

Basic Biology

Biology is the study of life and life processes.

1. Cellular Structure	• All living organisms are made up of cells. • The protoplasm gives the cell a definite shape.
2. Metabolism	• The various life processes which occur in the body of an organism are collectively known as metabolism. • Metabolism consists of anabolism and catabolism.
3. Growth, Repair and Death	• Growth is the addition of new protoplasmic material. • It is a permanent, irreversible process. • Growth and repair replace worn out cells and heal wounds and fractures. • Some organisms can regrow or regenerate certain parts of the body. • Example: Lizards can regenerate their tails.
4. Respiration	• It is a catabolic process by which an organism assimilates oxygen, oxidises organic substances and releases carbon dioxide, water vapour and energy.
5. Movement	• Movement is any change brought about in the orientation of any part of the body of organisms. • Example: Plants grow roots against sunlight, while stems, leaves and flowers move towards sunlight. • Amoeba locomotes by projecting pseudopodia.
6. Nutrition	• The process by which living organisms assimilate food and use it for growth and replacement of tissues is known as nutrition. • Feeding, digestion and assimilation help nutrition to take place. • Green plants synthesise their food by using carbon dioxide and water in the presence of sunlight by the process of photosynthesis.

7. Excretion	It is the process of removal of harmful waste products derived from the organism's own metabolism.
8. Irritability	- Any change in the environment to which an organism responds is called a stimulus. - The capacity of an organism to react to stimuli in a particular manner is called irritability. - Example: Response of a plant to light and gravity.
9. Reproduction and Evolvability	Each living organism has the ability to produce new individuals resembling it in all essential features.
10. Life Span and Death	The period during which an organism completes its life cycle is called its life span.

Differences between Living and Non-living Things

Living Things	Non-living Things
• Made up of cells.	• Lack cellular structures.
• Growth is by cell division.	• Growth is by the addition of similar kind of material.
• They have the ability to reproduce similar individuals.	• Do not reproduce.

Differences between the Growth of a Living Organism and the Growth of a Crystal

Growth of a Living Organism	Growth of a Crystal
1. Growth occurs by cell division.	1. Growth occurs by the addition of similar material.
2. Growth is irreversible.	2. Growth is reversible.