

ACTIVITY #2

FORMATION OF SPELEOTHEMS

Purpose: Demonstrates process by which speleothems are formed.

Materials: Hot Water
Plastic Cups
Baking Soda (representing calcite)
Food Coloring (representing minerals)
Shoe Box Lids (representing cave floor)
Stirring Spoons
Sinkers (nail, washer, nut, etc.)
Cotton String

Procedure:

1. Place shoe box lid, open side up, on a table and set a cup inside each end of the lid.
2. Fill cups with hot water, adding baking soda a little at a time until there is slightly more than will dissolve in the water.
3. Add 1-2 drops food coloring to water and stir.
4. Soak string in water for a few minutes.
5. Tie each end of the string to a sinker.
6. Drop one sinker into each cup so string is suspended between the cups.
7. Move the cups close enough together so the string hangs at least 2 inches below the rims of the cups.
8. Observe the experiment for at least one week.

Comments:

If the activity is conducted as a teacher demonstration, keep the experiment in an accessible spot so the students may observe changes as the string becomes saturated and the water begins to drip onto the box lid. The baking soda will be left behind as the water evaporates, hanging from the string (stalactites) and building up on the lid (stalagmites). If students are divided into groups, each group may be given different lengths of string. The groups with the shorter strings may develop longer stalactites. Longer strings may hang close enough to the lid to allow columns to form. However, be sure the string does not rest on the lid. Groups may also be given different colors, representing different minerals. If the activity is being performed with younger students, it may be helpful to have the baking soda mixture prepared in advance. Older students may be asked to make drawings of the experiment as the “speleothems” grow. At the end of the week, the groups can then compare their formations to those of other groups. They may be asked to observe differences in the formations and theorize on what makes them all different.