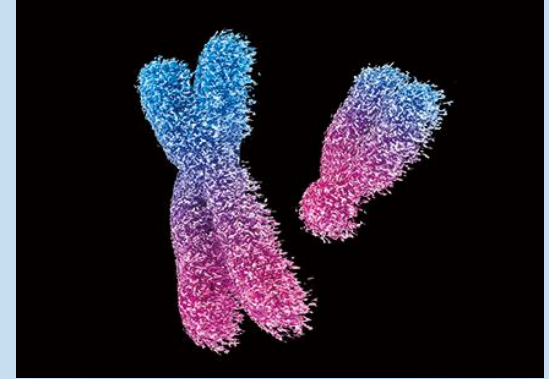




# Biology Grade 9

## REPRODUCTION AND GENETICS



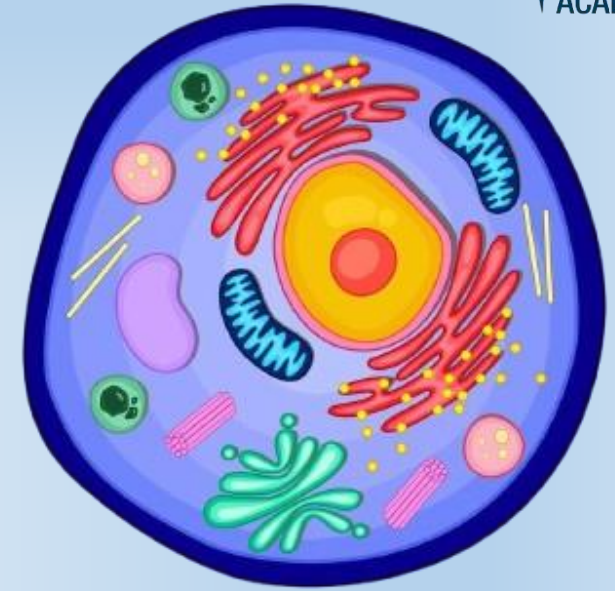
### CHAPTER 7: CHROMOSOMES, CARRIERS OF GENETIC INFORMATION

INSTRUCTOR: SUHAIB AUDI

## ❖ Introduction

### ■ What is a Cell?

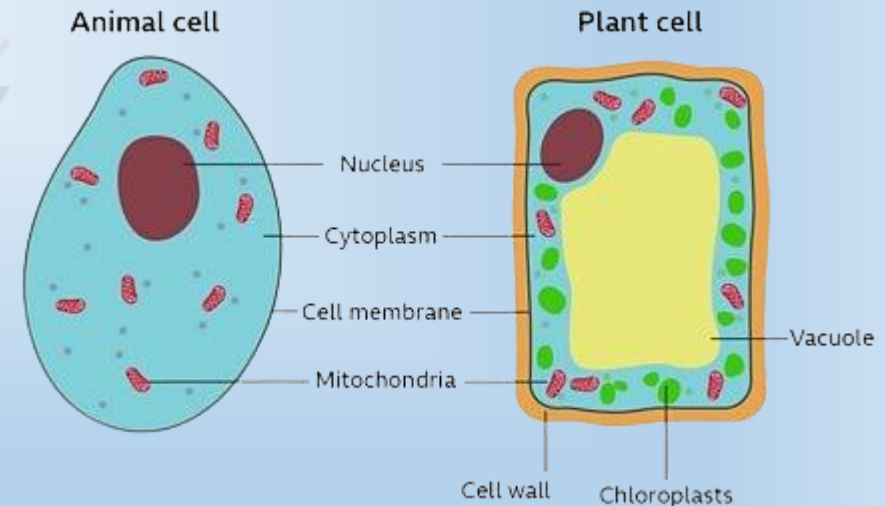
- A **cell** is the **smallest unit of life**. It is like a tiny building block that makes up all living things — like animals, plants, and even humans!
- Some living things are made of **just one cell** (like bacteria), while others (like humans and animals) are made of **millions or billions of cells**.



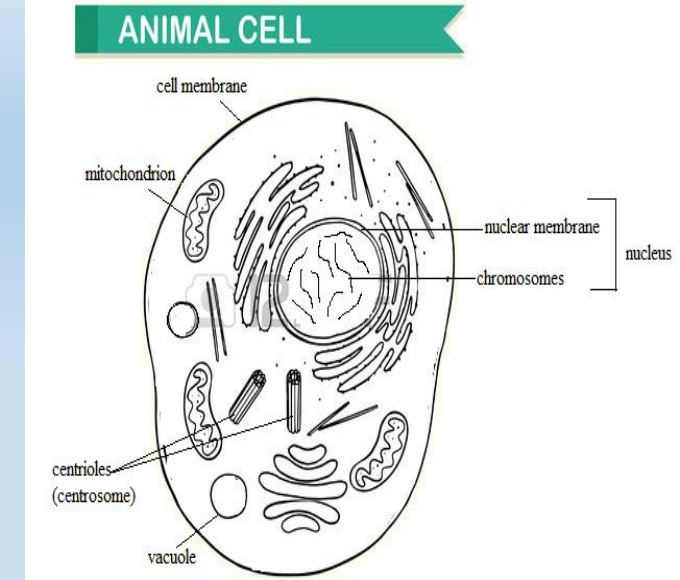
### ■ Types of Cells:

- **Animal cells** – Found in animals (including humans).
- **Plant cells** – Found in plants.

