Chapter 2 Notes – Life Science

Section 2.1 – Cell Structure

2 Main Types of Cells –

Prokaryotic – Cells without membrane bound structures
- **NO TRUE NUCLEUS**
- **Ex. Bacteria**

Eukaryotic – Cells with membrane bound structures
- **Has a TRUE NUCLEUS**
- **Ex. Plant or Animal Cells**

Cell Wall – Outer covering of a cell
- **Protects cell and gives the cell shape**

**** Plants, algae, fungi and most bacteria have cell walls**

**** Cell Walls are mostly made of cellulose, but they also have pectin and lignin.**

Cell Membrane – Outer covering of the cell
- **Regulates what comes in and out of the cell**

Cytoplasm – Gel-like material that organelles move in

Cytoskeleton – made up of thin, hollow tubes that help the cell maintain or change shape

Organelles

The largest organelle is the NUCLEUS.

Nucleus – Directs all cell activities
- **Contains DNA**

Nucleolus – Found inside the nucleus – "little nucleus"

Chloroplasts – Makes food for the cell

- **Contain chlorophyll**

**** Chlorophyll captures energy to make sugar (glucose).**

Mitochondria – Release Energy

Ribosomes – Make proteins

- **Some are attached to the ER and some float freely**

Endoplasmic Reticulum – moves materials around in the cell

- **Smooth ER - no ribosomes attached**
- **Rough ER – ribosomes attached**

Golgi Bodies – sort and package substances

Vacuoles – Store food, water or waste

Lysosomes – Breakdown food, waste and worn out cell parts

Levels of Organizations

1) **Cell**
2) **Tissue**
3) **Organ**
4) **Organ System**
5) **Organism**