



Volcanic Eruption Science Projects

From Home Science Tools

#1: Volcano in a Bottle (Baking Soda + Vinegar)

You can demonstrate the reaction between acids and bases and a volcanic eruption using some simple household items. Kids usually have a great time doing this experiment, and may want to repeat it several times!

To make a big eruption, use a small plastic bottle (the size 20-oz soft drinks come in works well). Fill the bottle halfway (1 to 1.5 cups) of vinegar. To start the eruption, drop a baking soda 'bomb' into the bottle—wrap one tablespoon of baking soda into a small piece of tissue paper, tying the ends with string.

You should see an instant eruption—'lava' will spurt out of the mouth of the bottle. The baking soda, a base, neutralizes the acid in vinegar. This releases carbon dioxide gas, which causes the fizzing action in your volcano.

If you want your volcano to look more realistic, use clay or playdough to make a 'mountain' around the bottle. Or, if you're working outside, you might want to use dirt and pebbles. You can also add red food coloring to the vinegar solution to make it look more like lava.

To learn more about volcanoes, take a look at our [Introduction to Volcanoes Science Lesson](#) (includes two more Volcano Science Projects).

#2: Volcano in a Beaker

You can create an erupting volcano using wax, sand, and water!

What You Need:

- [400 ml glass beaker](#)
- Wax candle (A red or orange candle works best!)
- [Sand](#), well rinsed (so as not to cloud the water)
- Water
- [Alcohol burner](#) or [alcohol lamp](#)
- Matches
- [Safety goggles](#)

Safety Note: Only use a high-quality glass beaker or liquid measuring cup (such as Pyrex) for this experiment! An ordinary glass jar or drinking glass will likely crack under this amount of heat. Never put a glass container directly onto the stovetop!

What You Do:

1. Light the candle wick and let it burn for about 20 seconds. Carefully tilt the candle over the beaker, dripping wax inside. You'll need 2-3 teaspoons of wax at the bottom of the mug. Blow out the candle.
2. Allow the melted wax to cool and harden. Then pour enough sand into the beaker to cover the wax in a thin layer (about an inch).
3. Carefully fill the beaker up with water, taking care not to disturb the sand. Allow the sand to settle until the water appears clear again (about 30 seconds).
4. Light the alcohol lamp using a wooden match (Or use an alcohol burner for more speedy results!) and wait for the flame to stabilize (about one minute).
5. Place the stand over the alcohol lamp and put the beaker on the stand. Wait for the contents of the beaker to be heated slowly. For the most dramatic results, heat slowly over low heat.
6. As the wax melts, you'll hear a faint hissing sound and see a bulge in the sand layer. Eventually the bulge will erupt, and hot wax will flow through the sand and the water to the top of the beaker.

What Happened:

Volcanoes erupt when red-hot magma seeps up through a vent in the earth's crust. In this experiment, the wax represents magma from the earth's mantle, and the sand represents the earth's crust. The water is where the crust and the air meet. Once a volcano has broken through the earth's crust lava can flow all over the earth, or it can even be forced out into an ocean. When the wax "magma" reaches the water, it becomes "lava." Just as the wax hardened once it reached the water in this experiment, real lava cools and hardens once it reaches earth's surface.






If you want to see the volcanic reaction again, melt a few drops of wax to stick the used wax to the bottom of a clean beaker. Cover with sand and water, then heat slowly as before. The kind of reaction you will get depends on the levels of sand and wax, as well as how slowly or quickly the alcohol lamp melts the wax. Try to keep the heat as steady as you can for a more dramatic result.

Visit the following website, [HomesScienceTools.com](https://learning-center.homesciencetools.com), for more experiments and activities for kids.

<https://learning-center.homesciencetools.com/article/volcanic-eruption-science-project/>

HOME CHECKLIST ✓

YES NO

		YES	NO
 <p>KITCHEN/HOUSEHOLD</p>	1. No household products under the sink unless locked?		
	2. Medicines off counters and window sills?		
	3. Food and household products stored separately?		
	4. Furniture polishes, drain cleaners, lamp oil inaccessible and locked up?		
 <p>BATHROOM</p>	5. All medicines in a safe place?		
	6. Old medicines discarded regularly?		
	7. All safety closures secured properly?		
	8. Always read labels before using?		
	9. Bathroom vanity free of harmful products?		
	10. No beauty/hair care supplies on window sill or ledges?		
 <p>BEDROOM</p>	11. Medicines kept off dressers and bedside tables?		
	12. All perfumes, cosmetics and nail care products out of reach?		
	13. No flaking paint chips on woodwork or furniture?		
	14. Older child's cosmetics/grooming products safe from younger children?		
 <p>LAUNDRY/ BASEMENT</p>	15. Soaps, detergents, and cleaners out of reach or in safety-latched cabinet?		
	16. Disinfectants/deodorizers out of reach or locked up?		
 <p>GARAGE</p>	17. Carefully read instructions on bug sprays and pesticides?		
	18. Insecticides, weed killers, and fertilizers locked up?		
	19. Gasoline and anti-freeze inaccessible/locked up?		
	20. Paint thinner in original container and out of reach?		
<p>SCORE</p>	<p>ONE POINT for each "YES"</p> <p>19-20 - EXCELLENT - Stay Alert 16-18 - GOOD - But Keep Trying 10-15 - ROOM FOR IMPROVEMENT 0- 9 - ASKING FOR TROUBLE</p>		



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