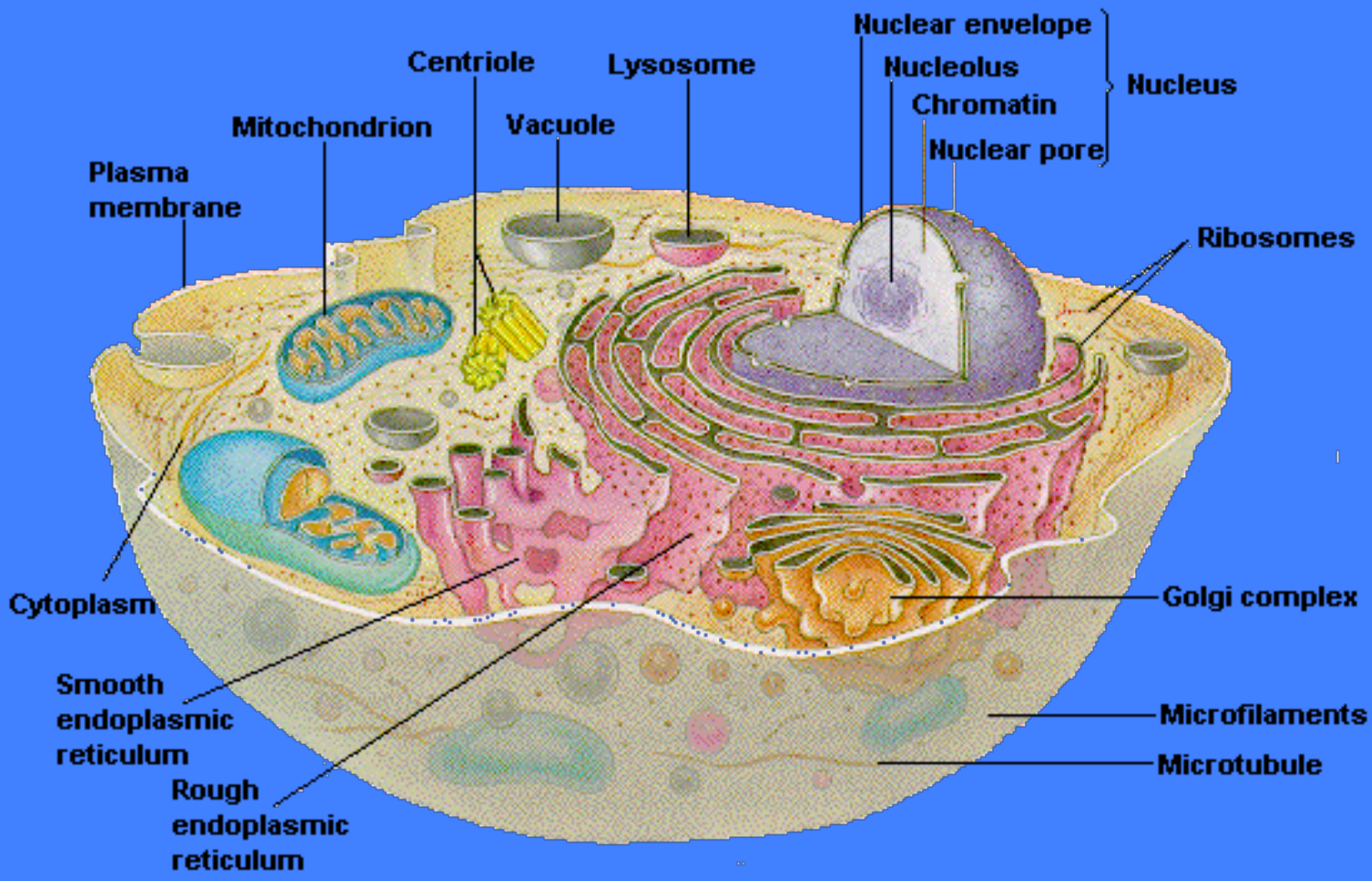
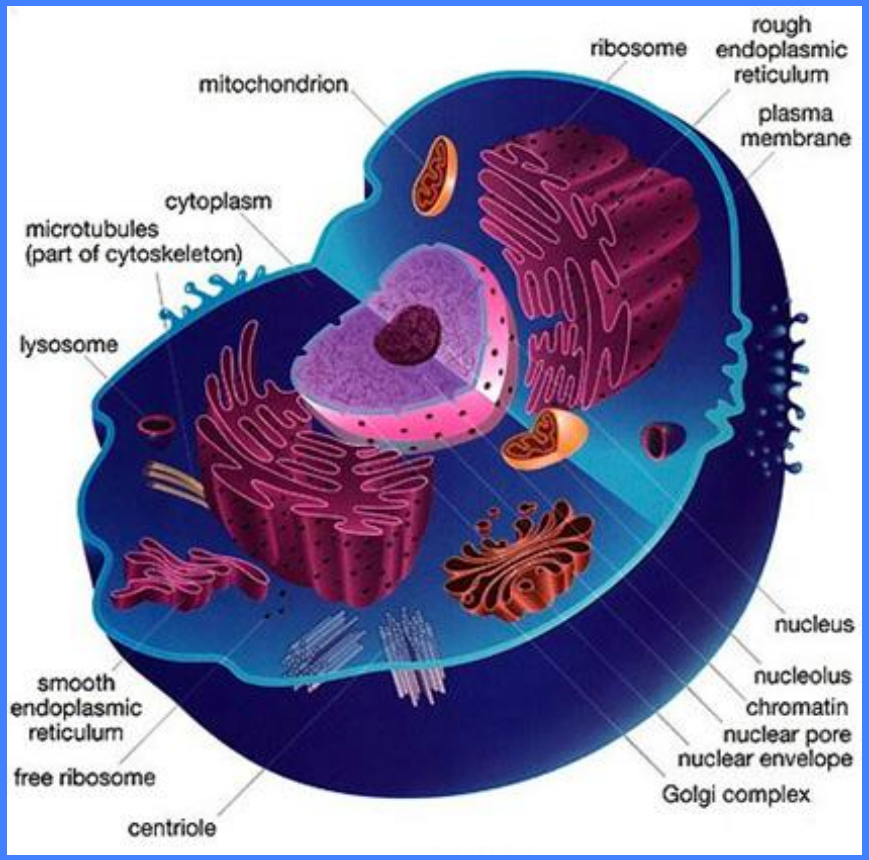
THE HUMAN CELL



