



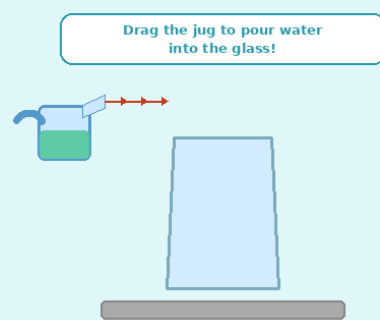
Floating Water

Learning about vacuum seals and air pressure

By Sandra Beale | Toddler and Early Years STEM

■ What you need

- Drinking glass (one per child)
- Water
- Food colouring
- Scissors
- Cardboard (thick)
- Trays
- Paper towels



■ [Try the interactive game online](#)

■ What to do

1. Gather the children and explain that you are going to make water float in an upside-down glass.
2. Fill a drinking glass halfway with water and squirt in a few drops of food colouring.
3. Cut a square of cardboard and put it over the glass.
4. Press down firmly with the palm of your hand and turn the glass upside down.
5. Slowly remove your hand from the cardboard. The water in the glass will appear to be floating.
6. Explain that pressing your palm on the cardboard creates a vacuum seal, keeping the liquid in.
7. Let each child have a turn. Have plenty of paper towels and a tray in case of spillages.

■ Top Tip

A smooth piece of cardboard will create a good seal. It needs to be dry, not damp.

■ The Science

This activity shows children how a vacuum seal can be created with a glass half-full of water. Air pressure pushing up on the cardboard is greater than the weight of the water pulling down — so the water stays in and appears to float!

What's in it for the children?

Children will be amazed by science in action and will want to ask lots of questions, developing their communication skills and scientific vocabulary.

■ Taking it further

- Let the children experiment with different liquids such as soapy water, oil or vinegar.
- Ask the children to predict what they think might happen with each one.

Key Words

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|---------------|----------------|
| • Vacuum | • Air pressure |
| • Seal | • Float |
| • Upside down | • Cardboard |