

White flowers made colorful

I'd love a bunch of colorful spring flowers, but all I could find were white ones. So, I'm going to try to dye them.

What you'll need?

- white flowers
- a few small glasses, vases or bottles
- water
- food coloring
- knife
- chopping board
- other water-soluble colors, e.g. ink

Instructions

- Pour some water into the vases.
- Put plenty of food coloring in the water (e.g. blue, red, green and yellow)
- Stir or shake them well and put in the freshly cut flowers.
- Now watch what happens.
- After a few days, when the flowers have withered, cut the stems open lengthways and look for differences in the colors inside the stems. Please get someone to help you with this part.

What happens and how does it work?

- With the food colorings used in our experiment, the flower in the blue water starts to change color after just a few hours.
- By the next day, it has turned really blue.
- The rose in the green water has also changed color slightly, but nowhere near as much.
- The red and yellow food colorings have no effect.
- We have also experimented with acrylic paint. But this doesn't change the flowers at all. In fact, they start to wilt after just one day. So I don't think I'd bother trying that again.
- Blue ink also works and has dyed the flowers.





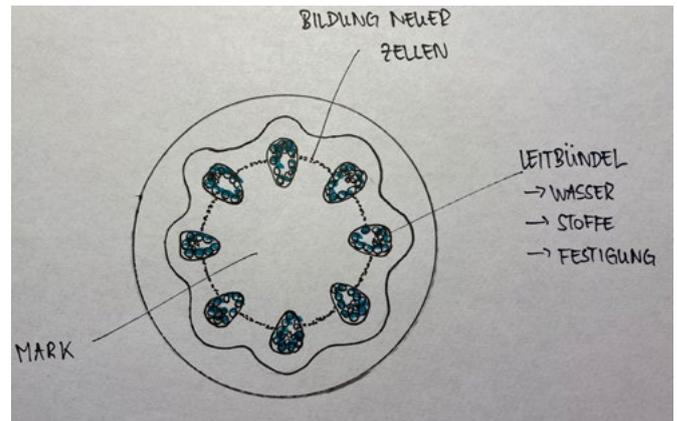
University
of Basel

Swiss Nanoscience Institute



What happens and how does it work?

- The flowers have little tubes inside their stems, known as vascular tissue, that are responsible for transporting water, among other things. They are also important for transporting nutrients and strengthening the stem.
- When dyes are dissolved in the water, they go up into the vascular tissue along with the water.
- In our experiment, the blue color particles made it all the way to the flower, via the vascular tissue, and changed its color.
- However, the red color particles didn't make it to the flower at all. This might be because the color particles are different sizes or stick differently. It may also have something to do with the concentration of our food coloring.



This diagram shows a cross-section of a young stem (source: Duden Learnattack GmbH). Water is transported through the vascular tissue.



Keep on exploring!



You could investigate whether a high concentration of food coloring changes the result. Or cut the stems really short so that the color particles don't have to travel so far. Maybe it'll work better with white tulips than with roses. Have fun!