

**Lesson Plan Prepared By:** Amanda Dennis

**Lesson:** Function of a Stem

**Length:** 40 minutes

**Age or Grade Intended:** 4<sup>th</sup> grade

**Source:** *Activities for Teaching Science as Inquiry*

**Academic Standards:**

4.2.5 Write descriptions of investigations, using observations and other evidence as support for explanations.

4.6.1 Demonstrate that in an object consisting of many parts, the parts usually influence or interact with one another.

**Behavioral/Performance Objective:**

After an experiment on the function of a stem, students will write a description of their investigations explaining how the stem interacts with the rest of the plant.

**Assessment:**

The teacher will assess students written descriptions on the function of a stem.

**Advanced Preparation by Teacher:**

Materials Needed:

- Carnations
- Geranium or celery stem
- Red and Blue food coloring
- Drinking glass or clear plastic cup
- Paper towel

Place stem of a white carnation in a cup containing water with blue food coloring; leave the carnation in the water until it has turned blue.

Teacher should also let celery stem soak in colored water, and then take the stem out and place in sun for two hours before beginning project.

**Introduction/Motivation:**

Boys and girls, can you tell me why this carnation is blue? Do you think that the seed was blue, or maybe it had something to do with this blue water? Lets find out!

**Step-by-Step Procedure:**

- Give each table cluster a cup with water, food coloring, and a rolled up paper towel.
- Have students add coloring to water. Then place the rolled up paper towel in the water. Observe what happens. (Bodily Kinesthetic and Interpersonal Intelligence)
- Ask students what they see happening, why do they think it is happening (Bloom's Analysis). Could this work with plants too?
- Show students example of celery stem. What happened to the celery stem (Bloom's Comprehension)? What parts of the stem contain the colored water? What can you determine about the function of the stem (Bloom's Application)?

**Closure:**

What do you think might happen if we split a stem of a carnation and put one part of the stem in blue water, and the other in red water (Bloom's Application)? Let's try it and see. Now I want you to take out a piece of paper and write a description of the function of a stem, considering what we have seen today.

**Accommodations/Enrichments:**

The teacher could allow students to use a computer to type a description.

Enrichments: Have students investigate what colored water does to other types of plants.

**Reflection:**

Did students understand the concept?

Can students explain the function of a stem?