

**Project FOCUS
Best Lessons
FIFTH GRADE**

Title of Lesson: Plant Classification: Looking at vascular tissue

Theme: Life Science

Unit Number: 2 **Unit Title:** Classification- Vert. and Invert.

Performance Standard(s) Covered (enter codes):

S5L1b

Enduring Standards (objectives of activity):

Habits of Mind

- Asks questions
- Uses numbers to quantify
- Works in a group
- Uses tools to measure and view
- Looks at how parts of things are needed
- Describes and compares using physical attributes
- Observes using senses
- Draws and describes observations

Content (key terms and topics covered):

Students will observe water uptake in a plant by vascular tissue and understand the concept of a xylem.

Learning Activity (Description in Steps)

Abstract (limit 100 characters): Observing the function of a xylem in celery.

Details: 1) Review plant classification: Vascular plants versus nonvascular plants and xylem versus phloem.

2) Put the students in small groups and hand out celery sticks, food coloring, and plastic cups filled half way with water.

3) Instruct the students to drop the food coloring into the water until the water changes color.

4) Go around to each group and cut the bottom of the celery stalk.

5) Let the celery sit for an hour (or longer if possible).

6) Cut half way up the celery stalk to be able to observe the colored tissue from the water being pulled up to the top of the celery.

Questions to ask:

1) Set up a control for comparison.

2) What kind of tissue is the tissue colored by food dye? (Xylem, because the celery is pulling the water from the bottom up.)

Materials Needed (Type and Quantity):

- 1) Plastic cups
- 2) Celery stalks
- 3) Food coloring
- 4) Scissors
- 5) Paper towel

Notes and Tips (suggested changes, alternative methods, cautions):

- Bring lots of paper towels,because the food coloring can get messy. Make sure to tell the kids the dye can stain their skin and clothes.
- This experiment works faster if you cut the bottom of the celery stalk while sitting in water, so the vascular tissue will open up.
- The experiment works best if you can leave the celery in the water overnight, but if you only have an hour use smaller pieces of celery.

Sources/References:

- 1)
- 2)
- 3)