Notes: Cell Respiration

We already learned that plants make their own _____ during photosynthesis.

Plants take in _____ through the roots, up the stem, and out to the leaves.
The leaves also capture _____ and _____ _____.
These 3 things react to produce _____ and _____ gas.

Glucose is a _____ compound that provides _____ to the plant so that it can grow, develop and reproduce.

Cellular respiration is the process that breaks down _____ to make carbon dioxide, water, and a high energy compound called _____.

IMPORTANT NOTE: _____ and _____ run cellular respiration too! The cells in our bodies have the same structure as plant cells to do this. They are called _____.
Without these, our bodies would not be able to _____ _____ the food to provide it with energy to go about its daily activities.

Photosynthesis and Cell Respiration happen in one big _____!

Cell respiration is not the same thing as breathing, but they are closely related.
When you breathe in, you take in oxygen needed for your cells to run cell respiration. (_____)
When you breathe out, you get rid of carbon dioxide that is made during cell respiration. (_____)

If you breathe out onto a mirror or window, what other product of cell respiration will you see?
Yep, _____(in the form of water vapor!) It will collect in small drops on the glass or window.

Photosynthesis - happens in the _____ and only in _____.
Cell Respiration happens in _____ and _____ in a structure called the _____.

IMPORTANT NOTE:
The reactions of photosynthesis and respiration have an interesting relationship!
The reactants in photosynthesis are the _____ in cell respiration!
The _____ in cell respiration are the products in photosynthesis!

LIVEWORKSHEETS

SUMMARY:

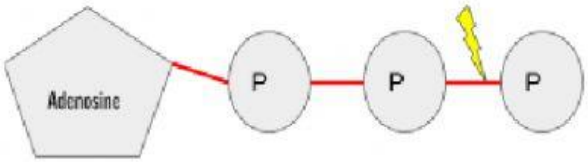
Photosynthesis - _____ cells only inside _____.

$$CO_2 + H_2O + \text{Sunlight} \rightarrow C_6H_{12}O_6 + O_2$$

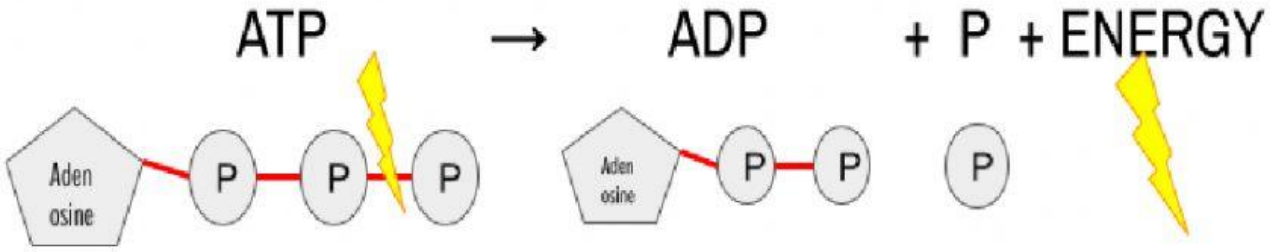
Cell respiration - _____ and _____ cells in _____.

$$C_6H_{12}O_6 + O_2 \rightarrow CO_2 + H_2O + ATP$$

_____ (Adenosine TriPhosphate)



The energy is _____ in the chemical bonds that hold the molecule together. When the molecule is broken down, the bonds break releasing _____!



The bond broken held one of the three phosphate groups on the adenosine. With only _____ phosphate groups, it is now called adenosine **Di**phosphate (_____)

Photosynthesis - Plant cells only inside chloroplasts

$$\boxed{CO_2 + H_2O} + \text{Sunlight} \rightarrow \boxed{C_6H_{12}O_6 + O_2}$$

Cell Respiration - Plant & Animal cells in mitochondria

$$\boxed{C_6H_{12}O_6 + O_2} \rightarrow \boxed{CO_2 + H_2O} + ATP$$

$$\downarrow$$

$$ATP \rightarrow ADP + P + \text{Energy}$$

LIVEWORKSHEETS