

Name _____ Date _____ # _____

Study Guide for Photosynthesis (Quiz is Tuesday, October 31st)

- What do producers (plants) need for photosynthesis?
Water (H₂O), Carbon Dioxide (CO₂) from the air, and energy from Sunlight
- Photosynthesis is the name of the process in which producers (plants) make their own food. During photosynthesis the energy in sunlight is used to make food (carbohydrates in the form of glucose) from water and carbon dioxide.
- Photosynthesis takes place in the chloroplasts of plant cells.
- Glucose and oxygen are created in the chloroplasts.
 - ❖ Chloroplasts which are found in leaf cells contain chlorophyll.
 - ❖ Chlorophyll is where the energy from sunlight is absorbed or captured. This is where the process of photosynthesis begins.
 - ❖ Chlorophyll is what gives plants their green color.

Photosynthesis produces glucose and oxygen.

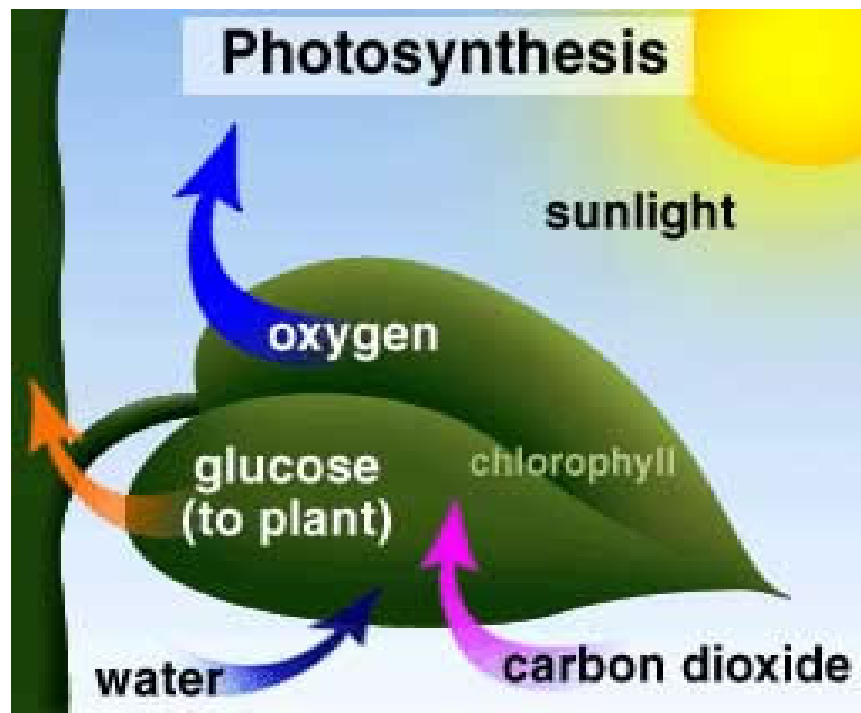
- ❖ Glucose is a sugar made by producers(plants).
- ❖ Glucose is a carbohydrate; Carbohydrates are made during photosynthesis from carbon dioxide and water (C₆H₁₂O₆). Glucose/Carbohydrates provide energy to living cells. Carbohydrate actually means "watered carbon".
- ❖ Glucose is the main source of nutrition for plants. Glucose fuels the plant's cells for function and growth.
- ❖ The oxygen created during photosynthesis is used for cell respiration or is a waste product.
- ❖ Cell respiration is the process of releasing energy from nutrients.
- ❖ The oxygen not needed becomes a waste product of photosynthesis.

Stomata is the Greek word for “mouth.” Their main function is to allow gasses such as carbon dioxide, water vapor and oxygen to move rapidly into and out of the leaf.

- Carbon dioxide that is needed enters through the stomata.
- The oxygen not needed is released through the stomata.
- Plants take in carbon dioxide and give off oxygen.
- Animals take in oxygen and give off carbon dioxide.

*Don't forget to use your notes from your Science notebook to study.

*Be familiar with this image:



*Make sure you are ready to explain or draw what happens during photosynthesis:

Photosynthesis takes place in the leaves of plants. Chlorophyll absorbs the sun's energy. This energy splits water molecules into hydrogen and oxygen. Oxygen is released from the leaves into the atmosphere. Hydrogen and carbon dioxide are used to form glucose or food for plants. (HINT: Think back to the Skittles lab we did in class).