

Thirsty Stems



Plants are all around us! They are very important to both animals and people. Every part of the plant plays an important role and the stem is no exception.

The purpose of a plant's stem is to support and hold it upright. It also houses the plants plumbing, so that the proper amounts of water and nutrients can get where they need to be.

Without enough water and the right minerals and vitamins, the plant would die and we would not have the beautiful flowers or fruits and vegetables produced by plants.

When you spill something, what do you use to wipe it up? Do you use a paper towel? Well the paper towel is soaking up all that spilled drink through **CAPILLARY ACTION!**



Plants soak up water through **CAPILLARY ACTION**. Capillary Action causes water to move against gravity as dry plant tissues pull the water from areas with water. Inside every stem there are many super tiny, straw-like tubes called Xylem. The **xylem** acts like a paper towel. The water gets soaked up from the ground through these tubes and is transported all throughout the plant.



Experimenting with Celery Stems

Materials:

- 2 five-inch stalks of celery
- 3 tablespoons of salt
- 3 tablespoons of sugar
- 2 plastic cups
- water
- paper towel



Directions:

1. Mix 3 tablespoons of salt into 1 cup of water. Stir until dissolved. Pour into first plastic cup.
2. Mix 3 tablespoons of sugar into 1 cup of water. Stir until dissolved. Pour into second plastic cup.
3. Place one celery stalk into the saltwater solution, and the other into the sugar water solution.
4. Place the cups of celery and water in the refrigerator overnight.
5. In the morning, take the celery out of the water and place on a paper towel.
6. After one hour, taste the two celery stalks. Can you tell which one was in saltwater and which one was in sugar water?

How Does It Work?

The water moves up the stem in celery through a vascular system called the **xylem**. It carries the salt and sugar with it, in the same way stems carry water and nutrients.



Career Corner

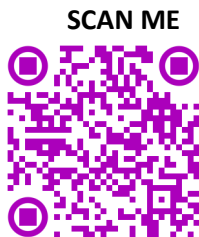
Biological Engineers- Biological Engineers use Mother Nature as a tool in recreating useful tools that enhance everyday life. Bio-Engineers work to better the natural world through renewable resources and proper management of the environment.

How Biological Engineers Benefit Agriculture:

- They help manage agricultural run-off
- Design tractors and harvesters

Biological Engineers Study:

- Biology
- Physics

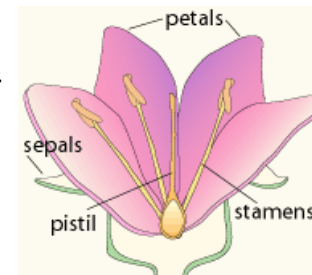


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Plant Facts

- Photosynthesis can occur in the stem of some plants such as: cacti, celery, asparagus, and bananas.
- Plants provide people with food, clothing, shelter, oxygen, and medicine.



- Most flowers have four main parts: petals, stamen, pistil, and sepals

Farm Facts

- During the 1600s, Tulips were so valuable that their bulbs were worth more than gold.



- There are over 15,000 species of roses cultivated across the world.



- Broccoli is a flower as well as a vegetable.

- Strawberries are the only fruit with seeds on the outside.



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