

Soap Sculptures

Science in the home!

'Kitchen Science' is a collection of activities that people can do at home, with everyday ingredients available from the supermarket or chemist. We want to show that science does not have to be done in a laboratory, by people in white coats. Instead, science is involved in all aspects of people's lives.

Create a work of soap art using science!

Follow this link to watch a demonstration: <https://youtu.be/z1hzatoE1tg>

You will need

- A bar of soap (make sure it's one that floats in water)
- A microwavable bowl
- Microwave

What do I need to do?

Make sure you ask an adult for help with the microwave.

1. Place the bar of soap in a bowl and put it in the centre of the microwave.
2. Cook the bar of soap on high for one and a half minutes. Keep watching it! The bar of soap will expand into puffy clouds. Make sure you don't overcook it.
3. Allow the soap to cool for at least one minute before you touch it.



The bar of soap should look puffy, but it should still feel the same as it did before you put it in the microwave. You can still take it in the bath!

What's happening?

Soap that floats on water has air pumped into it during the manufacturing process. This makes it less dense than water, so the soap floats. Air bubbles in the soap contain water. Microwaving the soap causes the water to heat up. The heat causes the air bubbles to expand and makes the soap sculpture grow. This is Charles' Law. Charles said that as the temperature of a gas increases, so does its volume.

If you use a bar of soap that doesn't float on water, it won't have as many air bubbles in it. These bars of soap will heat up and melt in the microwave! Very messy.