

Volcano Project

Your child will be hooked on chemistry after she builds a model volcano by combining an acid and an alkaline substance. For extra fun, use red clay around the volcano's opening to simulate lava. Caution! Wear your safety goggles—you don't want to get the "lava" in your eyes.

What You Need:

- 1 tablespoon baking soda
- Modeling clay (like Plasticine)
- Newspaper
- 3 drops red food dye (optional)
- $\frac{1}{4}$ cup of vinegar
- 3 drops liquid soap
- Safety goggles

What You Do:

1. Have your child help you cover your work surface with newspaper.
2. Invite her to form a volcano shape out of the modeling clay. It should be about 6 inches high.
3. If you have red modeling clay or paint available, use it for the volcano's top. Ask her to attach a bit to the tip of the volcano to enhance its appearance.
4. Invite her to poke an opening in the volcano that's about 4 inches deep and 2 inches wide.
5. Add one tablespoon of fresh baking soda. (Stale soda will not create a proper alkaline reaction!) If available, add 3 drops of red food coloring to the baking soda in order to enhance the eruption.
6. Next, ask her to add 3 drops of liquid soap.
7. Now, it's time for her to put on her safety goggles! Get ready to stand back.
8. Finally, invite her to add the $\frac{1}{4}$ cup of vinegar, and see what happens! The reaction's sure to pique her interest in the science behind this volcanic activity.



What Happened?

The volcano "erupted" when the acidic vinegar came into contact with the alkaline baking soda, which neutralized it. The volcano then emitted carbon dioxide, which created the bubbles and popping noises.

An alkali, or base, will corrode surfaces. When combined with an acid, it forms a salt. Acids and alkalis are measured by the pH scale, with acids ranging between one and six, and alkalis ranging from eight to 14. Seven on the pH scale is pure water, which is devoid of either acidity or alkalinity.

Fun Volcano Fact:

What is the difference between lava and magma? Magma is underground liquid rock. As soon as magma shoots out of a volcano, it's called lava!