**Cell Structure Notes**

Cell Organization

* Plant and animal cells both contain a membrane-bound structure inside that contain it’s hereditary material DNA, this is why they are both eukaryotic.

Cell Membrane

* Both animal and plant cells contain a cell membrane.
* The cell membrane keeps things inside the cell. Inside the cell membrane there is a gelatin-like substance called cytoplasm.
* Many important chemical reactions occur in the cytoplasm of a cell.
* Through the cytoplasm there is a framework that helps cells maintain or change forms. This framework is called cytoskeletons.

Cytoplasm

* Not only does the cytoskeleton allow a cell to maintain or change forms but it also allows it to move.
* An amoeba, a one cell organism, moves by stretching and contracting its cytoskeleton.
* Most of the cell’s life process occur in the cytoplasm.

Inside a eukaryotic cell there are structures called organelles.

Nucleus

* The nucleus directs all cell activities and is separated from the cytoplasm by a membrane.
* The DNA of a cell is located in the nucleus of that cell. DNA is a chemical that has the code for the cell’s structure and activities.
* It’s what has all the information needed for a cell to know what to do.

Mitochondria

* The mitochondria is referred to as the “power house” in animal cells because it’s the organelle that releases energy during the breakdown of food.

Ribosome

* Ribosome is the organelle that produces proteins.
* Proteins are very important to every cell. It makes part of the membrane, and it’s needed for many chemical reactions inside a cell.

Endoplasmic Reticulum

* The endoplasmic reticulum or ER extends from the nucleus to the cell membrane.
* It is a series of folded membrane where materials can be processed and moved around inside of a cell.
* The ER might be rough or smooth.
* It is a smooth endoplasmic reticulum if it has no ribosome attached to it, if it has ribosome attached to it is called rough endoplasmic reticulum.

Golgi Bodies

* The Golgi bodies are stacked, flattened membranes where proteins are transferred to after they are made in a cell.
* Golgi bodies sort proteins and other cellular substance and packages them into membrane-bound structures called vesicles.
* Vesicles deliver cellular substances to areas inside the cell.

Plant Cell

* Cell wall are found in plant cells only.
* Cell walls are tough, rigid outer coverings that protect the cell and give it shape.
* A plant cell wall is mostly made up of a substance called cellulose.
* The long, threadlike fibers of cellulose form a thick mesh that allows water and dissolved materials to pass through

Chloroplast

* Chloroplast is an organelle that is only found in plants and is responsible for creating food in plants.
* Chlorophyll is the green color we see in plants and it’s what captures light energy from the sun in the chloroplast to converted into chemical enzymes