**1.2 – Comparing Plant and Animal Cells**

Cell – This is the basic unit that provides the necessary functions of life.

Classification – Living things can be divided by into plant or animal kingdom. Plants produce their own food while animals consume other living things in order to get the nutrients they need.

Difference between cells – The difference between plants and animals is reflected in their cell structures. Both their cells have certain common parts, which do the same job, but plants also have some unique parts, that allow them to transform the sun’s energy into food in the form of sugars.

Microscopes – When using a microscope all organelles may not be visible because some of them may be obscured by other organelles, or the cell may not have been prepared to show all of them.

Essential Organelles

* + Nucleus – It controls the activities of the cell, such as growth. (A large organelle that is easy to see under magnification.)
  + Cell Membrane – Cells possess this thin covering in order to keep the cytoplasm together. It acts as a security guard, only letting certain materials in or out.
  + Cell wall – Found in plant cells but not in animal cells. The rigid structure that surrounds the cell membrane. It provides the cell with strength and support. Materials pass in and out of the cell through pores in the cell wall.
  + Chloroplasts – Membrane-bound organelles that contain a green substance (pigment) called chlorophyll. In a process called *photosynthesis,* the chlorophyll uses the Sun’s energy to convert carbon dioxide and water into sugar (food) and oxygen. Chloroplasts are found in plant cells but not in animal cells.
  + Vacuole – A large sac-like organelle that stores excess food, waste, and other substances. Each vacuole is surrounded by a membrane.
  + Mitochondria – The powerhouses of the cell. These organelles break down food particles and release their stored energy. The cell uses this energy to fuel all of its activities. Mitochondria are surrounded by a membrane.
  + Cytoplasm – All plant and animal cells contain this jelly-like material in which parts of a cell float.
* Organelles – Plant and animal cell structures. Tiny parts within the cell that have special functions that help the cell survive, grow and reproduce. Most organelles are contained inside a membrane of their own. Organelle membranes keep different parts of cell separate from one another. These float in the cytoplasm.
* Micrographs – Photographs taken with a microscope.
* Cells under the Microscope – Cells we looked at under the microscope were prepared slides and the cells had been stained with dye such as iodine. The cells and their organelles do not have much coloring, so light passes through them. Without color or contrast the organelles are difficult to see. Stains make some organelles visible.