7 Things Around Us

Prior Knowledge

In the previous classes, I have learnt that

- All things around us can be grouped into living and non-living things.
- There is immense diversity of living things on the Earth.
- Living things are natural.
- Non-living things are either natural or man-made.

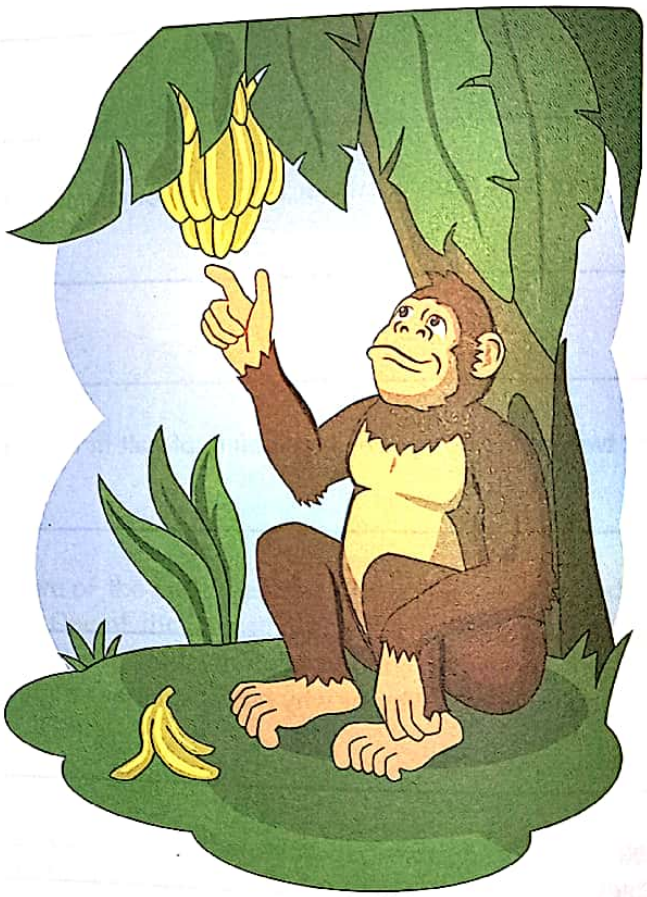
Learning Objectives

In this chapter, I will learn about:

- Characteristics of living things
- Habitat
- Biotic and abiotic components

Let's Get Going

Look at the given pictures. Mention three characteristics that are common to both the monkey and the banana plant.



1. _____
2. _____
3. _____

As studied in previous classes, things around us can be broadly grouped as **living things** and **non-living things.** Human beings, plants and animals are living things. Clouds, rocks, soil, chair and table are a few examples of non-living things.

Let us learn about the characteristics of living things and how do these characteristics make them different from non-living things.

CHARACTERISTICS OF LIVING THINGS

Characteristics of living things are as follows.

Structural Organization

Living things have a definite structural organization (Fig. 7.1).

All living things are made up of millions of cells.

The smallest unit of living things that is able to function independently is called a **cell.** For example, red blood cells.

A group of similar cells that perform the same function is called a **tissue.** For example, skin tissues.

A group of tissues that perform a particular function is called an **organ.** For example, stomach.

A group of organs that work together to perform a particular life process is called an **organ system.** For example, digestive system.

A living thing made up of one or more organ systems is called an **organism.** For example, human beings.

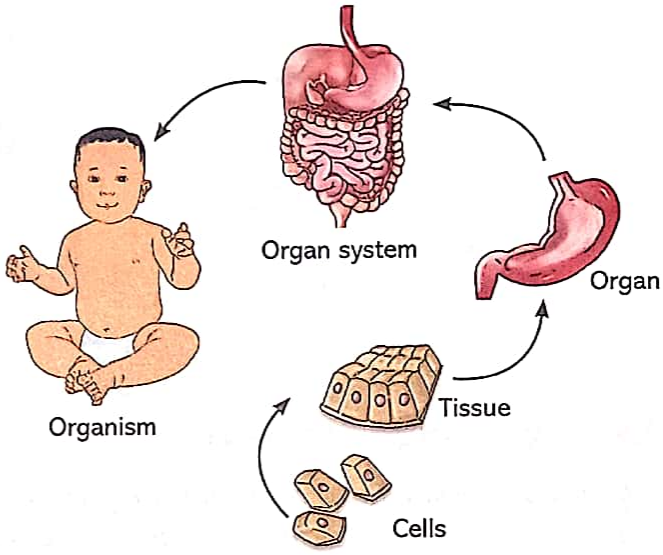


Fig. 7.1 Structural organization in humans

Depending on the number of cells, livings things are classified into two groups—unicellular and multicellular organisms.

Living things made up of a single cell are called **unicellular organisms.** *Amoeba and Paramoecium* are **unicellular organisms.** In these organisms, all life processes are carried out by a single cell.

