

# Sweet & Salty:

## The Experiment of Celery and How it is Affected by Minerals By Regan & Saanvi

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### 🌟 Purpose of the experiment 🌟

Purpose: To find differences between celery in sugar water and celery in saltwater.

### 🌱 Background information 🌱

- ❑ **Dicot:** A classification for plants. One of the characteristics of dicots are their vascular bundles being on the outside of plants. Celery is a dicot as you can see in the picture below.
- ❑ **Flaccid:** Soft, bendy, flexible, and easily breakable
- ❑ **Turgid:** Swollen, hard, most of the time if plants are turgid they are bent but not bendy, and plants being turgid means that they are not easily breakable
- ❑ **Transpiration:** The process of evaporation through plants
- ❑ **Osmosis:** The flow of water.
- ❑ **Diffusion:** the movement of spreading like when you spray perfume and it spreads around the room
  - ❑ The effects of salt water to celery: It makes it flaccid and weak. “As the pressure of the **water** in the cells increases, the crispness of the **celery** increases.”

### 🔬 Our Hypotheses 🔬

Saanvi; The sugar water would not affect the celery, the control would stay the same, and lastly the celery in saltwater would become flaccid, which it did. The reasons why Saanvi thought this would happen is because, the sugar didn't seem like something that would affect celery. The saltwater and the control were types of waters which Saanvi had already known the results of, since we did a previous experiment

Regan; thought the salty celery will affect the flaccidness, where as the control and sugar will not affect the celery. Why Regan thought this is because we have done an experiment in the past with salt water and celery and it became flaccid. We also had a control in that one so that explains why Regan think that. For the sugar Regan believe that because the celery isn't used to sugar it will push it away.

### 🌻 Variables 🌻

INDEPENDENT VARIABLE: Type of water

DEPENDENT VARIABLE: Mass, width, and the length

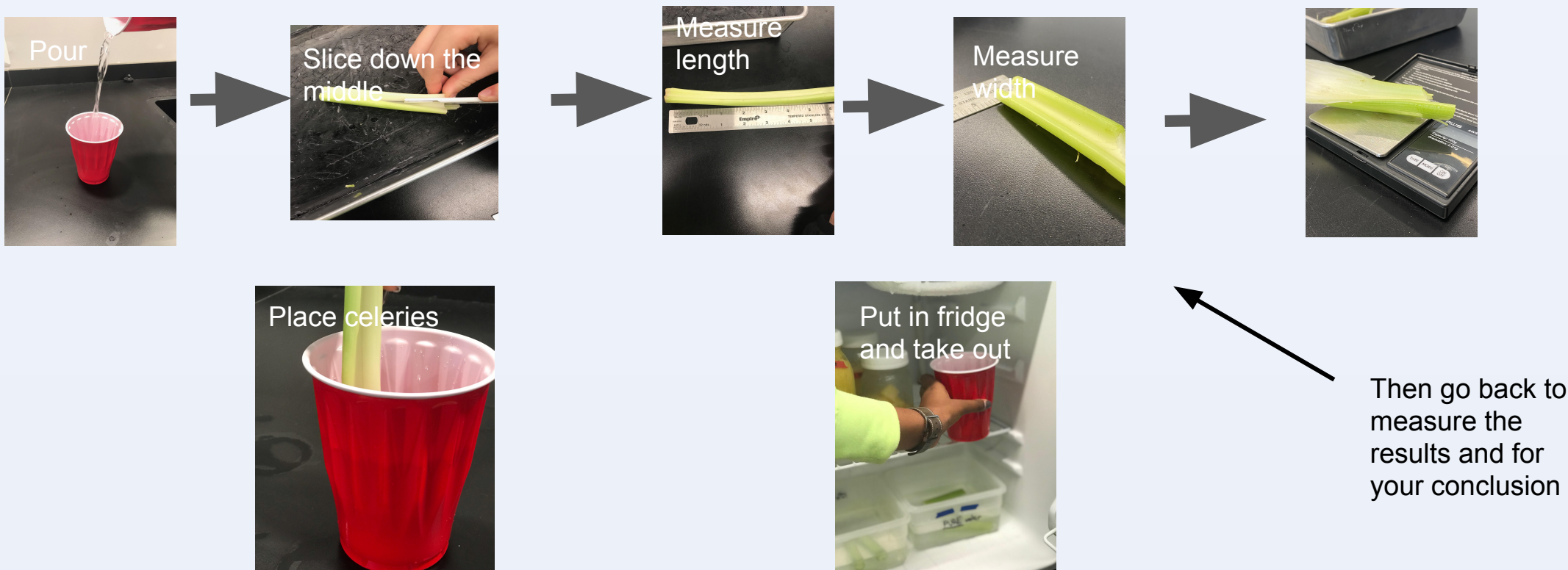
CONSTANT: The size of cup, amount of water, size of celery, width of celery

