

Celery Stem Dissection

Stems give plants their structure (like our skeletons), and move water, nutrients, and energy between the roots and leaves in tiny tubes (like our blood vessels). In this activity, you'll get to see those tiny tubes in action!

Things You'll Need

- Celery stalks (limp ones are great!)
- Food coloring (red or blue is best)
- A glass or jar
- Sharp knife
- Cutting board

Dye the Celery

Water and nutrients move from the roots of a plant up to its leaves, flowers, and fruit through tiny tubes called **xylem** (pronounced "zai-lum").

A stalk of celery is really the stem of the celery plant. Celery's xylem are very big and easy to see, which make them great for dissecting. To make them even easier to see, we're going to dye them first!

- In a tall glass or jar, put a few drops of food coloring and add water (about 1/2 cup is plenty)
- Cut 2 cm or more off the bottom of your celery stalk. (Have an adult help!) This exposes healthy xylem that can absorb the dye.
- Place your celery in the glass, and leave for at least an hour, or up to 24 hours.
- Observe your celery every hour or so. What changes do you see?

While you're waiting for your celery to drink up the dye, check out this video about **capillary action**, which is how water moves up a stem.

[Walking Water Kitchen Table Science video](#)
by Lucinda the Librarian

Suggested Grades

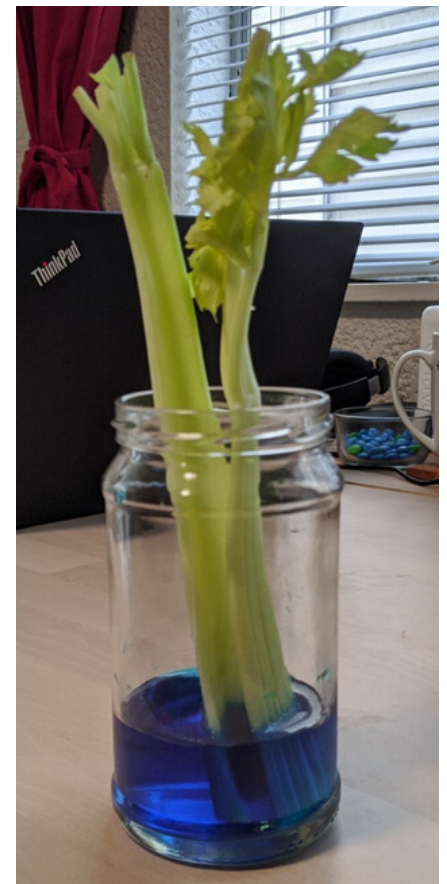
Grades 1-5

Time

30 minutes active; 1-24 hours passive

Subjects

Science



Celery Stem Dissection

Observe the Celery

Check on your celery every so often while it's dying. If your celery has leaves, you can see them change colors. If you don't have leaves, look for the color change at the tip of the stem, or even along the stem.

Keep a record of your observations! You can take photos or draw pictures, and write down the times of each observation.



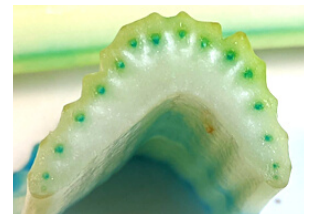
After about an hour and a half, you can just see the color in the leaves



After 24 hours, the leaves are very blue, and so are the cut ends!

Dissect the Celery

1 Take your celery out of the water and place it on a cutting board that you don't mind getting dye on.



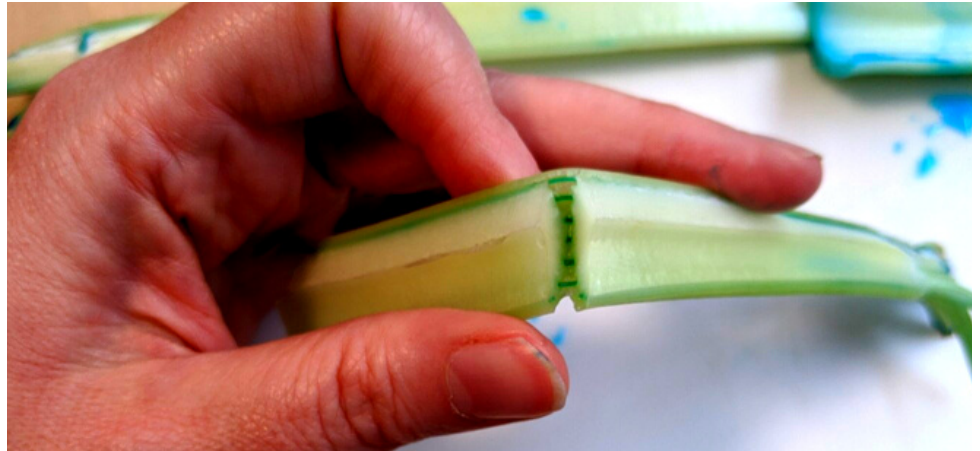
2. Using a sharp knife (with an adult's assistance if needed!) Make a cross section (cut across the short way) about 5-7 cm up from the bottom of your celery stalk. What do you notice? Draw a picture of what you see!



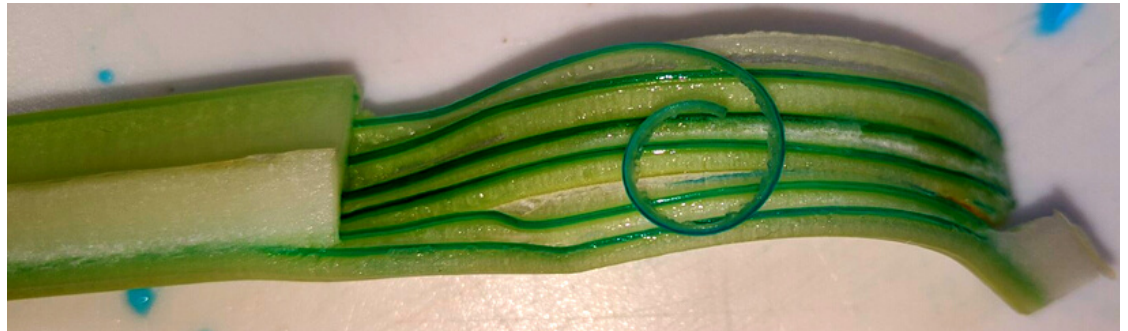
3. Cut the top part of the stem lengthwise. Can you see the xylem running up it? Draw a picture of this, too!

Celery Stem Dissection

Dissect the Celery, continued



4. Take one of the long pieces, and gently bend it backward on itself until the center snaps, but the zylem are still whole.



5. Pull one side down gently to peel the zylem off (kind of like peeling string cheese) What do you observe about the zylem?

Record your Observations!