

## At Home Scientist: Volcanoes

Did you know that there once was a volcano in New Hampshire? Geologists believe that there are at least two historic, extinct volcanoes in the Granite State<sup>1</sup>. 100 million years ago, then again 10 million years ago later, one erupted creating the beautiful Ossipee Mountain range that houses Castle in the Clouds today! The second volcano was substantially smaller – it was located at Pawtuckaway State Park<sup>2</sup>.

The ancient volcanic formation in Ossipee is geologically significant because it formed a unique circle. This phenomenon is only found in a few spots around the world. The eruptions also gave way to a wealth of minerals, and unique rock formations. It's considered to be “the most accessible, exposed and vivid example of the inner workings of a volcanic system”<sup>3</sup>. The formation and geological history draws researchers from around the world.



The Plants drew inspiration from these natural wonders and had the stone facade for their home hand cut to replicate the appearance. Castle in the Clouds also offers an exceptional view of the circular mountain range, and hiking trails on the property bring visitors to the rock formations.

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<sup>1</sup> [https://northernwoodlands.org/outside\\_story/article/volcano-new-hampshire](https://northernwoodlands.org/outside_story/article/volcano-new-hampshire)

<sup>2</sup> <https://www.concordmonitor.com/A-New-Hampshire-volcano-17529897>

<sup>3</sup> <https://www.concordmonitor.com/A-New-Hampshire-volcano-17529897>

## How to make a Volcano?

### *Materials:*

- 10 ml of dish soap
- 100 ml of cold water
- 400 ml of white vinegar
- Food coloring
- Baking soda slurry (fill a cup about ½ with baking soda, then fill the rest of the way with water)
- Empty 2-liter soda bottle

### *Instructions:*

**NOTE: THIS SHOULD BE DONE OUTSIDE DUE TO THE MESS.**

1. Combine the vinegar, water, dish soap and 2 drops of food coloring into the empty soda bottle.
2. Use a spoon to mix the baking soda slurry until it is all a liquid.
3. Eruption time! ... Pour the baking soda slurry into the soda bottle quickly and step back!

### *How it Works:*

A chemical reaction between vinegar and baking soda creates a gas called carbon dioxide. Carbon dioxide is the same type of gas used to make the carbonation in sodas. What happens if you shake up a soda? The gas gets very excited and tries to spread out. There is not enough room in the bottle for the gas to spread out so it leaves through the opening very quickly, causing an eruption!

### *Extra Experiments:*

1. Does the amount of vinegar change the eruption?
2. Does the amount of water change the eruption?
3. Does the amount of baking soda change the eruption?

THIS ACTIVITY WAS TAKEN FROM: <http://www.sciencefun.org/kidszone/experiments/how-to-make-a-volcano/>