

Name: _____

Date: _____

Life Science

Period: _____

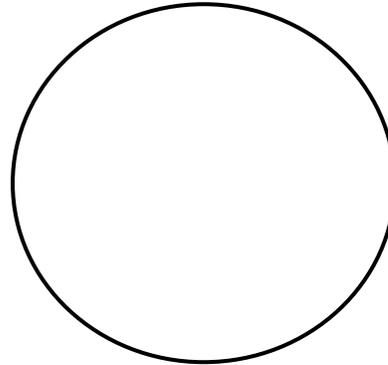
Plants - *Photosynthesis*

Station 1 **Stomata Under the Microscopes**

Take a look through the eyepiece of the microscope and view the stomata of the lettuce leaf.

- a) Draw what you see under the microscope (the stomata and surrounding cells) and label the following structures:

- **Stoma**
- **Guard cells**



- b) During what part of the day would you expect the stomata of a plant to be open? (*circle one*)

Daytime

Nighttime

- c) During what part of the day would you expect the stomata of a plant to be closed? (*circle one*)

Daytime

Nighttime

- d) What materials pass **into** the plant leaf through the stomata?

- e) What materials pass **out of** the plant leaf through the stomata?

- f) What would happen to a plant if the stomata were clogged?

Station 2 Diagramming Photosynthesis

Using the plain paper and color pencils at this station, draw a diagram that shows the transfer of energy and exchange of gases involved in photosynthesis. Use the diagram provided at the station to guide your diagram.

Arrows must show where the following materials come from/go: energy, water, carbon dioxide, oxygen, glucose

Station 3 Observing Transpiration

Plants absorb water from the earth. Water moves up from the roots to reach the leaves. Most of the water in the leaves, about 90%, is lost through the stomata. This water loss through the stomata is called **transpiration**. Large trees can lose as much as 14,900 lbs of water in 12 hours.

Observe the plant located at this station and answer the following questions:

a) In which part of the plant does transpiration occur? _____

b) How can you tell that the plant has lost water due to transpiration?

c) Obviously, if a plant runs out of water from the soil it will die. However, what exactly happens that causes the death of the plant? (*Think about what you are observing at this station*)
