

Adaptation	Acclimatization
Features which help the organism to survive naturally in their environment	Also Involves changes or adjustments
Acquired over a long period of time	But for a short period of time

HABITAT - place where an organism lives/dwelling place

Types

Terrestrial habitat	Aquatic habitat
Land	Water
Eg. Forests, grasslands, deserts, coasts, mountains	Eg. Freshwater - rivers, lakes, ponds Saltwater - oceans, seas

Components

Biotic	Abiotic
All living organisms	Non-living things
Eg. Plants, animals	Eg. Soil, air, rocks, water

How abiotic components influence biotic components

Taking dry moong seeds and wet moong seeds soaked in water

Case 1: Some are completely submerged in water and the rest of them are dry.

Case 2: Some soaked seeds are kept in a cupboard and some are kept in a sunny room.

Case 3: Some soaked seeds are kept in normal condition and some are kept in the refrigerator.

Terrestrial habitats

1. Desert

a. Camel



- Long legs to keep the body away from the heat of the sands.
- Excrete small amounts of urine.
- Dry dung
- Do not sweat

b. Rats and Snakes - no long legs

- Stay in burrows deep in the sand
- Come only at night when it is cooler.

c. Desert Plants

Activity - Cactus vs Leafy plants

- Leaves either absent or small or in the form of spines to reduce water loss by transpiration.
- Photosynthesis is often carried out by stem.
- Stem covered with a waxy layer to retain water in the tissues.
- Root that goes deep into the soil.

2. Mountain

a. Plants



- **Normally cone shaped and sloping branches.**
- **Needles like leaves.**
(This helps the rain water and snow to slide off easily)

b. Animals

- **Thick skin of fur to protect from cold.**



- E.g - yak -long hair.



- snow leopard - thick fur on body including feet and toes.



- Mountain goat - strong hooves for running up rocky slopes.



3. Grasslands

a. Lion



- Long claws that can be withdrawn into toes.
- Light brown colour for camouflaging, while hunting for prey.
- Eyes in front of face to find the location of prey correctly.

b. Deer

- Strong teeth for chewing hard plant stems.
- Long ears to hear movement of predators and escape.
- Eyes on the side of the head to look in all directions.
- speed.



AQUATIC HABITATS

1. OCEANS

a. Fish



- **Streamlined**
- **Slippery scales for protection and easy movement**
- **Flat fins and tails to change direction and keep body balance**
- **Gills to take in dissolved oxygen from water**

b. Octopus & Squids



- **No streamlined shape, streamline shape only appears during movements**

- Live near the sea bed and catch their prey
- Gills
- c. **Whales & Dolphins**



- No gills
- They take in air through nostrils or blow holes located on the upper part of their head. Swim to the surface of the water.
- Can stay inside of water for a long period of time
- Come to the surface from time to time for breathing

2. Ponds & Lakes

a. Plants with roots fixed in the soil below the water. (Lotus, water lily)

- Roots reduce in size and hold the plant in place.
- Stems long hollow light and go up to the surface of water.
- Leaves and flowers float on water surface

b. Plants totally submerged in water (Hydrilla, Vallisneria)

- Thin narrow ribbon like leaves which can bend in flowing water
- leaves may be highly divided through which water can flow without causing damage



Hydrilla

c. Frogs - lives on land and in water

- **Webbed feet for swimming**
- **Strong back legs for jumping and catching prey**

Characteristics of living things

1. Need food

- **Plants prepare their own food by photosynthesis**
- **Animals depend on plants or other animals for food**
- **Food is required for energy, growth, maintain body function**
- **Performing various life process**

2. Living things grow (by addition of new cells)

3. Respiration

- **Process of obtaining energy from the food**
- **Types - Aerobic(in presence of Oxygen) and Anaerobic(in absence of oxygen)**
- **Aerobic respiration includes breathing(gas exchange),**
E.g. - Earthworm through skin, fish through gills
 - **Stomata**

4. Response to stimuli - changes in surroundings that causes us to respond or react to them are called stimuli

Eg. Stepping on a thorn walking barefoot

Moving from dark room to bright light - squinting

Watering of mouth in presence of food

Running away from danger

Cockroaches hide when light is switched off

Mimosa or touch-me-not leaves close if someone touches them

Some plants close after sunset

Phototropic movement of plants

5. Excretion - process of getting rid of wastes

- **Animals - urine (nitrogenous waste)**
faeces (undigested food)
- **Plants - removed as secretions**

6. Reproduction

- **Producing their own kind for continuation of species.**
- **Birds - eggs**
- **Mammals - give birth to young ones**
- **Some Plants - seeds**
- **Potato - bud**
- **Stem cutting - rose**

7. Movement

- **Animals**
 - a. **movement of specific parts**
 - b. **Locomotion - from one place to another**
 - for Food**
 - Shelter**
 - Breeding ground**
 - To escape from danger**
- **Plants**
 - a. **Leaves of Mimosa or touch-me-not close when touched**
 - b. **Phototropic**
 - I. **Positive - towards light (shoot)**
 - II. **Negative - away from light (root)**

c. Geotropic

I. Positive - towards earth (root)

II. Negative - away from earth (shoot)

ALL LIVING THINGS MAY NOT SHOW ALL THE ABOVE FEATURES

- **Plants do not move from one place to another**
- **We stop growing after a certain age**

**NON-LIVING THINGS DO NOT HAVE THE ABOVE CHARACTERISTICS
BUT THEY MAY INCLUDE SOME FEATURES MENTIONED ABOVE BUT
NEVER ALL**

- **Vehicles, rivers, air move**
- **Moong seed - shows no movement, excretion etc but germinates
into new plants if put in the soil with proper conditions**