**Cellular Energy Test (Photosynthesis, Cellular Respiration and ATP)**

**Photosynthesis:**

**You Should Be Able To:**

* Identify the differences between heterotrophs and autotrophs
* Describe the differences between chemosynthesis and photosynthesis and be able to identify which organisms utilize each process.
* Write both the word and chemical equations that represent the process of photosynthesis.
* Identify the parts of a chloroplast.
* Identify the different pigments that are used during photosynthesis and what colors they absorb and reflect.
* Describe why leaves change colors in the fall.
* Explain the two parts of photosynthesis – the light or photo reaction and the synthesis or Calvin Cycle. Know the reactants and products of both parts and where each part is located in the chloroplast.
* Explain the connection between the light reactions and the synthesis reactions in photosynthesis.
* Describe three factors that affect the rate of photosynthesis reactions.

**Cellular Respiration:**

**You Should Be Able To:**

* Write both the word and chemical equations that represent the process of cellular respiration.
* Write why photosynthesis and cellular respiration are considered to be biochemical pathways.
* Describe the difference between ATP and ADP. How do our cells make ATP from ADP? What is released when one of the phosphate bonds are broken in ATP and ADP is produced?
* Label the parts of a mitochondrion.
* Explain the process of glycolysis – what is it? What is produced? Where does the product go?
* Compare and contrast respiration (aerobic) and fermentation (anaerobic). What are the steps, the locations in the cells, and the amount of ATP energy produced?
* Describe the two types of fermentation: alcoholic and lactic acid. What types of cells go through each type of fermentation? What is produced? Where are these processes located?