

## LESSON PLAN

### SPECIFIC OBJECTIVES

- The students will learn about
- ✧ reproduction and its importance for living beings
  - ✧ modes of reproduction in plants
  - ✧ mechanism of sexual reproduction
  - ✧ artificial pollination
  - ✧ seed dispersal
  - ✧ germination of seed

### TEACHING AIDS

Pictures/charts/models/animations on budding in yeast, binary fission in a bacterium, fragmentation in *Spirogyra*, *Rhizopus* showing its sporogonium; root tubers of sweet potato and *Dahlia*, stem tuber of potato, rhizome of ginger, bulb of onion, vegetative propagation in strawberry, *Bryophyllum*, stem cutting in rose, layering in jasmine, grafting; tissue culture; male and female parts of flower; types of pollination, germination of pollen grains on stigma; seeds of maple, fruits of coconut and *Xanthium*; germination of seed.

### LESSON PLAN

- ✧ Teacher will start the chapter by going through the points given in 'Know these points before you start' section.
- ✧ Teacher will discuss the process of reproduction in plants and its importance.
- ✧ Teacher will discuss various modes of reproduction in plants, i.e., asexual reproduction, vegetative propagation and sexual reproduction.
- ✧ Teacher will discuss the process of budding in yeast, fission in bacteria, fragmentation in *Spirogyra* and spore formation in *Rhizopus*.
- ✧ Now, teacher will discuss vegetative propagation and its natural as well as artificial methods.
- ✧ Teacher will explain advantages of vegetative propagation in plants.
- ✧ Teacher will ask students to solve Check Point 1.
- ✧ Now, teacher will explain sexual reproduction in plants.
- ✧ Teacher will discuss the mechanism of sexual reproduction in plants.

- ✧ Teacher will explain the process of pollination and its types and agents of pollination.
- ✧ Now, teacher will discuss the process of fertilisation and formation of fruit and seed in plants.
- ✧ Teacher will explain artificial pollination in plants, its purpose and advantages.
- ✧ Now, teacher will discuss the dispersal of seeds, agents of dispersal, its need and advantages to the plants.
- ✧ Teacher will describe the process of germination of seeds.
- ✧ Now, teacher will ask students to solve Check Point 2.
- ✧ Teacher will make students revise the new terms given under the head 'Know These Terms'.
- ✧ Finally, teacher will help students to solve the questions given in exercises under the head 'Practice Time' and 'Think Zone'.

### BOOST UP

- ✧ Teacher should demonstrate and explain activities given in the chapter.
- ✧ Teacher should discuss the information given under the head 'Something More'.
- ✧ Teacher should discuss the conversation of Annu and Mannu given in between the topics.
- ✧ Teacher should encourage students to watch Discovery, National Geographic and Animal Planet channels to know more about plants and animals.
- ✧ Teacher should make arrangement to demonstrate the spores of *Rhizopus* under a microscope.
- ✧ Students should be encouraged to observe the natural and artificial methods of vegetative propagation in plants around them.
- ✧ Students should be encouraged to collect pictures of various flowers, their agents of pollination, mode of fruit and seed dispersal and pictures of seeds.

### EXPECTED LEARNING OUTCOMES

The students know about

- ✧ reproduction, its need and importance in living beings.
- ✧ asexual, sexual and vegetative modes of reproduction in plants.
- ✧ different forms of asexual reproduction.
- ✧ natural and artificial methods of vegetative propagation.
- ✧ pollination, its types and agents.
- ✧ formation of fruit and seed, dispersal of seeds by various agents and germination of seed.

### EVALUATIVE QUESTIONS

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

1. Define reproduction.
2. What are the modes of reproduction in plants?
3. What is the difference between layering and grafting?
4. Name the male and female parts of a flower.
5. What are the steps in sexual reproduction in plants?
6. Name the agents of pollination.
7. What is meant by fertilisation?