

MAKE STALACTITES & STALAGMITES

A. Question: How do stalactites and stalagmites formed?

B. Materials Needed:

1. Magnesium sulfate (Epsom salt).
2. A large beaker and stirrer.
3. Two small beakers, a thick water-absorbent string or cloth.

C: Procedure:

1. Make a saturated solution of magnesium sulfate in water in the large beaker, by dissolving as much of the powder as you can in about 200mL of water (until some solid stays undissolved).
2. Fill the two small beakers with the saturated solution and place a thick water-absorbent string or cloth between the two beakers, such that the center part hangs somewhat lower than the beaker's rim.
3. Let stand for a few days and observe.

D: Anticipated Results:

Students should observe the formation of cones.

E: Thought Questions for Class Discussion:

1. Which cone is called stalactite and which stalagmite?
2. How were the cones formed?
3. What material are the stalactite and stalagmite made up of?
4. What other materials can we use instead of the string or cloth?
5. Where in nature are stalactites and stalagmites formed?

F: Explanation:

Stalactites and stalagmites in nature may be found in underground caves. Groundwater which contains dissolved salts and minerals, drips from the ceiling of the cave. While the drop hangs down, the water evaporates and leaves some of the salts deposited on the ceiling, forming stalactites. Similarly, the stalagmites are formed on the bottom of the cave. The water drops containing the dissolved salts evaporate and keep depositing the salts on the same spot, leaving a cone of salts that were dissolved in the water.

This demonstration is a simulation of the stalactite and stalagmite formation in caves, which may have taken centuries to build up. Water-absorbent paper towel, blotting paper, etc. may be used instead of the string or cloth.