

Snow Play: Make a Frozen Volcano

No snow required for this explosive activity!

By [Liz Heinecke](#) Feb 17, 2017



Cure your child's cabin fever with some explosive outdoor fun! It's simple to make colorful snow volcanoes using stuff you probably have on hand.

No snow? No sweat. Instead of snow, put a paper bag or coffee filter over a bottle to create a volcanic cone. Make sure there's a hole in the top that allows you to add baking soda to the bottle.

Hint: Vinegar can sting the eyes so supervise your small children.

What You'll Need for This Activity

- An empty plastic bottle (16-20 oz.)

- ¼ cup baking soda
- Food coloring
- 1 cup vinegar
- Paper funnel or paper cup
- Snow

How to Make a Snow Volcano

Step 1: Pour 1 cup vinegar into a plastic bottle.



Step 2: Add a few drops of food coloring to the vinegar.

Step 3: Prepare a paper funnel, or squeeze the lip of a paper cup to form a pouring container.



Step 4: Measure $\frac{1}{4}$ cup baking soda into a cup if using a funnel, or add it to your paper pouring cup.

Step 5: Go outside and form a cone of snow around your plastic bottle so that it looks like a volcano. Work fairly quickly so that the vinegar doesn't get too cold.



Step 6: Quickly pour all of the baking soda into the bottle using your funnel or pouring container, and stand back!

The Science Behind the Fun

Chemical reactions occur when two things are combined — like baking soda and vinegar — which make something new. The new thing your kids create when combining baking soda and vinegar is carbon dioxide gas.

Once your children add the baking soda to the vinegar, the carbon dioxide gas pressure gets so strong that there's only one way for it to escape: through the mouth of the bottle. The gas escapes with so much force that it shoots some liquid into the air, creating an eruption.

Interesting fact: In Iceland, there are many active volcanoes buried under snow, ice, and even glaciers. When the volcanoes erupt, ash often covers the snow before the lava flow arrives. When hot lava meets snow and ice, hissing steam erupts into the air.

Enrichment Ideas

- **Try the same experiment using warm vinegar.** Ask your child whether he thinks it will make a bigger or smaller eruption and let him test to see whether he guessed correctly. (Chemical reactions happen faster when heat is added.)

- **Let your child try the experiment with a larger bottle.** Ask your child how much baking soda and vinegar he thinks he'll need to create a good eruption. For example, if the bottle is twice as big, does he think it will take twice as much?

You can find more experiments like this one at kitchenpantryscientist.com, and in my books *Kitchen Science Lab for Kids* (Quarry Books) and *Outdoor Science Lab for Kids* (Quarry Books).

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