

Structure and Functions of a Plant

SPECIFIC OBJECTIVES

The students learn about

- different parts of a plant and their functions
- structure of a leaf and its functions
- flowers and their functions
- formation of fruits and seeds

TEACHING AIDS

Pictures/samples of an uprooted plant, plants having tap root and fibrous root; Tomato or ginger plant with tomato or ginger intact; **Pictures** of soft, weak stem, thin woody stem, hard woody stem; **Picture** showing parts of leaves, sample of papaya leaf (or any other leaf having broad lamina); **Picture/animation** on breathing in plant; **Pictures** of different flowers; **Pictures/animation** showing change of flower into fruit; **Pictures** or **samples** of cut-fruits showing one seed, few seeds and many seeds (as given in chapter)

LESSON PLAN

- Teacher will start the chapter with 'Warm Up' section by asking general questions on plants based on the previous knowledge of students. Teacher will help the students to fill in the section.
- Now, showing picture/sample of uprooted plant, teacher will explain that plants have two main parts—root and shoot.
- Showing pictures/samples, teacher will explain that roots are of two types, i.e., tap root and fibrous root.
- Showing the pictures/samples of plants having tap root, teacher will describe the features of tap root as given in chapter under the head 'Tap root'.
- Similarly, showing the pictures/samples of plants having fibrous root, teacher will describe the features of fibrous root as given in chapter under the head 'Fibrous root'.
- Now, with the help of teaching aids, teacher will explain the functions of roots as given in the chapter under the head 'Functions of roots'.
- Showing picture/sample of an uprooted plant, teacher will describe about the shoot of a plant that the part of plant which that grows above the ground is called shoot.
- Teacher will describe the parts of a shoot.

- Showing pictures, teacher will describe the stem and mention that stem can be soft, hard or weak and thin woody or hard woody. Teacher will also mention that trees have hard woody stems called trunk.
- Using teaching aids, teacher will explain functions of stem as given in the chapter under the head 'Functions of stem'.
- To test the understanding of students about the topic, teacher will ask them to solve 'Checkpoint 1'.
- Now, before starting on leaves, teacher will ask some simple questions to the students based on their previous knowledge.
- Now, showing a sample of papaya leaf or any other leaf with broad lamina, teacher will explain all the parts of leaf as given in the chapter under the head 'Structure of a leaf'.
- Teacher will explain the functions of leaves (as given in the chapter). Teacher will show animation/picture on how plants breathe through stomata.
- Now, before starting on flowers, teacher will ask some general questions from day-to-day life and show pictures of different flowers.
- Now, teacher will explain how flowers bloom and insects like butterflies come to flowers to suck their nectar. Teacher will also explain that most of the flowers shed their sepals and petals and change into fruits.
- Now, teacher will ask general questions on fruits and show picture/animation on how flowers change into fruits. Teacher will show the pictures of some cut-fruits (as mentioned in teaching aids) and explain that fruits contain seeds. Some fruits have one seed, some have few seeds while some others have many seeds.
- Now, teacher will ask the 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 chapter by going through points given under the head 'At One Go'.
- Teacher will also help students to solve all the exercises given under the head 'Check Your Study'.

BOOST UP

- Teacher should encourage the students to perform the activity given in the chapter under the head 'Functions of Roots'.
- Teacher should make arrangements to perform the activity given in the chapter under the head 'Leaves'.
- Students can be encouraged to collect the pictures of their favourite fruits and flowers.
- Students should be encouraged to collect seeds of different fruits, pack them into small sample bags and attach in their scrapebook.
- Teacher should arrange a study tour to show plants as are in nature such as plants having tap root, fibrous root; soft stem, hard woody stem, weak stem, plants of potato, radish, turnip, etc., flowers, fruits at their developing stage, etc.

EXPECTED LEARNING OUTCOMES

The students know about

- different parts of plants and their functions

- and can differentiate between tap root and fibrous root
- and can identify soft stem, weak stem, thin woody and hard woody stems
- parts and functions of leaves
- functions of flower and understand that fruits develop from flowers

EVALUATIVE QUESTIONS

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

1. What are the two main parts of a plant?
2. What is root of a plant?
3. What is shoot of a plant?
4. Where are leaves, buds, flowers and fruits placed on a plant?
5. Where is food made in a plant?
6. How do plants breathe?
7. How are fruits and seeds formed?