solidified.

Solution caves are the most common variety of cave. In Florida they form when groundwater dissolves carbonate rock (such as limestone and dolostone). They often contain cave formations.

2. What is another name for cave formations? speleothems
3. Florida cave formations are made from deposits of calcium carbonate. What calcium carbonate mineral form is often present in cave formations? calcite What is its chemical symbol? CaCO₃

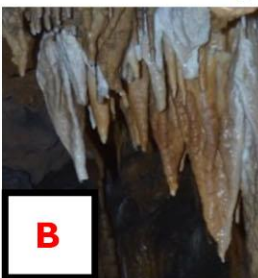
Speleothems can be divided into four general categories, based on how water, saturated with dissolved calcium carbonate, enters and moves in a cave.

4. Fill in the blanks with the category of speleothem that forms under each of the following conditions.
- When water **drips** from cave walls or ceilings it can form dripstone.
- When water **flows** along cave walls or surfaces it can form flowstone.
- When water **seeps** from cave walls or ceilings it can form pore deposits.
- When water **pools** on cave floors or surfaces it can form pool deposits.

IDENTIFYING CAVE FORMATIONS

Dripstone formations are created by dripping water, falling in small drops from the roof of a cave, leaving behind deposits of calcium carbonate.

5. Match the **dripstone** types below with their identifications, by putting the letters (A-D) in the boxes.

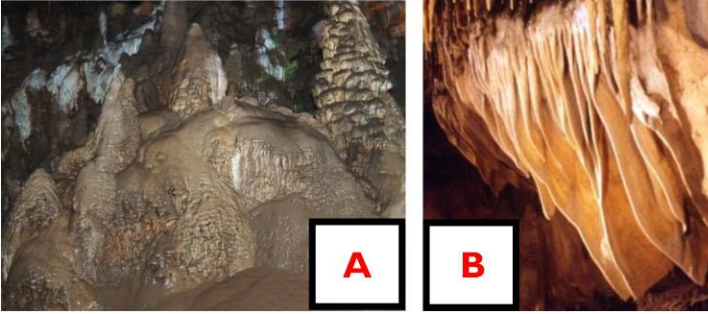


- A. **Straws** are thin hollow forms of dripstones, which begin with small, microscopic rings of calcite crystals.
- B. **Stalactites** grow from cave ceilings—as straws first—developing and thickening over time, as solution runs down their surfaces.
- C. **Stalagmites** are solid dripstones, growing upwards from a cave floor.
- D. **Stalagnates**, also known as **pillars** or **columns**, are formed when stalactites and stalagmites meet—a late stage of dripstone development.

IDENTIFYING CAVE FORMATIONS (continued)

Flowstone formations are created by water flowing down the walls or over the floors of a cave, building up layers of calcium carbonate.

6. Match the **flowstone** types below with their identifications, by putting the letters (A-B) in the boxes.



- A. **Flowstone** develops as thin layers of calcite build on each other, forming thick, rounded deposits on cave walls and floors.
- B. **Shawls**, or **draperies** or **curtains**, are a variety of flowstone that forms where trickles of water down a rockface deposit narrow strips of calcite that build up, forming thin sheets at an angle to the wall. They often have wavy folds, color bands.

Pore deposits develop when water slowly seeps—rather than drips or flows—into caves, through pores and fractures in the rock.

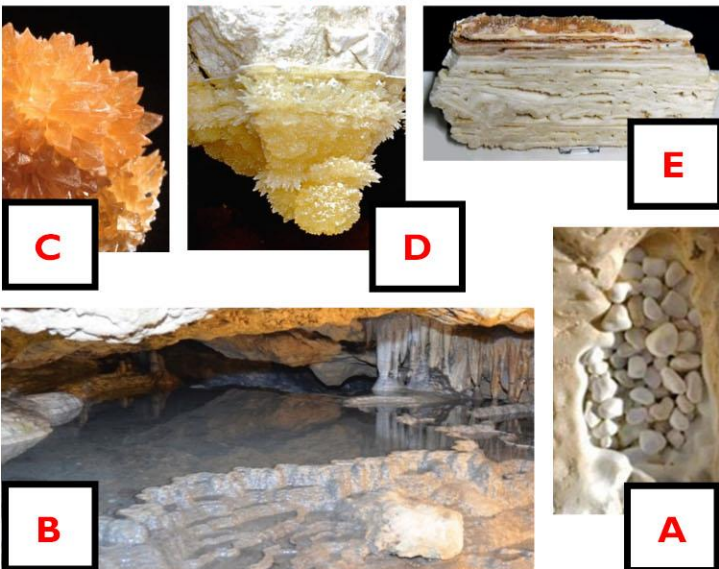
7. Match the **pore deposit** types below with their identifications, by putting the letters (A-B) in the boxes.



- A. **Helictites** are calcite pore deposits of twisted and curving capillary tubes, formed by capillary forces and varying wind currents.
- B. **Cave coralloids**, or **cave popcorn**, are pore deposits that develop as knobby, globular layers of calcite nodules, rather than as capillary tubes.

Pool deposits form where water is able to collect and pool in cave floors.

8. Match the **pool deposit** types below with their identifications, by putting the letters (A-E) in the boxes.



- A. **Cave pearls** are spherical deposits, with calcite forming around sand grains or seed crystals.
- B. **Rimstone dams**, or **gours**, are vertical walls that build up as cave pools overflow, depositing calcite at the edges. Rimstone deposits can create extended terraces on sloping cave floors.
- C. **Dogtooth spar** is a crystalline calcite pool deposit formed under very still conditions, where super-saturated solution yields large, fine crystals.
- D. **Water-level crystals**, or **shelfstones**, grow in and around the edges of pools or around existing dripstones, in still water with constant pool level.
- E. **Water-level crusts**, or **calcite rafts**, are sheet-like pool deposits created when mineral-rich dripwater hits a pool surface, forming a thin layer.

KARST BASICS

Karst is a type of landscape formed by the dissolution (dissolving) of the underlying limestone—or other soluble rock. Florida is underlain with carbonate rock, mostly limestone and dolostone, which is easily dissolved by naturally occurring, weakly acidic groundwater. Karst topography is characterized by sinkholes, springs, underground streams, and caves. **Solution caves**, like we have here in Florida, are also called **karst caves**.