

All life on Earth is organized according to the scheme described below.  
Larger biological systems are formed of smaller ones.

**ATOMS**→ fundamental unit of matter formed of protons, neutrons and electrons

**MOLECULES**→ formed of atoms bonded together (covalent, ionic, hydrogen bonds) including monosaccharides (simple sugars), amino acids, fatty acids and nucleotides.

**MACROMOLECULES**→ large molecules formed of the smaller molecules above that are the building blocks of cells including carbohydrates (polysaccharides), proteins/peptides, lipids and nucleic acids.

**CELLS**→ the basic unit of life capable of reproducing/dividing that form all organisms

**TISSUES**→ two or more cells working together for a similar function (see types below)

**ORGANS**→ two or more different tissue types working together for a similar function

**ORGAN SYSTEMS**→ two or more organs working together for a similar function

**ORGANISM** → an individual (a human) formed of the organ systems necessary to maintain homeostasis in an ever changing environment

**POPULATION**→ all the individuals of one species living and interbreeding in an area

## ➤ **PRIMARY OR BASIC TISSUE TYPES IN ANIMALS**

- **MUSCLE TISSUE** = excitable & contractile for movement of skeleton & internal organs
- **NERVOUS TISSUE** = excitable using electrical signals (action potentials) for communication between cells and tissues
- **EPITHELIAL TISSUE** = cells that line the insides and outsides of other tissues/organs
- **CONNECTIVE TISSUE** = cells that hold and anchor or connect other tissues together

• **PHYSIOLOGY** = the study of the integrated functions of the vital systems of living organisms. This study could be of any living organism (bacteria, plants, animals or humans, etc.)

• **HOMEOSTASIS** = maintenance of a relatively stable internal environment  
Homeostasis is essential for the survival of each cell, and each cell, through its specialized activities, contributes as part of a body system to the maintenance of the internal environment shared by all cells

• **HISTOLOGY** = The study of tissues