

Colorful Celery

Materials:

5 stalks of celery
Water
Food coloring
5 clear glasses

Vegetable peeler
An adult

Procedure:

Experiment #1

1. Put one stalk of celery into a glass of water with several drops of food coloring. Allow it to sit until water has moved all the way up the stem (approximately 15-20 minutes).
2. With help from an adult, use a vegetable peeler to shave away the outer surface of the celery. Where is the majority of the food coloring located?

Experiment #2

1. Repeat step #1 from Experiment #1; this time use two stalks of celery – one should be quite leafy and the other should have no leaves. Which stalk does the water reach the top of first?

Experiment #3

1. Repeat step #1 from Experiment #1; this time use two stalks of leafy celery; place each stalk in a separate glass.
2. Put one glass in a window with lots of sunlight and place the other glass in a dark area, like a closet.
3. Allow these stalks to sit for 20-30 minutes before making observations. Which stalk allowed the water to travel more quickly? How does your observation support the theory that the speed that water travels in plants is a result of how quickly water evaporates from the leaves?

You may eat your celery experiments when you are finished – they are delicious with a tablespoon of peanut butter or cream cheese!

The Science:

One of the most important jobs of a plant's stem is to carry water from the roots to the leaves. The long strands inside the stem that transport the water are called xylem. Xylem is made of hollow cells that create a "pipeline" from the roots to the leaves. The movement of water is accelerated during evaporation, especially in extreme cases such as a drought. When the leaves begin to dry out, the xylem must work overtime in order to keep the plant hydrated. To see this in action, use a hairdryer to warm up the leaves on a fresh celery stalk.

Try this color changing experiment with other vegetables such as white radishes, scallions and carrots!

Eat It Up!
Presented by:

 **PROMEDICA**



imagination
STATION
imaginationstationtoledo.org