**Unit 5 Review**

1. During photosynthesis, plants take in CO2 and H2O to make glucose. In presence of sunlight and chlorophyll
2. Glucose is a simple sugar, a carbohydrate. ATP is instant energy available for cell’s use
3. There are two types of cellular respiration: Aerobic and Anaerobic
4. Aerobic respiration requires oxygen.
5. Anaerobic respiration does NOT require oxygen.
6. Aerobic respiration completely breaks down glucose (more efficient). Aerobic respiration produces 36 ATP molecules. Anaerobic respiration does not completely break down glucose (2 ATP molecules produced).
7. There are two types of anaerobic respiration:
   1. Alcoholic fermentation – performed by yeast (bread rises because of CO2)
   2. Lactic Acid fermentation – performed by animals and microbes (muscles are sore when we do anaerobic exercise and lactic acid builds up).
8. Photosynthesis reaction:

6CO2 +6H2O C6H12O6 + 6O2  **Occurs in the chloroplast and requires chlorophyll**

Cellular Respiration reaction:

C6H12O6 + 6O2 6CO2 + 6H2O **(36 ATP)** **Occurs in the mitochondria of plants & animals**

Alcoholic Fermentation Reaction:

C6H12O6 + yeast6CO2 + ethanol **(2 ATP)**

Lactic Acid Fermentation Reaction:

C6H12O6 + yeastlactic acid **(2 ATP)**

1. ATP is a nucleic acid made up of one adenosine molecule, one ribose molecule and three negatively charged phosphate groups. Energy is stored in the bonds between the phosphate groups and is released when the bond is broken.
2. ATP is instant energy for the cell to perform cellular activities (maintaining homeostasis, cell division, active transport, etc).
3. Photosynthesis occurs in the chloroplasts. Cellular respiration occurs in the mitochondria.
4. Chromatography is a procedure to remove pigments and separate them according to color.
5. Chlorophyll is the green pigment found in the chloroplast of plants.
6. The purpose of photosynthesis is to take energy from the sun to make glucose (oxygen is byproduct).
7. The purpose of cellular respiration is to break down glucose into ATP, which is energy for the cell.