CONTROL: The celery in the pure water cup/beaker

### 🍷 Method 🍷

1. Prepare the liquids
  - a. Fill each cup with 300ML of water
  - b. Put 30g of sugar in one cup
  - c. Put 30g of salt in one cup
2. Take celery stalks and cut each to 10cm
  - a. Then cut in half
3. Take measurements
  - a. Measure the mass
  - b. Measure the width
  - c. Measure the length
4. Put each celery in each cup and take to the fridge
  - a. observe
  - b. Measurements

### 🌸 Visual Method/Steps 🌸



### 📊 Initial Recordings of the celery 📊

Saanvi's Experiment:		Salt	Sugar	Control
	Width	1cm	1cm	1cm
	Length	10cm	10cm	10cm
	Mass	7.15g	5.83g	6.62g

Regan's Experiment		Salt	Sugar	Control
	Width	10 cm	10cm	10 cm
	Length	1 cm	1cm	1cm
	Mass	7grams	3 grams	4 grams

### 📊 Concluding Recordings of the celery 📊

Saanvi's Experiment		Salt	Sugar	Control
	Width	1cm	1 ¼ cm	2 ½ cm
	Length	10cm	10cm	9 ½ cm
	Mass	7.08g	5g	7.10g

Regan's Experiment  
**FINAL DATA IS UNAVAILABLE**  
(My sister ate the experiment)

### 🔬 Results In Table 🌴

	Sugar	Salt	Control
Width	NO CHANGE	+ ¼ cm	+ 1 ½ cm
Length	NO CHANGE	NO CHANGE	- ½ cm
Mass	- 0.7 grams	- 0.83 grams	+ 0.48 grams

### 🌴 Results 🔬

Number of trials- 2

Saanvi's Results: There were not many changes between the results before and after, but some of the changes were the width of the sugar celery. Testing didn't increase or decrease in centimeters.

The salt celery testing increased by ¼ cm. Lastly the control celery testing increased by 1 ½ cm. Next, the length of the sugar celery testing didn't increase or decrease in centimeters. The length of the salt celery testing didn't increase or decrease in centimeters as well. Lastly, the control celery testing increased by ½ There were not many changes between the results before and the after. Some of the changes being, the mass of the sugar celery testing decreased by .7g. The salt celery testing decreasing by .83g. Lastly the control celery testing increased by .48g.

Regan's Results - FINAL DATA UNAVAILABLE

### 🍷 Conclusion/Analysis 🍷

**SALT:**The salt water affected the celery like how we predicted. The salt made the celery flacid and delicate. You could see salt sediments in the celery.

**SUGAR:**For the sugar celery, the sugar didn't affect the celery at all. In fact it didn't even go in the celerys system, it went outside and around the celery.

**CONTROL:** The control ended up like aged celery, the only difference was that it was bent.

### 🍷 Our Next Questions 🍷

- a. If the saltwater made the celery flaccid and the control made the celery bent but not bendy, how come the sugar didn't affect the celery?
- b. Would we get different results trying this experiment with different types of salt and sugar?
- c. If we tried this experiment on a different type of plant, would we get the same results?
  - d. If we use a different kind of salt, will we get a different result?
  - e. if we only put the xylem and phloem in the waters, will it affect the outcome?
- f. Could we leave the roots on the plants to change the outcome and if so what will it change or will it stay the same? result