



Lesson: Parts of the plant

Name:

Teacher:

Date:

Celery Water Transport Experiment Guide

Experiment Guide

NGSS Benchmark: SC.3.L.14.1 – Describe structures in plants and their roles in food production, support, water and nutrient transport, and reproduction.

Objective

To observe how water travels through the stem of a plant and identify the stem's function in transporting water and nutrients.

Materials

- Fresh celery stalks with leaves
- Clear plastic or glass cups
- Water
- Food coloring (any color)
- Marker
- Observation sheet

Procedure

1. Fill each clear cup halfway with water.
2. Add 5–10 drops of food coloring and mix gently.
3. Place a celery stalk upright into the colored water.
4. Mark the starting water level on the cup.
5. Leave the celery to sit for several hours (or overnight).
6. Observe any color changes that move up the celery stalk.
7. Record observations and sketch what you see.

Concept of the Activity

This investigation demonstrates **water transport through the xylem**, the tube-like structures inside plant stems. As celery draws water upward through capillary action, the food coloring moves with the water,



revealing the path water takes inside the stem.
Students learn:

- Stems transport water and nutrients.
- Plants rely on internal structures for survival.
- Water movement can be observed visually through simple experiments.

Observation Guide

1. What do you predict will happen to the celery once it is placed in colored water?

2. After observing the celery, what changes did you notice?

3. What does this experiment show about the function of the plant's stem?

4. Why is water transport important for plant survival?

Safety Guidelines

- Handle food coloring carefully to avoid stains.
- Do not taste or eat any materials used in the experiment.
- Wash hands after completing the activity.



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Accommodations

- **ELL:** Provide diagram labels in native language + English.
- **ESE/504:** Allow extra time for observations; offer a printed step-by-step checklist; pair students strategically.