

Chapter 1

Transport of Food and Minerals in Plants

LESSON PLAN

SPECIFIC OBJECTIVES

The students will learn about

- ❖ transport of materials in living beings
- ❖ transport system in plants
- ❖ transpiration
- ❖ importance of minerals to plants

Teaching Aids

Pictures/charts/models/animation on xylem elements, phloem elements; transport of water and minerals in plants; adaptation in root hair for water absorption; osmosis; path of water through root cortex to xylem vessels; importance of transpiration

Teaching Strategy

- ❖ Teacher will start the chapter by defining the transport of materials in living beings.
- ❖ Teacher will discuss the ways of transport of materials and materials which are transported in single-celled organisms, simple multicellular organisms and complex organisms.
- ❖ Now, teacher will explain transport system and its functions in plants.
- ❖ Teacher will discuss different ways of absorption of water and minerals and their transport in plants by demonstrating Activities 1, 2, 3, 4 and 5.
- ❖ Now, teacher will define transpiration, factors affecting transpiration and importance of transpiration to plants.
- ❖ Teacher will demonstrate Activity 6.
- ❖ Now, teacher will ask students to solve 'Check Point 1'.
- ❖ Teacher will explain types of minerals, their importance and deficiency in plants.
- ❖ Now, teacher will ask students to solve 'Check Point 2'.
- ❖ At last, teacher will sum up the lesson by going through the points given under the head 'Wrapping It Up'.
- ❖ Teacher will finally help students to answer the questions given under the head 'Test Yourself'.

Boost Up

- ❖ Teacher can help students to perform the activities given in chapter.
- ❖ Teacher can make students revise new terms given under the head 'Know These Terms'.
- ❖ Teacher can encourage students to learn the facts given under the head 'Something More'.
- ❖ Teacher can show animations related to the topics taught, if possible.

Expected Learning Outcomes

The students understand and know:

- ❖ ways of transport of materials in simple and complex organisms
- ❖ transport system in plants
- ❖ methods of absorption of water and minerals in plants
- ❖ absorption of water and minerals by root hair
- ❖ cell-to-cell movement of water in plants
- ❖ ascent of sap and root pressure
- ❖ transpiration, factors affecting transpiration and its importance
- ❖ macrominerals and microminerals, their role and deficiency symptoms in plants

Evaluative Questions

The teacher should ask the following questions to evaluate the students:

1. What is transport of materials?
2. What is transport system in plants made up of?
3. Name the methods of absorption in plants.
4. What is the difference between diffusion and osmosis?
5. What is ascent of sap?
6. What is transpiration?
7. Name some micro- and macro nutrients.
8. What are the deficiency symptoms of nitrogen in plants?