



Stalactites and Stalagmites

Post-visit activity connection to Cave and Canopy Climber

Grade level: 2nd grade NGSS 2-ESS1-1, 2-PS1-4; CCSS RI.2.3, W.2.8, MP.2, MP.5, **4th grade** NGSS 4-ESS1-1, CCSS W.4.8, MP.5, **5th grade** NGSS 5-PS1-2, 5-PS1-3, 5-PS1-4; CCSS W.5.8, MP.5

Concepts: Formation of stalactites and stalagmites in caves

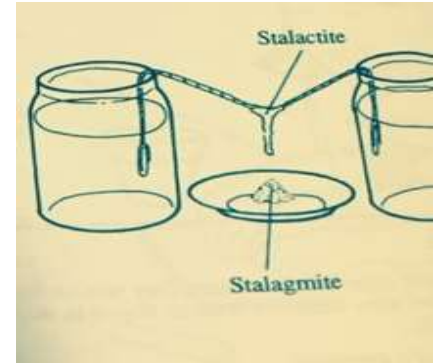
Materials needed:

1. Yarn or String
2. Epsom salts
3. Baking soda
4. Four metal washers
5. Four small glass jars or plastic cups

Procedure:

1. Cut six pieces of yarn or string measuring two feet long each. Take three pieces of the two feet long lengths of yarn or string and braid them together.
2. Tie a metal washer to the end of each side of the braided string.
3. Repeat braiding and washer process for remaining 3 pieces of string or yarn. The metal washers will serve as weights to keep the ends of the yarn or string in the glass jars.
4. Get some very warm or hot water (120-140 degrees Fahrenheit) and fill one of the glass jars two thirds of the way full.
5. Start stirring in baking soda. Create a super saturated solution by stirring in baking soda until it will no longer dissolve. Dissolve in as much baking soda as you can.
6. Do the same process with a second jar and more baking soda.
7. Repeat the process with the two remaining jars and Epsom salt. Create a super saturated solution using Epsom salt. You can add food coloring to your Epsom salt solution to form colorful cave formations.

- Use the braided string or yarn from step 1-3. Place one end of the braided string into a glass with baking soda solution and let the washer sit on the bottom. Put the other end of the braided string or yarn into the other glass of baking soda solution with washer at bottom.
- Repeat this setup process with the Epsom salt glasses, braided strings or yarn and washers.
- Arrange the cups so the strings hang down in a "U" shape. Place a plate under the "U" shape between the glasses.
- Find a warm place and let the jars sit for a couple days.
- You will start to see tiny stalactites forming down from the string and tiny stalagmites forming up from the plate.
- Make observations daily in science journals using drawings, photos, and written descriptions. Generate a list of questions to research and investigate based upon the observations.



What's Happening:

Caves are packed full of minerals. These mineral deposits form unique shapes that appear like icicles. They come in two forms: stalactites which grow down from the ceiling and stalagmites which grow up from the ground.

Stalactites and stalagmites are columns of limestone that grow in caves. They form when mineral deposits dissolve in rainwater and then drip slowly from the roof and walls of underground caves. As the rainwater evaporates, it leaves only the mineral deposits (calcium carbonate) which form the icicle like shapes.

Book List:

- Just Caves, Cavern, Stalagmites and Stalactite Photos! By Big Book
- Encyclopedia of Caves by William B. White

Extension Activities:

- Pretend that you are a cave explorer. Recently, you discovered the world's largest stalactite. Write a press release telling the world about your discovery.
- Prepare a slide show to use in your television presentation about your discovery.
- Prepare a stop-motion movie about the formation of stalagmites and stalactites.