

# KIDS

## TRY THIS AT HOME

# Dissolve-o-Cave

by Jude Isabella

You can form your own sweet cave with this experiment. Just like nature, you need water. But we replaced rocks with sugar. And you won't need thousands of years to form your cave system — about 20 minutes should do the trick. But, be warned, it takes a day to build the mountain.

## MATERIALS:

- Sugar cubes
- Icing (egg whites, icing sugar, cream of tartar)
- Eye dropper
- Food colouring
- Pie pan



## INSTRUCTIONS:

1

Make the icing. Use an electric mixer to beat three egg whites and half a teaspoon of cream of tartar until frothy. Gradually blend in four cups of icing sugar. Beat on high speed until stiff and glossy.

2

In the pan, build a "mountain" with the sugar cubes. (You can make it square or rectangular.) Cement the cubes together with the icing. Cover the whole mountain with icing. Be generous but sloppy. You want areas where water can seep through the icing to the sugar cubes.



3

Wait a day for your mountain to dry.



4

Take a cup of water and add some food colouring. Blue is pretty.

# Grow Your Own Stalagmite

by Jude Isabella

As water drips through a limestone cave it dissolves — remember? — calcium carbonate. Water eventually evaporates and leaves behind the calcium carbonate it carries along as it flows. Water dripping will leave stalagmites (from the cave bottom) and stalactites (from the cave roof). When stalagmites and stalactites join, they're called columns.

## MATERIALS:

- Thick cotton shoestring
- Saucer
- Two jars (we used canning jars)
- Washing soda (also known as sodium carbonate)

## INSTRUCTIONS:

- 1 Fill the jars with warm water.
- 2 Pour some washing soda into a jar and stir. Dissolve as much washing soda into the water as possible. Repeat the process in the other jar of water.
- 3 Place the jars side-by-side with the saucer in between.
- 4 Arrange the shoestring so each end rests in a jar and the middle hangs over the saucer.
- 5 Put a pinch of washing soda on the saucer. After a few days, you will have your own "stalagmite".



## WHAT'S HAPPENING?

The shoestring absorbs the water. When it can hold no more water, the water drips onto the saucer. Each water drip contains dissolved sodium carbonate. As the water evaporates, the sodium carbonate is left behind to grow up, and if you wait long enough, down.

A stalagmite was noticeable after about a day. By day three, we almost had a column. ✈



- 5 Use the eye dropper to drip water on the mountain. Be patient. Eventually you will see progress as the water dissolves the sugar. Before you erode the mountain completely, break it open to see how the water behaved inside.

## WHAT'S HAPPENING?

Most caves are found in areas with limestone rock. Surface water trickles down through cracks in the rock. Water contains carbon dioxide, which is a mild carbonic acid. This acid eats away at limestone, also known as calcium carbonate. Sugar played the starring role of calcium carbonate in this experiment. ✈