Chapter 11

Animals are Diverse

"Animals aid us in our existence …
… human activities are moving them towards extinction."

Let's Learn

- ✓ Classification of Animals
- ✓ How animals survive
- ✓ Adaptation of animals based on habitat
- ✓ Adaptations for food
- ✓ Adaptations for protection
- ✓ Animals in danger

Jump Start

Observe any two animals in your surrounding. Note their eating habits, their body shape and the way they move.

Introduction

Like plants, animals too adapt themselves to their surroundings by developing special features or characteristics. These special characteristics enable animals to live comfortably and successfully in their surroundings. These special features or characteristics are called **adaptations** in animals.

Swini, the little sea turtle, was extremely upset and angry. Swini did not share her secret with Mother Turtle. She was waiting for Father Turtle to come home.

Father turtle: Swini, why are you so upset?

Swini: Father, I want to fly, like my friend Cuckoo. She sees so many beautiful things while flying.

Father turtle: Swini, each animal is different and can do different things.

Swini: Why father? Why can I not fly?

Father turtle: We are not a group of animals which can fly. Our body does not have the characteristics necessary for flying. Animals belong to different groups based on their characteristics or features.

Swini: Can animals really be grouped? Aren't we all just animals?

Father turtle: Yes, we are all animals but our human friends have classified us into groups based on our characteristics.

Swini: What does that mean?

Classification of Animals

Animals are divided into groups making it easier for us to study them. This division of animals into groups is called classification of animals. Animals can be classified on the basis of the presence or absence of a backbone and on the basis of body temperature.

Classification of Animals based on the Presence or Absence of a Backbone

Animals are divided into vertebrates and invertebrates based on the presence or absence of a backbone.

Vertebrates: Animals which have a backbone are called **vertebrates**. Fish, amphibians, reptiles, birds and mammals are vertebrates.

Fish: They live in water and swim with the help of fins. The body of a fish is covered with scales. They breathe in the oxygen dissolved in water, through special organs called gills. Sharks, catfish are examples of fish.

Amphibians: Animals which can live both on land and in water are called **amphibians**. Amphibians mostly breathe through their lungs when on land and through their moist skin when they are in water. Frogs and toads are amphibians.

Reptiles: They mostly live on land. The body is covered with scales. Lizards, snakes, crocodiles, turtles are reptiles. Reptiles breathe through their lungs.

Birds: Most birds can fly as they have feathers, very light bones and strong wings. Pigeons, ducks, geese are examples of birds. Birds breathe through their lungs. Some birds such as penguins, ostriches and kiwis cannot fly. These birds are called **flightless birds**.

Mammals: The body of mammals are covered with hair or fur. They have four limbs and breathe through lungs. The mother feeds her babies with her own milk.

Invertebrates: Animals which do not have a backbone are called **invertebrates**. Insects, worms, spiders, crabs, snails are invertebrates.

The body of an insect is divided into three parts: the head, the thorax and the abdomen. Most insects have six legs and can fly. The body of most insects is covered with a hard outer covering called chitin.

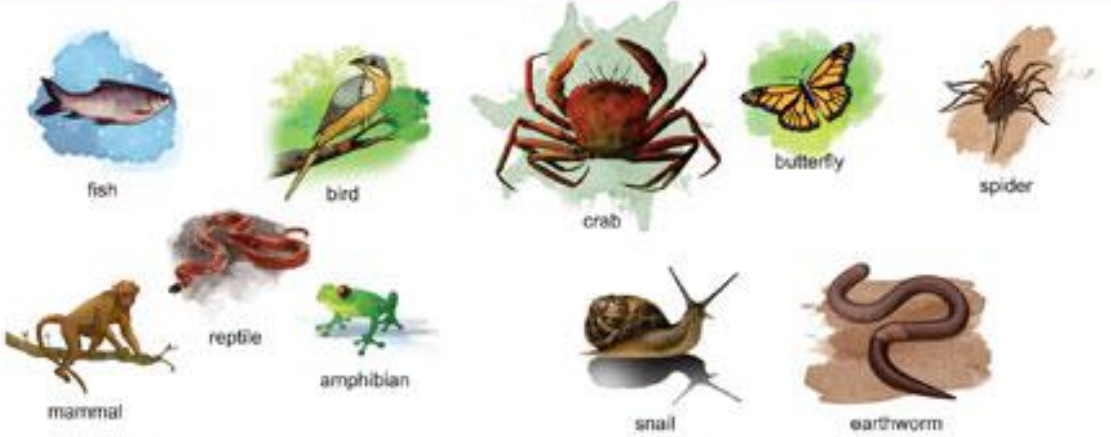

Fig 11.1: Vertebrates

Fig 11.2: Invertebrates

Swini: Father, that means that both me and Cuckoo are `vertebrates'.

Father turtle: That's correct, Swini.

Swini: Then, why can't I fly like the cuckoo?

Father turtle: Let me explain the classification of animals based on body temperature and then you will start noting the differences between cuckoo and yourself.

Classification of Animals based on Body Temperature

Animals can also be classified on the basis of their body temperature into cold blooded or warm blooded animals. The body temperature of some animals changes with the change in the temperature of the surroundings. These animals are called cold blooded animals. Fish, reptiles, amphibians are **cold blooded** animals.