

SCIENCE  
CHALLENGE

20

# IVORY SOAP



THE  
JAMES  
DYSON  
FOUNDATION

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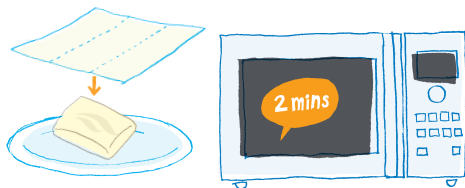
Designed by Lydia,  
Global head of the  
James Dyson Foundation

## The brief

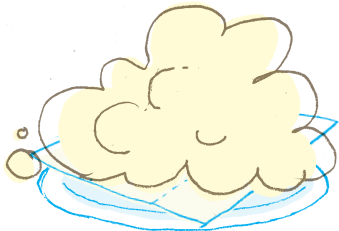
Create a big soapy marshmallow out of Ivory soap®.

## The method

1. Place the bar of soap in the middle of a plate covered with a paper towel and place in the centre of the microwave oven.
2. Cook the bar of soap on high for two minutes.

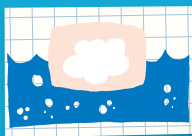


3. Watch the bar of soap as it begins to expand and erupt into puffy clouds. Be careful not to overcook it.
4. Allow the soap to cool for a minute. Touch it. Feel it. Look at it.



## Materials

- Ivory soap®
- Paper towels
- A microwave (with adult supervision)
- A plate



## How does it work?

Ivory soap® floats because it has air pumped into it during manufacturing. When the air inside the soap heats up, the air expands and reacts with the water inside. The expanding gases push on the softened soap, creating foam. This effect is a demonstration of Charles' Law. Charles' Law states that as the temperature of a gas increases, so does its volume.