

Adaptation In Animal

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The process, in which a plant or animal adapts or changes itself to suit its environment is called **adaptation**. Those animals that cannot adapt or changes in their environment, slowly die out; for example, Dinosaurs.



Dinosaur

ADAPTION TO ENVIRONMENT

All animals are well adapted to live in their natural environment, they either die in unsuitable environment or move to place where they are better suited.

Depending on the environment in which they live, they can be distinguished from one another in the following way :

Terrestrial Animals

Animals that live on ground are called **terrestrial animals**. Animals such as tigers, horses, camels, cows, rabbits, snakes etc. live on the ground. They spend most of their time on the ground, but some can also swim. Their bodies are suited to life on the ground. They can immediately sense the changes in their surroundings as their nervous system and sense organs are well-developed. For example, a deer runs fast to save itself when it senses the appearance of a lion, tiger or a bear.

Do You Know ?

The long neck of the giraffe is a beautiful example of adaption. Apart from grass, giraffes are also able to eat the leaves of trees and reach the higher branch.



Tiger



Camel



Horse

Animals such as snakes do not have legs. They have plates or scales to crawl to save themselves. Animals like the polar bear, yak, Himalayan rabbit and silver fox that live

in cold regions, usually have thick fur on their skin and also have a layer of fat under their skin which is used as food in winter. Animals that live in the desert have a thick covering of skin with less hair to protect them from the heat of the sun. It is thick and less hairy to prevent loss of water, like camel.

To protect themselves from the cold, in winters some animals such as lizards and frogs sleep for several months. It is called **hibernation**. During this time they use the stored up food, usually fat, in their bodies. Some animals during summer when the temperature is very high, go deep into the mud. This process is called **summer aestivation**.

Aquatic Animals

The meaning of aqua is water. So the animals, that live in water are known as aquatic animals. Some animals like fishes, snails, turtles, crabs, seahorse etc. live in water. Their bodies are suited in water. They have fins or suitable limbs for swimming in water. Fishes swim by flexing their fins side to side. Crabs have pairs of jointed legs. Turtles have a paddle like limbs that help them to swim. Fishes and crabs both have gills that help them to breathe in water.



Fishes



Turtle



Crab

Amphibians

Animals that have four limbs and can live in water as well as on land are called amphibians. Salamanders, frogs, toads and newts are some amphibians. They have a moist skin to breathe in water and also lungs to breathe when they are on land. When the conditions are not favourable they hibernate.



Salamander



Tadpole



Newts

Aerial Animals

Aerial animals are those animals which fly in the air. Bats and birds are the examples of such animals. They have wings to fly and have developed flight muscles to fly. Their bones are hollow and become filled with air to make the body lighter. The shape of the body is such that they can cut through the air easily. Most of the insects are also aerial.



Bat



Parrot



Hawk

Arboreal Animals

Animals that spend most of their time on trees are called arboreal animals. Monkeys, squirrels, tree lizards, and some other insects are the examples of arboreal animals. They have well-developed claws, strong legs and arms and broad hip girdles which help them to support their bodies while climb. Their bodies have spines or plates which prevent them from slipping. Monkeys and apes can swing branch to branch. They use their tails to balance themselves while hanging or jumping on trees.



Monkey



Squirrel

ADAPTION FOR FOOD

Animals eat plants or other animals. They can be classified into four categories according to their food habits.

Plant-eating Animals or Herbivores



Cow



Giraffe

Animals such as cow, goat, giraffe, deer etc. eat plants. They have long and strong legs to travel long distances in search of food. They have sharp teeth and strong grinding teeth. These plant-eating animals are known as **herbivorous animals**.

Flesh eating Animals or Carnivores

Some animals cannot digest plant tissues, therefore, they eat flesh of animals smaller than themselves. These animals are called carnivores. Tiger, lion, fox, kingfisher, owl, vulture etc. are carnivores. The animals, such as tiger, lion, fox have sharp canine teeth to fill their prey and tear up the flesh. Owl and vulture have powerful claws and a hooked beak to tear up the flesh.



Tiger



Lion



Fox

Animals that eat both Plants and Animals are Omnivores

Some animals eat both plants and animals. They are called omnivores. Human beings are omnivores and so are crow, bear, cockroach and dog.



