

Plant Parts and Functions Lab

Name: _____

Stomata Observation

Stomata are tiny pores that allow carbon dioxide gas and water vapor to pass into and out of plant leaves. Most stomata are on the underside of the leaf. Guard cells that look like jelly beans line the sides of the stomata. These guard cells regulate the opening and closing of the stomata. On hot days, guard cells close the stomata to keep the plant from losing water and wilting. When plants lose water through evaporation from the stomata, this process is called transpiration.

Procedure

1. Obtain two to three different types of leaves.
2. Paint a thick patch of clear nail polish on the underside of each leaf and allow it to dry.
3. Put clear tape over the nail polish once it is dry and carefully peel back the clear fingernail polish. Tape this fingernail polish impression of your leaf to a clean microscope slide. Label the type of leaf that you used to make the impression.
4. Examine your slide under a microscope and search for stomata. Always begin with your microscope in the lowest magnification, focus and move up to the next magnification level if needed.
5. Sketch the leaf impression with stomata on your worksheet. Make note of the concentration of stomata. Do this for all three leaves.

Leaf 1	Leaf 2	Leaf 3

Plant Parts and Functions Lab *(continued)*

1. Why are the chloroplasts green?

2. Were the chloroplasts moving or stationary in the cell? Why?

3. What is the function of the chloroplasts?

4. Would you find chloroplasts in an animal cell? Why or why not?

5. What does a plant need in order to perform photosynthesis?

6. What does a plant produce from photosynthesis?

7. Write the equation for photosynthesis.
