

<https://rainydaymum.co.uk/celery-science-exploring-plants/>

Materials needed for the Plant Transpiration Experiment

Celery with leaves still on
Liquid Food Coloring
Water
Glass or glass Jar
Knife

Setting up the Celery Science experiment

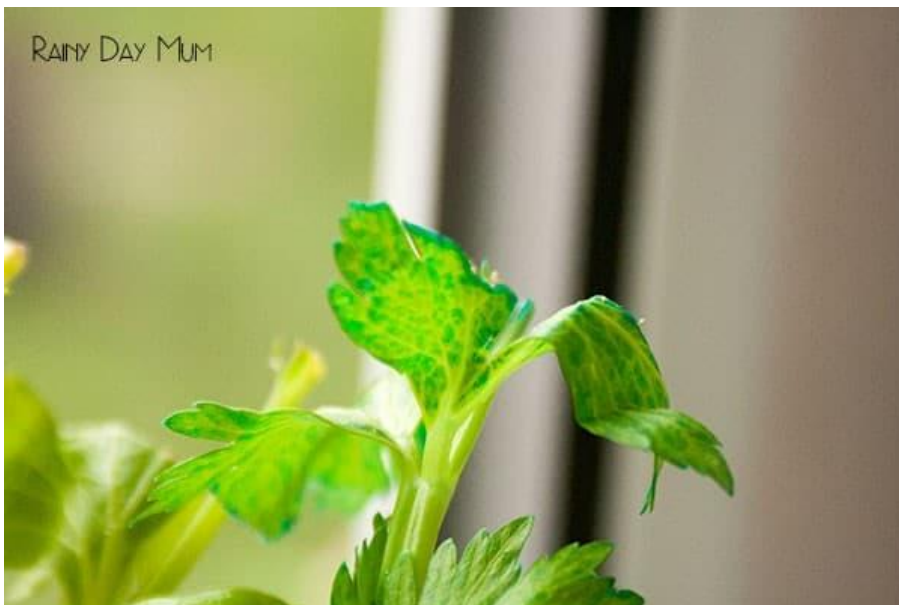


In a glass add water and add a few drops of food coloring.

The darker or richer the color, the better. We found that blue was the clearest and easiest to see. Mix well and add in the celery.



Leave in a window sill and watch the colors appear on the leaf.



After the color appears on the leaves, take the stem out of the water and cut across with a knife. You will be able to see the vessels clearly in the stem.



Transpiration Explained

Yes, this is a cool science experiment and the kids loved seeing the color appear in the leaves. But there is some real science behind it! The experiment shows a process in plants called transpiration.

Transpiration is the transportation of water through the plant. Nutrients that the plant needs are dissolved in the water and taken to the parts of the plant that need them from the roots. Because the food coloring has small particles they can be transported in the water as well and you can see the progress.

The leaves of the plants have small holes on them that are connected to the vessels in the plants. The holes allow water to evaporate out and that forms a suction pressure in the vessels drawing water up through the roots.

The holes on the leaf are called Stomata, the vessels that bring the water up through the stem the Xylem and the roots draw the water from the soil.