THE CELL

- STRUCTURE & FUNCTION OF A HUMAN CELL
- STRUCTURE & FUNCTION OF DNA
- GENETIC DIVERSITY



THE HUMAN CELL - STRUCTURE

- THE CELL IS THE BASIC UNIT OF LIFE

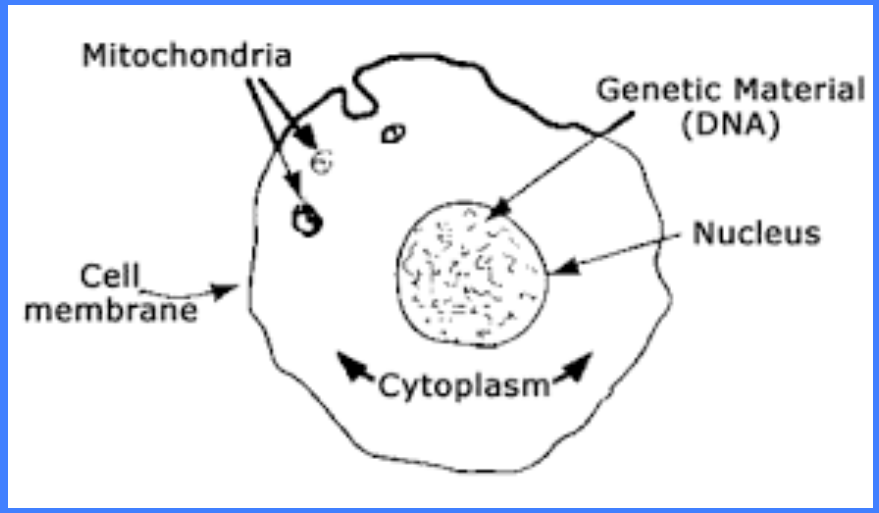
ALL LIVING THINGS MUST BE ABLE TO NOURISH THEMSELVES, BREATHE, ELIMINATE WASTE, GROW, AND REPRODUCE

