Cell Review

**Osmosis and Diffusion**

Cells require energy for everything from functioning organelles to reproduction. In order to get this energy, cells require nutrients and materials to enter the cell to be used. These materials enter through the cell membrane with water through a process called **osmosis**. This is when water, or materials mixed with water, move from areas of high concentration to areas of low concentration like the inside of a cell.

**Photosynthesis**

In plants cells, food and energy is created through a process called **photosynthesis**. Photosynthesis takes place in the chloroplasts of a plant cell. Photosynthesis takes carbon dioxide (CO2) and Water (H2O) and using Light energy from the sun creates a natural sugar known as Glucose (C6H1206) and Oxygen (O2). Plants do not require oxygen, so this is left out of the plant through the leaves.

**Cellular Respiration**

Animal cells also require certain materials to create energy. One of the main materials is oxygen, which we get from plants after photosynthesis. Animal cells also require glucose, which they get by eating plants or other animals that ate plants. During Cellular Respiration, the Oxygen and Glucose is turned into Water, Carbon Dioxide, and Energy (ATP) used to regulate body temperature.

**Mitosis**

One of the primary functions of a cell is to reproduce and create new cells, this is done through **Mitosis**. This causes a cell to divide into 2 identical daughter cells. Mitosis has 4 phases:

Prophase – The nuclear membrane goes away and the DNA is copied into chromosomes

Metaphase- The chromosomes move to the middle of the cell

Anaphase – The Chromosomes are split apart and pulled to different sides of the cell

Telophase – A New nuclear membrane forms around both sets of identical chromosomes.