

Learning objectives

- ✔ Observe how water can move through paper
- ✔ Investigate the way water is transported in plants

How does water get from the roots to the leaves?

First, watch this video:

<https://www.bbc.co.uk/teach/class-clips-video/science-ks1-ks2-ivys-plant-workshop-how-does-water-get-from-the-roots-to-the-leaves/zdtfjhy>

Activity 1

- 1** Use food colouring to make coloured water (blue and yellow).
- 2** Pour the same amount of coloured water into 2 clear containers.
- 3** Place the 2 containers of coloured water either side of an empty container.
- 4** Fold a sheet of kitchen paper into a thin strip. Make 2 of these.
- 5** Fold each strip in half, lengthways. These will be the 'ladders' for the coloured water.
- 6** Place one end of a strip in the blue colour and the other end in the empty container.
- 7** Do the same in the yellow coloured water.
- 8** Predict and then observe what happens.

Equipment needed

- Clear containers
- Water
- Food colouring
- Kitchen paper



Essential background information

The movement of water in plants is driven by a process called transpiration. This is where water evaporating from the leaves of a plant causes the plant to draw up more water from the roots. Water moves up the stem by capillary action - this is where water molecules seemingly 'stick' together.

Activity 2

Drop a folded paper flower into water. Observe what happens. The flower should open as water moves through the fibres of the paper (capillary action).

1. Place a white carnation flower in a clear container of coloured water (use water-based food colouring). Observe what happens. You could do this with a series of photographs.
2. Try the same activity with leafy celery stalks.

Challenge

Using cut leafy stems and recycled small water bottles, can you devise an experiment to measure how much water is taken up by the stem, in an agreed time period? What method will you choose to conduct this scientific enquiry? What success indicators will you be looking for? How will you measure and record your results?

Resources

Stems of white carnation flowers, celery stalks (with leaves), cut leafy stems
Water based food colouring
Clear plastic containers
Paper flowers (Capillary Flowers)
Camera