Cell Chapter 3

**3.1 Cell Theory**

**Cell Theory:**

1. All organisms are made up cells.
2. All existing cells are produced by living cells.
3. Cell is the most basic unit of life.

**Prokaryotic** – Cell that does not contain a nucleus or membrane bound organelles.

* All unicellular and most functions carried out along membranes.

**Eukaryotic** – Cell that has a nucleus and membrane bound organelles.

* Found in unicellular and multicellular organisms.

**3.2 Cell Structure**

**Cytoskeleton** – Proteins that give structures to cell and provide interior and exterior movement.

**Microtubules** – Provide cell shape and moves structures inside the cell.

**Intermediate filaments** – Provides the cell strength.

**Microfilaments** – Enable cell division and movement.

**Cytoplasm** – Space between cell membrane and nucleus

* Filled with fluid called **cytosol**.

**Nucleus** – Stores DNA which is molecule that stores all genetic information.

**Nuclear Envelope** – Membrane that surrounds the nucleus and controls movement of materials in and out of the nucleus.

**Nucleolus** – Packed region of the nucleus that makes a proteins with ribosomes.

**Nucleoplasm** – Fluid of the nucleus that contains the DNA.

**Ribosome** – Structure made up of RNA and proteins that help make proteins.

**Endoplasmic reticulum** – Hollow folding passages that make and move proteins and lipids.

**Rough ER** – Ribosomes attached to surface that make proteins for outside of cell.

**Smooth ER** – Without ribosomes and makes lipids and will also break down wastes.

**Lumen** – Passageway inside the ER where proteins or lipids can be processed.

**Golgi** – Processing, sorting, packaging, and deliverer of proteins.

**Vesicles** – Made from membranes of ER and golgi which are used to carry materials from one part of the cell to another.

**Mitochondria** – Supply energy molecules to the cell.

* Site of cellular respiration
* Contains DNA and ribosomes.

**Vacuole** – Fluid filled sacs that stores materials.

* Small in animal cells and large in plant cells.
* Provides structure and storage of pigments in plant cells.

**Lysosome** – Organelles that contain enzymes that break down materials.

**Centrosome** – Region that produces microtubules and help in cell division.

**Flagella** – Long whip like tail formed by extension of the cell membrane which is used for movement.

**Cilia** – Small extension of the cell membrane that can provide movement or increase surface area.

**Cell membrane** – Surrounds cytoplasm and controls movement in and out of cell.

**Cell walls** – Outermost covering of most cells except animal cells. Provides protection, support, & shape to the cell.