

# Elodea Lab

## Photosynthesis/Respiration



Name: \_\_\_\_\_ Period: \_\_\_\_\_ Date: \_\_\_\_\_

Group Members: \_\_\_\_\_

### ∞ Background Concepts ∞

$C_6H_{12}O_6$  is glucose which is a sugar. Plants are **AUTOTROPHIC** meaning they can make their own food (glucose) from light energy.

$CO_2$  is Carbon Dioxide, the same chemical we breath out after using up oxygen  $O_2$  which is produced by autotrophic organisms like plants.

Plants can carry out both photosynthesis and respiration simultaneously. However light and the amount of  $CO_2$  available can alter these processes. During **photosynthesis**, plants are using the energy of the sun to build molecules which effectively store this energy (glucose). Chemically, the photosynthetic reaction looks like this:  $6CO_2 + 6H_2O + \text{light energy} \rightarrow C_6H_{12}O_6 + 6O_2$

During **respiration**, plants are using this stored energy (glucose), to fuel their metabolic processes. Chemically, the respiratory process looks like this:  $C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O + \text{energy}$

Remember that plants can carry out respiration all the time! Among other things, the converted energy from respiration is used to synthesize molecules, move materials around within the organism, grow (create new cells) and reproduce. Notice that in photosynthesis,  $CO_2$  (carbon dioxide) is **consumed**.