Living things that are made up of several cells are called **multicellular organisms.** Human beings, dogs and houseflies are multicellular organisms.

Living Things Need Food

All living things need food for their survival. Food helps organisms to grow and provides energy to do various activities.

Plants can make their own food by a process called **photosynthesis.** So, plants are called **producers** or **autotrophs.**

Animals (including human beings) depend on plants and other organisms for their food. Therefore, animals are called **consumers** or **heterotrophs.** Non-living things and dead organisms do not need food.

Living Things Grow

All living things grow. Life begins from a single cell. The cell grows, enlarges in size and then divides to form new cells. The size of an organism increases with the increase in the number of cells. The growth of an organism occurs in different stages. A seed grows into a sapling and then into a large tree (Fig. 7.2). Animals and human beings grow from an infant stage to an adult stage (Fig. 7.3). Growth in living things is irreversible.

My Dictionary

Sapling: A young plant

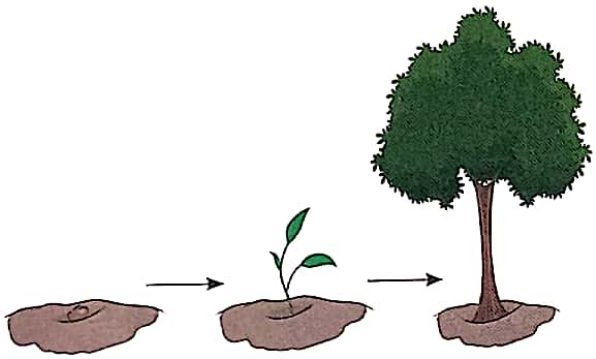


Fig. 7.2 Growth in plants

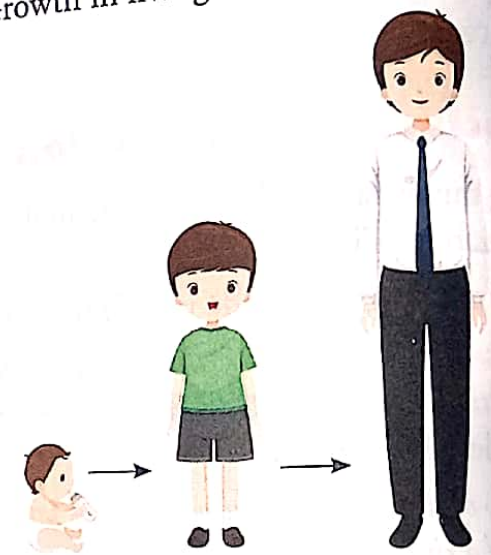


Fig. 7.3 Growth in human beings

Living Things Respire

The process by which living things utilize oxygen to release energy stored in the food eaten by them is called **respiration.**

Respiration and breathing are different. Breathing is a part of respiration.

The process of taking in oxygen and giving out carbon dioxide is called **breathing.**

During respiration, oxygen (breathed in) reacts with food and breaks it down to release energy stored in the food. Carbon dioxide produced during respiration is breathed out. Thus, respiration is an essential feature of all living things.

Different organisms have different organs for respiration. Most terrestrial animals respire with the help of lungs. Fish respire through **gills**. Earthworms breathe through their **moist skin**. Insects such as grasshoppers breathe through tiny holes called **spiracles** present at the sides of their body (Fig 7.4). Plants respire through tiny holes called **stomata** (singular: stoma) that are present on the underside of their leaves (Fig. 7.5).

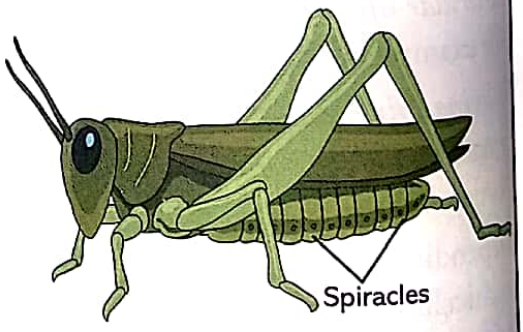


Fig. 7.4 Spiracles in a grasshopper

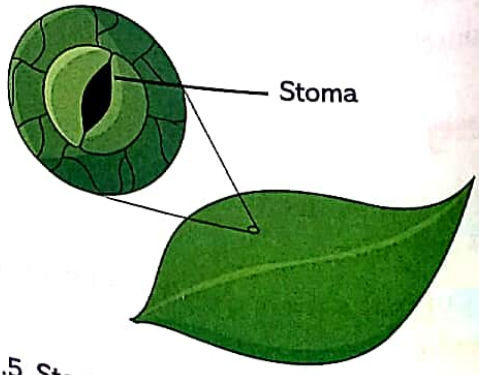


Fig. 7.5 Stoma present on the underside of a leaf