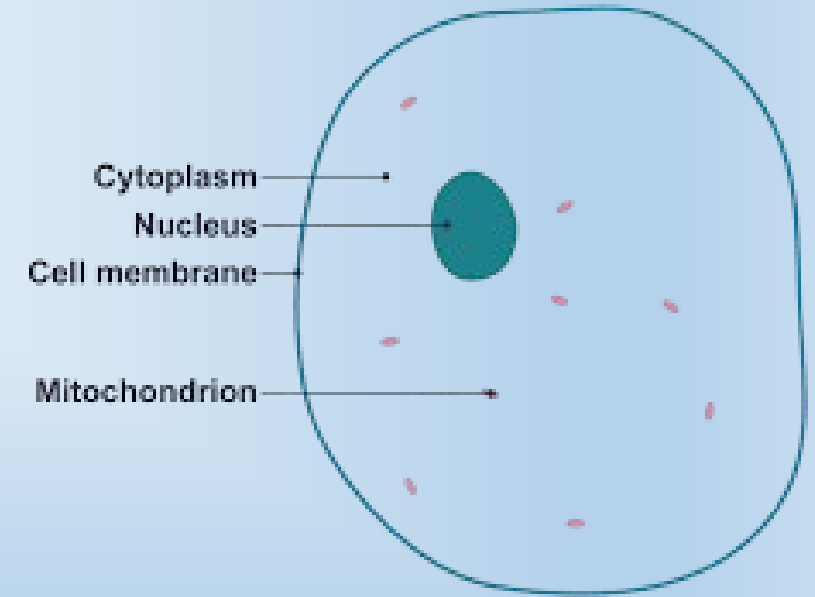
They are similar in many ways but have some differences.



- We all know that children receive cells from the parents; therefore all living things are composed of cells.
- Each cell in its turn consists from an outer border called cell membrane and inner fluid that contain all organelles which is called cytoplasm and one circular organelle in the middle which is called the nucleus.



- **Cell membrane:** protects the cell.
- **Cytoplasm:** contains many organelles (small structures) examples: centrioles, mitochondria, vacuoles...
- **Nucleus:** covered with nuclear membrane; it contains chromatin (chromosomes).
- **Centrioles (centrosome):** are only found in animal cells.

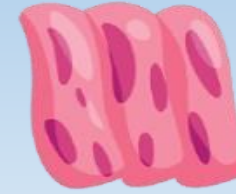


## ❖ There are 2 types of cells:

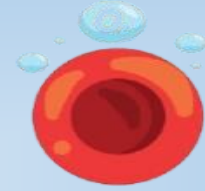
1. **Somatic cells (cells of the body):** ex: skin cell, muscle cell, nervous cell, white blood cell ..



Neuron



Epithelial Cells



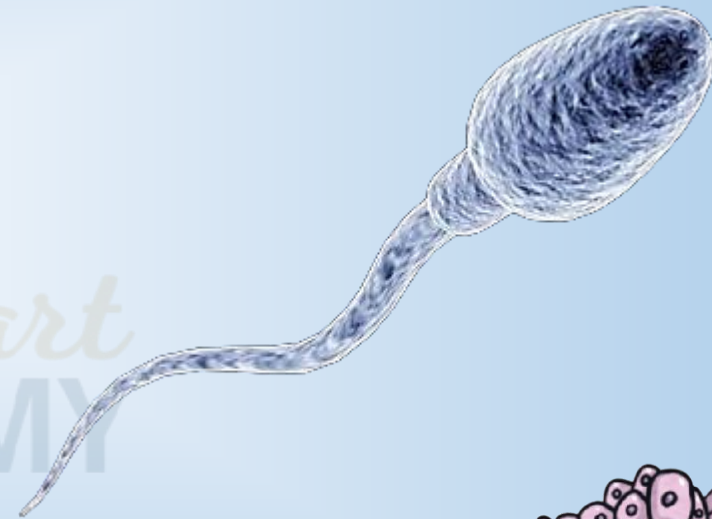
Blood Cells



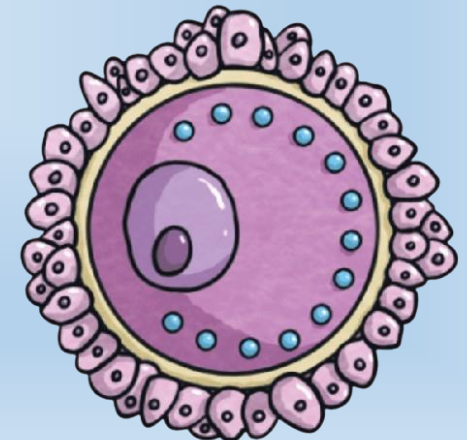
Muscle Cells

2. **Gametes (germinal cells, reproductive cells):**

- a) **Spermatozoa (sperm cells):** male reproductive cells, produced in the testicles (male genital gland).



- b) **Ova:** female reproductive cells, produced in the ovaries (female genital gland).





- **Fertilization:** the union of male and female reproductive cells that gives a zygote (fertilized egg), which develops into an embryo.

