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**Chapter Summary**

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### Distinctive Characteristics of Living Organisms

- 1) Growth
- 2) Reproduction
- 3) Metabolism
- 4) Consciousness

The above characteristics have been defined as features that make **living organisms** different from **non-living organisms**.

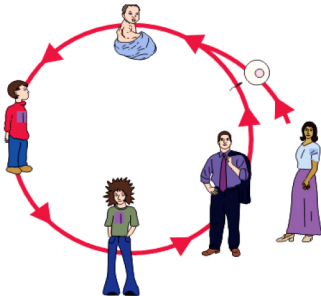
## Growth

- Defined as an irreversible increase in size and mass
- Occurs from inside in living organisms
- Either due to increase in number or increase in size of the constituent cells in living organisms



## Growth Cycle in Human beings

A single celled zygote divides to form a multicellular embryo that on further growth and development gives rise to an infant. The infant grows to become an adult.



## Growth

<b>Plant growth</b>	<b>Animal growth</b>
Plant growth is limited to specific body parts and tissues.	Animal growth is not restricted to specific tissue or part.
Growth in plants is continuous throughout their life.	Growth in animals is seen only upto a certain age.

# Reproduction

A biological process in which an organism gives rise to **young one/s similar to itself**

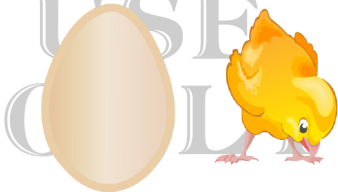
Reproduction

**Asexual Reproduction**  
(involves only one parent)

**Sexual Reproduction**  
(involves two parents)

## Reproduction

- It helps the **species to maintain its existence**.
- If the organisms will not be able to produce their offsprings, one day all the organisms of that type will die; hence, their species will get extinct.



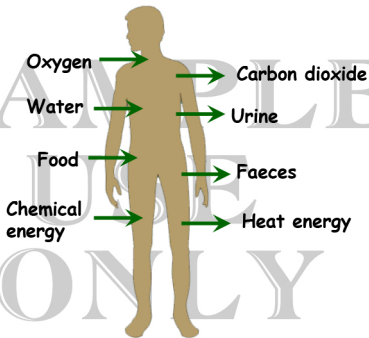
## Metabolism

- The sum of all chemical reactions occurring within the living organism is known as **metabolism**.
- These are of two types:
  - ✓ **Anabolic reactions:** Involve **synthesis** of a biomolecule
  - ✓ **Catabolic reactions:** Involve **breakdown** of a biomolecule

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# Metabolism



Inputs and Outputs of Metabolism

## Consciousness

- Consciousness is the ability of the organisms to sense their surroundings.
- The stimuli that affect living organisms could be physical, chemical or biological.
- Our sense organs help in receiving these stimuli and our brain helps in producing responses against these stimuli.
- All living organisms respond to stimuli around them.
- Our sense organs:
  - a) eyes
  - b) ears
  - c) nose
  - d) tongue
  - e) skin
- These organs help in receiving these stimuli.