

Try out the self-inflating balloon

Concept—Chemical energy

CURRICULUM LINK:

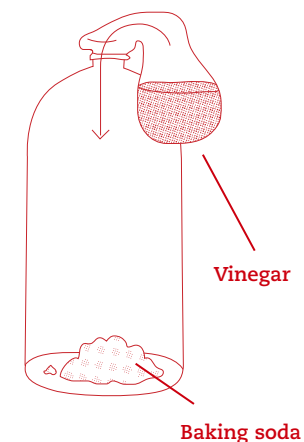
Science Curriculum—Materials strand

Experiment

You will need:

- Empty 500ml plastic drink bottle
- Balloon
- Funnel
- Half a cup of vinegar
- 8 teaspoons of baking soda (a common cooking ingredient found in the supermarket)

1. Before the experiment pre-stretch the balloon by blowing it up and letting the air out.
2. Place the baking soda in the bottle.
3. Through a funnel pour the vinegar into the deflated balloon.
4. Without spilling the vinegar, slide the mouth of the balloon onto the bottle.
5. Lift and squeeze the attached balloon so that the vinegar pours into the bottle.
6. Within a minute or two the balloon will inflate.



Note: If you find it difficult to put the balloon onto the bottle without spilling the vinegar, you could try putting the vinegar in the bottle and the bread soda in the balloon. When you mix the vinegar and bread soda a chemical reaction takes place. The chemical reaction makes a gas, carbon dioxide, that fills the balloon. Burning is a chemical reaction. When coal is burned the chemical energy is converted to heat energy, and CO_2 is released.

Do more:

- Try releasing the carbon dioxide in the balloon over a lit candle. Carbon dioxide is used in fire extinguishers as it keeps oxygen away from the flame and puts the fire out. Does the candle stay lighting?
- Try using the filled balloon from this experiment in your rocket balloon race. By doing this you are using the chemical energy that was stored originally in the bread soda and vinegar to power your rocket balloon.

