Habitat and Adaptation

Types of Habitat

Characteristics of Living Things

Habitat and Adaptation

Organisms and their Surrounding

Organisms are the living creatures that inhabit an area. These organism vary from region to region like the desert has camel and mountain has yak.

Habitat and Adaptation

The surroundings where organisms live are called a **habitat.** For example fishes and aquatic plants live in water and have an aquatic habitat.

The presence of specific features or certain habits, which enable a plant or an animal to live in its surroundings, is called **adaptation**. For example leaves in desert plants are small or reduced or are present in form of spines to reduce transpiration.

Biotic and Abiotic Components

The plants and animals which are the living organisms comprise of the **biotic component.** The rocks, water, soil and air are non living and are hence called the **abiotic components.**

Types of Habitat

Terrestrial habitat

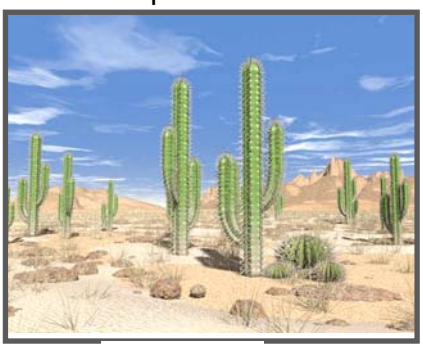
Deserts

Adaptation of Animals

- Desert animals like rats and snakes live in burrows during day time to escape intense heat.
- Camels have long legs that help them keep away from the heat of the sand.

Adaptation of Plants

- Desert plants have extensive root system that go deep in the soil for absorbing water.
- Leaves are small or reduced in form of spines to reduce loss of water due to transpiration.
- Photosynthesis is carried out by stem which have thick waxy coating to retain water.



Cactus

Activity

Bring a potted cactus and a leafy plant into the classroom. Tie polythene bags to both the plants. Then keep the set up under the sun light. Carefully observe both the potted plants

after 4-6 hours. You can notice that the polythene bag covering leafy plant contains more water in comparison to the cactus plant.
This concludes that desert plants lose very little water through transpiration.

Mountain region

Adaptation of Animals

- Snow leopards have thick fur on its body to protect them from cold when they walk on snow.
- Yaks have long hair to keep them warm.
- The mountain goat has strong hooves for running up the rocky slopes of the mountains.

Adaptation of Plants

- Trees are normally cone shaped and have sloping branches.
- The leaves of some of these trees are needle-like which helps the rainwater and snow to slide off easily.
- Snow leopards have thick fur on its body to protect them from cold when they walk on snow.
- Yaks have long hair to keep them warm.
- The mountain goat has strong hooves for running up the rocky slopes of the mountains.

Pine trees

Grasslands

Adaptation of Animals

- Animals like lion, deer, and zebra inhabit in grasslands.
- The lion has light brown in colour which makes it hide in dry grasslands easily.
- It has long claws in their front legs that can be withdrawn inside the toes.
- The eyes in front of the face allow it to have a correct idea about the location of its prey.

Animals in grassland

- Deer has strong teeth for chewing hard plant stems of the forest.
- It has long ears to hear movements of predators**.** The eyes on the side of its head allow it to look in all directions for danger.
- The speed of the deer helps them to run away from the predators.

Aquatic Habitat

Oceans

- Aquatic animals like fish have streamline body that enable them to swim in water.

- Animals like squid and octopus stay deep in ocean bed and make their body streamlined while moving.
- Mammals like whales can stay long without breathing. They have blowholes that help in breathing near water surface.
- Both plants and animals use oxygen dissolved in water for respiration.

Aquatic habitat

Ponds and lakes

- In aquatic plants, roots are much reduced in size and their main function is to hold the plant in place.
- Stem are long hollow and light which grow on the surface of water while flower and leaves float on the water surface.
- Leaves of submerged plants are highly divided or ribbon shaped to allow easy flow of water without damage
- Amphibians like frog have strong back legs that help them in leaping and catching their prey.
- They have webbed feet which help them swim in water.

Pond habitat

Characteristics of Living Organisms

- **Nutrition** – All living organisms require food that provides energy and enable them to grow. Plants synthesize their own food by photosynthesis and animals depend on plants for food.
- **Growth** – Living organisms grow like an egg hatches to produce hen, seeds germinate into a seedling and pups grow into adult dog.
- **Respiration** – Plants and animals take in oxygen and give out carbon dioxide by the process of breathing which is a part of respiration. The glucose from food is broken down to generate energy. Earthworm breathes through skin while fish through gills. Lungs are the respiratory organs in mammals. Plants photosynthesize during day while respiration takes place all the time.
- **Response to stimuli** – Changes in our surroundings that makes us respond to them, are called **stimuli**. All living organisms respond to stimuli. For example the leaves of mimosa plant close on touching and wild animals run away when bright light is flashed towards them.
- **Reproduction** – It is the process in living organisms where the organism produces offspring.
- Mode of reproduction may vary. Some animals like hen lay eggs while dogs and cow give birth to young ones.
- Plants reproduce by seeds but can also grow from leaves, roots or stem like a potato with a bud grows into a new plant.
- **Excretion** – plants and animals get rid of their waste materials through the process of excretion. Plants secrete resins and gums while animals excrete in the form of uric acid or urea.