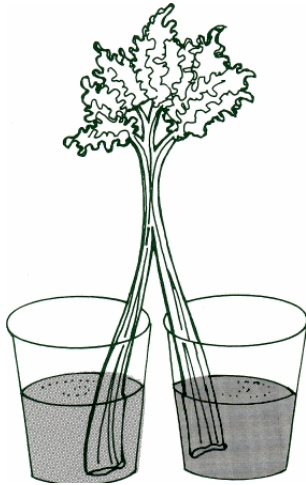


# Digging Deeper<sup>1</sup>

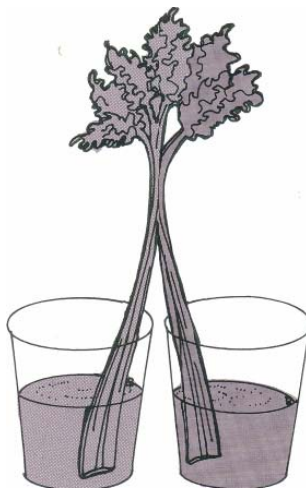
The following demonstration will show how water is transported through plant stems.



You will need the following materials:

- ✓ measuring cup
- ✓ 2 glasses
- ✓ 1 stalk of celery
- ✓ red and blue food coloring

- ▶ Cut the celery stalk in half lengthwise from the bottom to about half way up the stalk.
- ▶ Pour about half a cup of water into each glass.
- ▶ Add enough food coloring to make the water in each glass a deep color, one will be red and the other blue.
- ▶ Place one end of the stalk in the red water and the other in the blue.
- ▶ Leave the celery standing in the water for 48 hours.



**Results:** The celery will change color. One side will be red and the other blue. This is because of tiny tubes called xylem that run up the celery stalk to the leaves. The colored water moves through the xylem allowing the color to be distributed to the cells in the leaves causing their color to change. Minerals in the soil are carried to plant cells in this way, providing nutrients to the flowers and leaves. The minerals dissolve in the water as did the red and blue coloring. The solution is carried up to the leaves and flowers where the dissolved material is left as was the red and blue dye.

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<sup>1</sup> 4-H Aquatic Science Aquatic Plants Unit Three Member's Manual pg 10 © Ohio State university, 1991