



WALKING WATER

You will need:

- 3 glasses
- Blue food colouring
- 2 sheets of kitchen roll
- Yellow food colouring



Can you guess what the colour of the water will be in the middle glass?

What you do:

1. Fill two glasses with water. Add some blue food colouring to one and some yellow food colouring to the other.
2. Place the two glasses of coloured water either side of the empty glass.
3. Fold a sheet of kitchen roll lengthways until it fits into the glass. Now place one end of the kitchen roll into the blue water and the other end into the empty glass. Do the same with the other piece of kitchen roll and the glass of yellow water.

You should find:

The water will start 'walking' up the kitchen roll and over into the middle glass. After a couple of hours, the middle glass should have a mix of the two colours of water in it. This is because the water travels through tiny gaps between the kitchen roll's fibres. This is called **capillary action**. Plants use capillary action to help them move water from the ground up through their stems.



UPSIDE-DOWN GLASS EXPERIMENT

You will need:

- A glass
- Water
- A thick sheet of paper or card that is bigger than the mouth of the glass.

What you do:

1. Fill the glass with water right to the top.
2. Place the paper on top of the glass.
3. Place your hand on the paper, then quickly flip the glass over (it's best to do this over a sink in case it spills).
4. Remove your hand from the bottom of the glass.

You should find:

The paper stays in place and the water doesn't spill out! This is because of air pressure and surface tension. Although you aren't aware of it, the air around us pushes in all directions. Look closely and you'll see a pocket of air trapped in the glass above the water. When you turned the glass upside down, a few drops of water escaped, increasing the space taken up by the trapped air and lowering its pressure. This means that the air pressure inside the glass is lower than the air pressure pushing up from outside, which stops the water's weight from pushing the paper down. At the same time, the 'sticky' water molecules are attracted to the paper, keeping the paper in place. This is called **adhesion**.

