

Creating Self-Inflating Balloons

A fun project to prove that you can create a chemical reaction simply by mixing an acid and a base.

MATERIALS NEEDED:

- *Test tube
- *Funnel
- *Vinegar
- *Teaspoon of baking soda
- *Small balloon

EXPERIMENT PROCESS:

*Put the test tube where it will stand upright securely, or have a partner hold it. Fill it halfway with vinegar.

*Give the balloon a good stretching, the same way you would if you were about to blow it up.

*Use the funnel to put the baking soda inside the balloon. Gently shake the balloon until all the baking soda goes to the bottom.

*Making sure none of the baking soda gets into the test tube, carefully stretch the opening of the balloon until it's completely over the opening of the test tube. If it's not a tight fit, your balloon is probably too big and you should use a smaller one instead.

*Once the balloon is attached to the test tube, lift the rest of the balloon so that the baking soda falls into the vinegar. You might have to give it a gentle shake to make sure it all goes in.

*Watch the balloon inflate!

Here is what you will observe happening: the vinegar, an acid, is creating a chemical reaction with the base, baking soda. When the two substances mix, you get carbonic acid, which is unstable and falls apart (decomposes) and it becomes carbon dioxide (the gas that's filling the balloon!) and water. Since the carbon dioxide is much less dense than the stuff you used to create it, it wants to expand, and the balloon is stretchy enough to allow it to do just that!

