

Activity: Plants to Dye For

On SCOPE's Plants episode, you saw Julia change the colour of some flowers and celery. Here's how she did it:



What you need:

Cups of water
Food dye
Scissors
White flowers (daisies and carnations work well)
Celery

What to do:

1. Add about 20 drops of food dye to each cup of water- blue dye and red dye work well.
2. Make a fresh cut at the bottom of each flower and celery stem, and then place the plants into the cups of water.
3. Overnight, the dye will slowly move up the stem and turn your white flowers into colourful ones!
4. To check out how it all happened, cut the stems open and follow the line of colour from the stem to the petals!

What's happening?

This experiment is all about the xylem, which is a vein like structure in the plant that circulates water. When it rains, water is drawn into the roots and transported to the leaves and petals by the xylem. How does it do that? Well, it's all thanks to cohesion and transpiration. Water evaporates from the top of the plant – that is transpiration, and water is attracted to more water- that is cohesion. So, as water evaporates from the top of the plant, it draws up more water to fill the space. It's a bit like sucking on a straw. The more water you drink the more that is sucked into the straw, but in this case the water doesn't get sucked into the xylem, it is drawn in because of the evaporation. Anyway, back to our experiment! First we cut the stems and this helped the xylem draw up more coloured water. Once the coloured water reached the petals, the flowers became colourful!