Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Period:\_\_\_\_\_\_\_\_\_\_\_\_\_Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - breaking bonds between atoms and forming new ones to make new compounds**
* **Reactant - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Product - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

 **In the equation, label the reactants and products:** C6H12O6 + 6O2  6CO2 + 6H2O + ATP

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |
| --- | --- | --- |
|  | **Photosynthesis** | **Cellular Respiration** |
| **Definition** |  | **Analogy: glucose is like a \_\_\_\_\_\_\_\_\_\_\_\_\_, ATP is like  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
| **Equation** |  |  |
| **Location** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Notice the stacks inside of the chloroplast. These stacks absorb sunlight. This arrangement increases the amount of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to absorb as much sunlight as possible. | http://penrules.com/_Media/art_mito_300.png\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Notice the highly folded inner membrane. These folds increase the amount of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ so lots of ATP can be made. |

Plants contain \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ some wavelengths of light and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ others. For example, if a plant appears red, the plant \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ this color. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is one of the most abundant pigments in a plant which absorbs the red and blue colors of the spectrum and reflects \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ which is what makes plants appear green. The light plants absorb is used to undergo \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.



**2 Types of Cellular Respiration**

|  |  |  |
| --- | --- | --- |
|  | **Aerobic Respiration** | **Anaerobic Respiration (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)** |
| **Definition** | Occurs with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Occurs without \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Equations** | **\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_ 🡪 \_\_\_\_\_\_\_ + \_\_\_\_\_\_\_ + \_\_\_\_ATP**Which reaction (aerobic or anaerobic) results in more energy, which would allow for more work to be done? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | **2 Types:****Alcoholic Fermentation** (occurs in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)– \_\_\_\_\_\_\_\_\_\_\_\_ 🡪\_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_ + \_\_\_\_ ATPThis process is used in baking bread and in brewing.What causes bread dough to rise? \_\_\_\_\_\_\_\_\_\_\_\_\_**Lactic Acid Fermentation** (occurs in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cells)\_\_\_\_\_\_\_\_\_\_\_\_ 🡪\_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_ + \_\_\_\_ ATPThis process occurs when exercising. If your muscles are depleted of oxygen they will switch to lactic acid fermenation. Lactic acid builds up in the muscles and creates that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ feeling.What reactant is missing from both of the equations above? \_\_\_\_\_\_\_\_\_\_\_ |

**
ATP/ADP Cycle**

Energy is stored in the bond between the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, when the bonds break energy is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to power chemical reactions, your cells and ultimately your body

The goal of cellular respiration is to take ADP and create ATP by adding on a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.