

# Self-Inflating Balloons

You can sell this as a science project or a magic trick. Inflate a balloon without touching it - our kids loved it!

## Equipment

Small water bottles (the smaller the better)  
Balloons (one per child plus a few spares)  
Vinegar  
Bicarbonate of soda  
Funnels and spoons

## Method

1. Pour some vinegar into each bottle, we quarter filled ours.
2. Stretch the balloons to loosen them up a bit but don't blow into them (you don't want them damp inside). Using the funnel, spoon some bicarbonate of soda into the balloon (see comments below for quantities). Make sure the powder is fully inside the balloon.
3. Remove the funnel. Twist the end of the balloon a couple of times to stop the powder escaping. Carefully attach the balloon to the top of a water bottle. Make sure there is a good seal so no air can escape.
4. When you're ready, hold up the balloon and un-twist it. If necessary shake the powder down into the vinegar. You should see an instant reaction.
5. As the liquid starts to fizz the balloon should begin to inflate "by itself". Once the reaction stops the balloon will not inflate any further. It will stay inflated though.
6. For extra squeals you can let the balloons off the top of the bottles to fly about.

## The science bit

When the sodium bicarbonate reacts with the vinegar it releases carbon dioxide which inflates the balloon. The more bicarb powder you add the more gas you get and the more the balloon inflates, so you could get the children to experiment with different quantities of powder to find this out. Also, it is possible to re-use the vinegar a few times (as long as you haven't filled the bottle with bicarb and totally neutralised the acid in the vinegar).

Please note that if you use a large bottle the gas will need to fill the space in the bottle before inflating the balloon, so you may not get such a satisfying result.

## Areas of learning and development:

UW Understanding the World  
PSED Personal, Social and Emotional Development  
PD Physical Development

