

Maddy Krentz

Classification

Grade 5

Viewing Vascular Tissue

**Objective/Purpose:** The purpose of this activity is to introduce the students to the difference between vascular and non-vascular tissue and why we use these traits to classify the plant kingdom.

**QCC Standards:**

- S5L3, S5CS7

**Materials/Time Required:**

- Celery (enough for as many groups you want to do it)
- Cups (same number)
- Water
- Food Coloring
- Sharp knife (TEACHER ONLY, but the sharper the knife, the better the result because the cut it cleaner)
- Paper towels, just in case

**Background Information:**

Celery has very prominent vascular tissue and it can be manipulated to wick up food coloring along with the water which will enable them to distinguish between the vascular tissue and the rest of the plant (If done correctly, you can see the sides of the vascular tissue, xylem and phloem). Start by reminding the class what classification is and why we classify things; this helps remind them why we're doing all of this. Then explain the differences between vascular and non-vascular plants.

**Preparation:**

I suggest dehydrating the celery first, makes them wick up the water so much faster. Give the kids everything they need except the celery (use the knife away from them: I found my kids were far more interested in the knife than in anything else). Cut the celery at the bottom and make a cut at the top to allow the moisture to flow upwards.

**Safety:**

There's not much safety information. Just be super conscious about the knife and no eating the celery or drinking the water.

**Procedure:**

Dye the water whatever color you chose, but I suggest something that contrasts the green in the celery. Since all the cuts were made in the celery before giving it to the kids, then all you have to do is wait for the plant to start drinking in the moisture. Waiting is a great time to talk about the different

vascular tissues and their purpose in the plant, and what wicking in the moisture means (comes from the roots, distributed upwards by xylem. Phloem takes food from photosynthesis and takes it down to be used or stored like in a potato). In time, the color will move up the vascular tissue and you can reiterate the things you talked about earlier.

**Possible Questions:**

- How is your celery different from one that hasn't been treated with food coloring?
- What part of the vascular tissue turned colors?
- How are plants sorted into groups? Explain your answers.

**Assessment/Evaluation:**

The kids really enjoyed this experiment because they like anything that isn't book work. I used fresh celery, but I learned that I should have dehydrated it in the sun to starve the plant of moisture. That way, it takes in the water faster. Overall this is a great experiment to do in conjunction with a lecture/discussion because there is a lot of downtime.