① Cell Structure

What You'll Learn:

Identify names and functions of each cell part.

Explain how important the nucleus is in a cell.

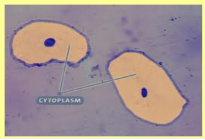
Compare tissues, organs, and organ systems.

Common Cell Traits

***A cell is the smallest unit that performs life functions.**

All cells have an outer covering called a **cell membrane**.

Inside every cell is a **gelatin like** material called **cytoplasm** (SI tuh pla zum).



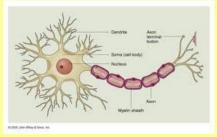
Comparing Cells

***Cells come in many sizes depending on their function.**

A nerve cell in your leg could be a meter long.

•A human egg cell is no bigger than the dot on an **i**.

•A human red blood cell is about one-tenth the size of a human egg cell.

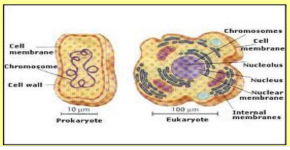


Cell Types

***Scientists have found two separate cell types.**

***Prokaryotic cells have NO membrane bound structures.**

***Eukaryotic cell have membrane bound structures.**



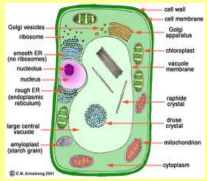
Cell Organization

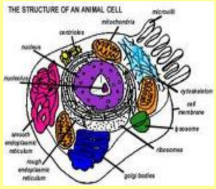
***Cell wall provides structure and support to plant cells.**

Cell Membrane

***Cell membrane protects and regulates interactions between cells.**

•If cells have cell walls, the cell membrane is inside of it.





Cytoplasm

***Cytoplasm fills cells and provides structure.**

***Within it organelles process energy and manufacture substances.**

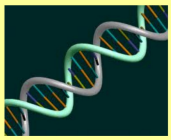
***Most organelles are surrounded by membranes.**

Nucleus

***It is usually the largest organelle.**

***It contains all the instructions for the cell and directs all activity.**

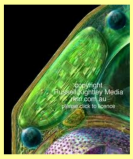
***The instructions are on DNA.**



Energy-Processing Organelles

***Chloroplasts make food in plant cells.**

***Chlorophyll captures light energy used to make sugar.**

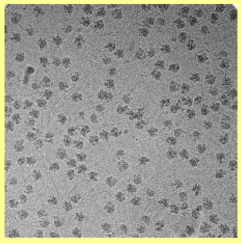


***Many organisms don't have chloroplast so they must get food from the environment**

***Energy from food is stored and released by mitochondria.**

Manufacturing Organelles

*Ribosomes make proteins.

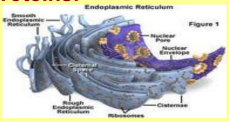


Processing, Transporting, and Storing Organelles

*Endoplasmic reticulum (ER) processes and moves material inside the cell.

*Smooth ER has no ribosomes.

*Rough ER has ribosomes attached and makes proteins.



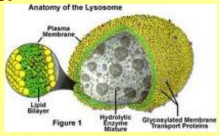
*After the proteins are made Golgi bodies package them into vesicles.

*Vesicles carry substances inside the cell and to the cell membrane

*Vacuoles are temporary storage.

Recycling Organelles

*Lysosomes contain digestive chemicals that break down food, waste, and worn out cell parts.



•When a cell dies, a lysosome's membrane disintegrates. This releases digestive chemicals that allow the quick breakdown of the cell's contents.

From Cell to Organism

*Similar cells grouped together are tissues. similar tissues are organized into organs, and organs working together form organ system.