3

Adaptations in Animals

SPECIFIC OBJECTIVES

The students learn about

- different extinct animals
- adaptations in animals of different habitats
- adaptations in animals for feeding
- adaptations in parasites
- adaptations in animals for protection

TEACHING AIDS

Picture/animation on extinct animals – Dinosaurs, Sabre-toothed tiger, etc.; Camel in desert, Polar bear on snow, snake crawling, hibernating animals; aquatic animals–fish, turtle; Frog near pond, salamander; Monkey, squirrel on tree; Flying birds; Cow eating grass or chewing cud, some carnivorous birds and animals, some omnivorous animals, teeth of herbivores, carnivores and omnivores; Some parasitic animals – leech and mosquito sucking blood, roundworm, tapeworm; Zebra in grassland, chameleon on tree, stick insect; Deer running for protecting itself from a tiger/lion, snail with its shell and porcupine showing its spines.

LESSON PLAN

- Teacher will start the chapter with 'Warm Up' section by giving a brief idea that animals have shapes and forms according to their surroundings. Teacher will also tell the name of the animal, i.e., arctic fox shown in the picture and help students to fill in the blank.
- With the help of picture/animation on some extinct animals, teacher will explain that all animals have some features that help them live in their surroundings. When a change occurs in the surroundings and animals do not bring changes in them accordingly, they cannot survive. They die and ultimately become extinct.
- Now, teacher will explain the groups of animals based on different habitats:
  - Terrestrial animals live on land.
  - Aquatic animals live in water.
  - Amphibians live both on land and in water.
  - Arboreal animals live on trees.
  - Aerial animals fly in air.

- Now, with the help of different teaching aids, teacher will explain the adaptations found in animals for living in different habitats.
  - **Adaptations in terrestrial animals**
  - Teacher will explain the adaptive features of camel and polar bear that suit them to live in desert and poles respectively (as given in chapter).
  - Teacher will explain that some animals cannot tolerate chilling cold in their surroundings, so they go on hibernation, i.e., they hide themselves in warm places. Teacher will also explain how these animals survive during hibernation.
  - Teacher will explain that terrestrial animals like snakes do not have legs because they live in holes. So they have scales on their body to move.
  - **Adaptations in aquatic animals:** Teacher will explain the adaptive features of fish, ducks, water crows, cranes, flamingoes that enable them to live in aquatic environment (as given in chapter).
  - **Adaptations in amphibians:** Teacher will explain adaptive features of frog that help it to live both on land and in water (as given in chapter).
  - **Adaptations in arboreal animals:** Teacher will explain adaptive features of arboreal animals that help them to live on trees (as given in chapter).
  - **Adaptations in aerial animals:** Teacher will explain the adaptive features of birds and bats that help them live aerial mode of life (as given in chapter).
- To check the learning of students, teacher will ask them to solve 'Checkpoint 1'.
- Now, teacher will define the groups of animals according to the food they eat:
  - Herbivores are plant-eating animals.
  - Carnivores are flesh-eating animals.
  - Omnivores are both plant and flesh-eating animals.
  - Parasites are the animals that live on or inside the body of other animals to get food.
- Now, with the help of different teaching aids, teacher will explain the adaptive features for feeding in herbivores, carnivores, omnivores and parasites (as given in chapter).
- With the help of different teaching aids, teacher will explain adaptive features in animals for protection.
  - By showing the pictures/animations on zebra/grasshopper/chameleon in their respective surroundings, teacher will explain that these animals protect themselves either by merging with their surroundings (as zebra, grasshopper) or changing their colour according to the surroundings (as chameleon) without being noticed.
  - Teacher will explain that stick insect looks like a twig and hence is not noticed.
  - Many small fish move in groups making the shape of a large fish for protecting themselves from large fishes.
  - Deer run very fast to escape from being hunted.
  - Snail and tortoise protect themselves in their shells at the time of danger.
  - A porcupine projects its spines towards its predator at the time of danger.
  - A ray fish gives electric shock to its enemies to protect itself.

- Now, teacher will ask students to solve 'Checkpoint 2'.
- At last, teacher will make students revise the new terms given under the head 'Remember These Terms' and sum up the lesson by going through the points given under the head 'At One Go'.
- Now, teacher will help students to solve the questions given under the head 'Check Your Study'.

BOOST UP

- Teacher should display the pictures of animals and birds named in the chapter.
- Teacher should discuss the information given in the 'Knowledge Zone' under the head 'Adaptations in Animals for Feeding'.
- Students should be encouraged to collect pictures of different animals or birds and categorise them as herbivore, carnivore and omnivore.
- Students should be encouraged to watch programmes on animals broadcasted on Discovery and National Geographic Channels.

EXPECTED LEARNING OUTCOMES

The students know about

- different extinct animals.
- adaptive features of animals living in different habitats.
- adaptive features of animals for feeding different types of food.
- different groups of animals according to the food they eat.
- adaptive features of parasitic animals.
- adaptive features in animals for protection.

EVALUATIVE QUESTIONS

The teacher may ask the following questions for evaluating learning and understanding of students.

1. Why have some animals become extinct? Name some extinct animals.
2. What is adaptation?
3. What are terrestrial animals?
4. What are amphibians?
5. What are parasites?
6. What are omnivores?
7. How does snail save itself from its enemies?
8. How is a ray fish dangerous to its enemies?