

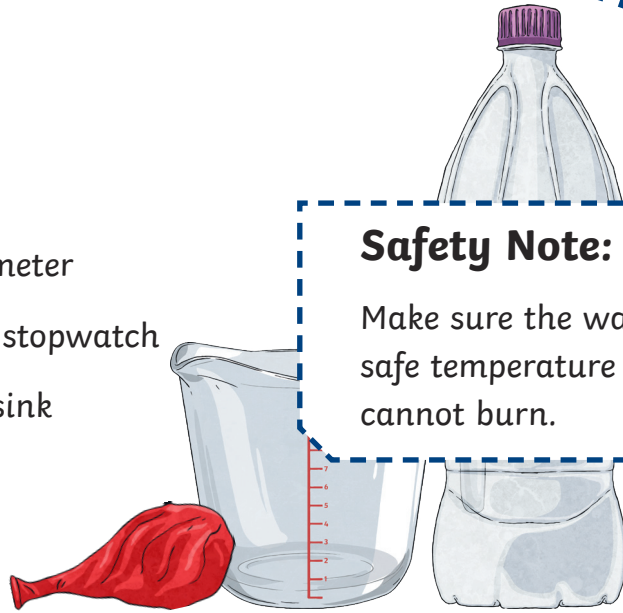
Balloons, Bottles and Gas

You Will Need:

- plastic bottle
- balloon
- water
- kettle or microwave
- thermometer
- clock or stopwatch
- tubs or sink
- jug

Safety Note:

Make sure the water is at a safe temperature so that it cannot burn.

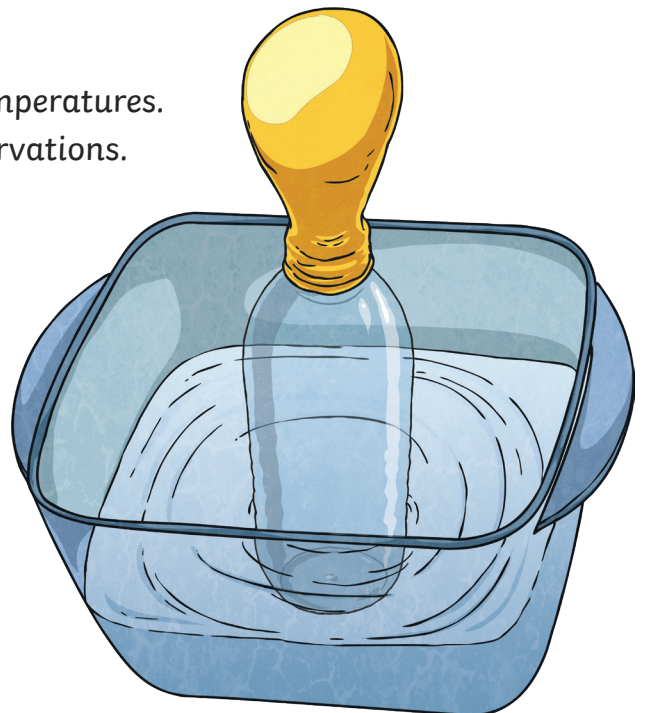


Steps:

1. Heat water to different temperatures (of your choice) using the kettle or microwave.
2. Place the water into tubs or sink.
3. Cover each of the openings of the plastic bottles with a balloon.
4. Place the bottle into the water at different temperatures. Time using a clock/stopwatch and make observations.

Modifications:

- Use different sized plastic bottles.
- Use different shaped balloons.
- Use plastic gloves instead of balloons.
- Use very cold water or ice.



Questions to Think About:

- Does air take up space?
- Did the balloon inflate because air takes up more space when it is heated?
- Will changing the temperature of the water affect how much the balloon inflates?
- Will changing the size of the balloon affect how much the balloon inflates?
- Will changing the shape of the balloon affect how much the balloon inflates?
- Does the amount of time the bottle is in the water affect how much the balloon inflates?

Explanation:

Think about how balloons can shrink if put in the freezer. Bottles of carbonated drinks can even explode in hot weather. The amount of space that gas takes up depends on its temperature.

