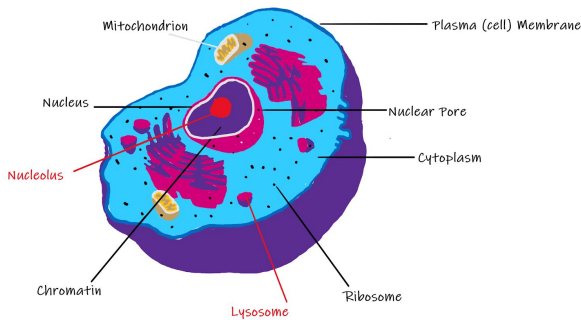


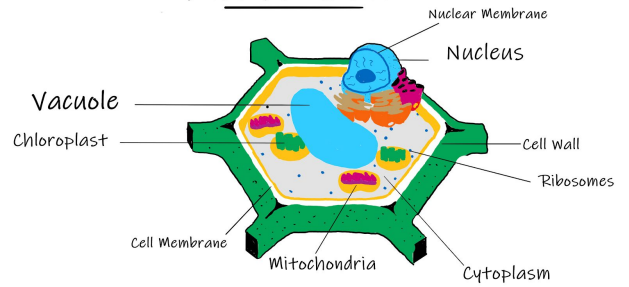
The Cell

Cell: The **Cell** is the smallest unit of matter that can carry on all the **Processes Of Life**.

Animal Cell



Plant Cell



Prokaryotic Cells: Do not have a membrane-bound nucleus and organelles such as mitochondria and chloroplasts; belong to the **Monera Kingdom**, e.g. bacteria.

Eukaryotic Cells: Have a nucleus bound by a membrane and mitochondria and chloroplasts; belong to the **Protocista, Fungi, Plant and Animal Kingdoms**.

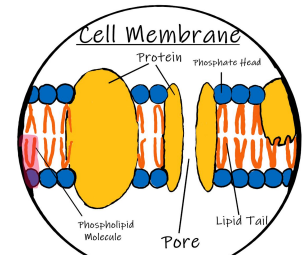
Cells contain a variety of internal structures called **Organelles**.

Cell Membranes: Made of **phospholipids** and **proteins**-constant motion - Role Of Lipids (**Food**)

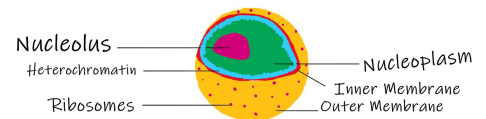
- **Separate** the cell organelles and the cytoplasm from the outside.
- **Semi-permeable** - allows some molecules freely in and out. - **Osmosis/diffusion**
- Membranes **recognise molecules** that touch them.

Nucleus: Controls the activities of the cell and contains the cell's genetic information.

- Made up of a **double membrane** with numerous **nuclear pores**. (**Nuclear Envelope**)
- ^Control the movement of substances in and out of the nucleus.^
- A **Nucleolus** which contains RNA, DNA and proteins and it makes **ribosomes**.
- **Chromatin** which contains DNA that is arranged into chromosomes which stores genes.
- When the cell is dividing the chromatin in the nucleus unravels into chromosomes. DNA + protein
- **23 chromosomes = haploid (n)** **46 chromosomes = Diploid (2n)**
- **Not dividing (interphase)**



Nucleus



Mitochondria: The **Inner Membranes** produce the energy to the cell through respiration. (More Mitochondria, more energy)The **more folds** in the Mitochondria the **more energy** it produces + **Genetic material**

Ribosomes: Can be seen as red dots in the cell. - in a light microscope.

The function is to make proteins - enzymes

Cytoplasm: It is a clear jelly-like fluid that fills the cell. - Chemical Reaction - Glycolysis - the first stage of respiration.

It contains all the organelles within the cell.

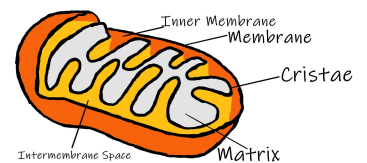
Chloroplast:

The function of the Chloroplast is photosynthesis.

The **thylakoids** contain the chlorophyll which traps the sun's energy. + Genetic material

Grana - Light Stage **Stroma - Dark Stage**

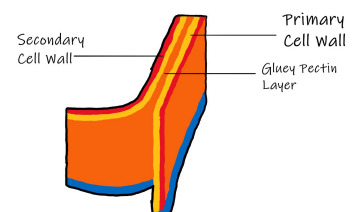
Mitochondrion



Chloroplast



Cell Wall



Cell Wall: Gives the plant cell a defined shape, made of cellulose (Polysaccharide) and proteins

The function is to support and strengthen the cell.

Vacuole: Membrane-bound sacs within the cytoplasm.

The functions are structural support, storage, waste disposal, protection and growth.