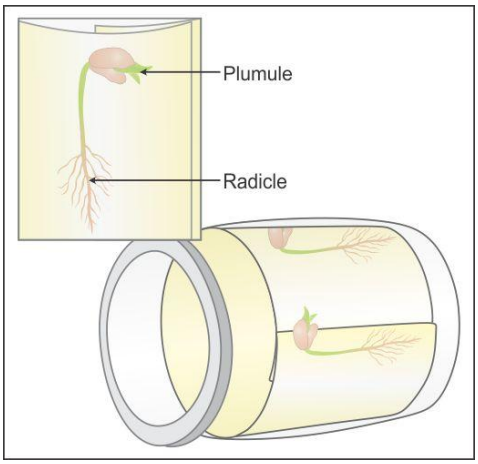
Basic Biology

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.