<u>STRUCTURE</u>

- 1- CELL MEMBRANE – a flexible barrier that surrounds the cell content, allowing the cell to interact with its environment
- 2- CYTOPLASM – a gelatinous fluid inside the cell membrane and outside the nucleus
- 3- NUCLEUS – the cell's control center (BRAIN OF CELL)

THE HUMAN CELL - FUNCTION

- **CELL MEMBRANE** –
  - a) forms a barrier and protects the cell
  - b) facilitates the absorption of nutrients
  - c) facilitates the evacuation of waste



THE HUMAN CELL - FUNCTION

- **CYTOPLASM** –

  a) establishes an environment that is hospitable for most cell activities

  b) includes the following parts:

MITOCHONDRIA: produce energy through cellular respiration

GOLGI APPARATUS: stores material produced by the cell and transports it to the cell membrane and outside the cell

ENDOPLASMIC RETICULUM: produces some of the material necessary for cell activities. Transports material from one cell to another.

RIBOSOMES: produces some of the material necessary for cell activities and reproduction.

THE HUMAN CELL - FUNCTION

- **NUCLEUS –**

  a) contains and protects individual genetic information

  b) controls all cell activities

NUCLEAR MEMBRANE: forms a barrier and protects the nucleus. Enables certain exchanges with the rest of the cell.

DNA: controls all cell activity. Controls all genetic information.

DNA – STRUCTURE & FUNCTION

- **DNA:** DEOXYRIBONUCLEIC ACID

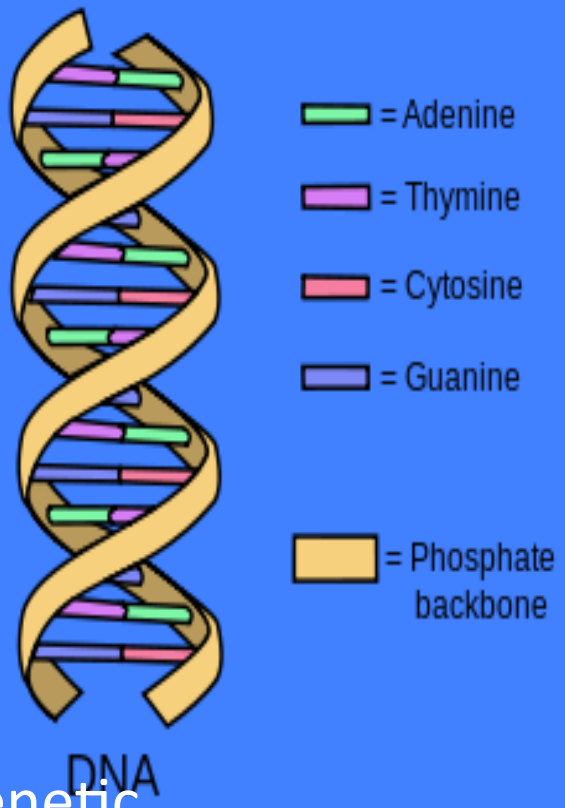
A very long molecule inside a cell's nucleus which usually appears as long threads.

Shaped like a double helix,
located inside the cell nucleus

Looks like a ladder, and
each rung is formed by a single base pair

DNA STRUCTURE & FUNCTION

- BASE PAIRS – Sequencing constitutes the individuals or species genome. Humans have approximately 3 Billion base pairs. ADENINE (A) – THYMINE (T)
  CYTOSINE (C) – GUANINE (G)



- GENOME – the complete set of genetic information of an individual or species

- GENES – a segment of DNA that contains genetic information required to carry out a specific job. 25000 genes determine an individual's specific characteristics

GENETIC DIVERSITY

- **GENETIC DIVERSITY –**

Achieved by all the possible genetic variations of a particular species. The greater the population, the greater the genetic diversity.