Crow



Bear



Cockroach



Dog



Roundworms



Hookworms



Bacteria



Mosquitoes

Parasites

Some animals depend on other living beings for their food. These animals are called parasites. The animals that provide food to the parasites are called hosts. Roundworms, tapeworms, hookworms, bacteria, bugs, fleas and mosquitoes are the animals which live on or with the body of their hosts and obtain food from there. For this they have suckers or sucking tubes to suck food from the body of their host.

ADAPTATION FOR PROTECTION

All animals have their enemies. Protecting themselves from their enemies is a nature instinct of animals. Animals protect themselves from being killed or eaten by other animals.

- **Ability to move fast, fly, swim quickly or hide to escape** from their enemy, as in the case of deer, houseflies, fish and frogs.
- **To have a huge body** so that they may not have many enemies, apart from man. Whales, hippos and elephants are such animals.



Deer



Hippo

- **To merge with the surrounding** some animals change their behaviour, their colour and modify their structure even, to protect themselves from their enemies. The frogs



Frog



Chameleon

that live in green grass and green in colour and the frogs found in yellow water are yellow in colour just to dodge. The chameleon can change its colour within a few minutes to escape with ease.

Animals like weasles and arctic

foxes that live in polar regions have brown fur-coats in summer but in winter they have grey-white fur. It helps them to merge their colour with the surroundings and it becomes difficult for their enemies to detect them.

Animals such as zebra and leopard stripes or spots on their bodies which make them merge or mix with their surroundings.



Zebra



Leopard



Stick insect



Leaf insect

Insects like the stick and leaf insect look like what their names suggest. The leaf insect is green in colour and its shape resembles a leaf. So its enemies cannot judge whether it is a leaf or an insect.



Know the Keywords :

- Hibernate : Pass the winter as if in a deep sleep.
 Girdles : Encircling structure or part
 Parasites : Animal or plant living in or on another.



Point to Remember

- All animals are well adapted to live in their natural environment.
- Animals that live on ground are called terrestrial animals.
- The meaning of aqua is water.
- Animals that have four limbs and can live in water as well as on land are called amphibians.
- Aerial animals are those animals which fly in the air
- Animals that spend most of their time on trees are called arboreal animals.
- Animals can be classified into four categories according to their food habits.
- All animals have their enemies. Protecting themselves from their enemies is a nature instinct animals.

EXERCISE TIME

A. Multiple choice questions (MCQs).

Tick (✓) the correct option :

- Animals that live on _____ are called terrestrial animals.
 a. air b. water c. sound
- Animals such as snake do not have _____.
 a. ears b. eyes c. legs
- Animals that have _____ limbs live in water as well as land.
 a. two b. five c. four
- Animals that eat both plants and animals are called _____.
 a. omnivores b. herbivores c. carnivores
- All animals have their _____.
 a. enemies b. friends c. relatives

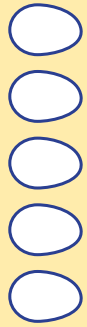
B. Fill in the blanks :

- Animals that live on ground are called _____.

2. The meaning of _____ is water.
3. Animal such as _____ do not have legs.
4. Salamanders, frogs, toads and newts are some _____.
5. The animals that provide food to the parasites are called _____.

C. Write 'T' for true and 'F' for false statements :

1. All the animals need to adjust themselves to their environment to survive.
2. Snakes have plates or scales to swim.
3. Turtles have paddle-like limbs that help them to swim.
4. Some animals cannot digest plant tissues.
5. The chameleon can change its colour within a few minutes to escape with ease.



D. Match the following :

- | | |
|---------------|----------|
| 1. Parasite | a. Lion |
| 2. Carnivores | b. Whale |
| 3. Large size | c. Bat |
| 4. Aerial | d. Cow |
| 5. Herbivores | e. Leech |

E. Answer the following questions :

1. Define adaptation. How are terrestrial animals adapted to their made of life ?
2. What is hibernation ? Name some animals that hibernate.
3. How are animals grouped according to their food ?
4. What are the ways by which animals protect themselves ?
5. What are parasites ?



Creative Work

- Collect pictures of different animals and make a large collage for the classroom wall. Use the words terrestrial, aquatic, amphibians, arboreal and aerial on the display board and show animals of each categories.

