

New Science Power 4

Food Making in Plants

1

SPECIFIC OBJECTIVES

- The students learn about
- ❖ plants as the only source of food on the earth
 - ❖ structure of a leaf
 - ❖ food making by plants and its uses
 - ❖ some uncommon plants
 - ❖ energy flow in living things
 - ❖ relationship between plants and animals

TEACHING AIDS

Picture/chart/animation/sample of a herbivore eating plants, a carnivore eating an animal, man eating vegetarian and nonvegetarian food; A broad leaf (papaya, banyan, etc.), inside structure of a leaf, process of photosynthesis; Pitcher plant, mushroom, croton, coleus, cactus, etc.; Interdependence of plants, animals and man.

LESSON PLAN

- ❖ Teacher will start the chapter by asking some general questions to the students based on their previous knowledge about plants.
- ❖ Teacher will explain that plants make their food themselves and leaves are the site of food making in plants.
- ❖ Now, showing picture/sample of a green leaf, teacher will explain its features.
- ❖ Teacher will highlight the points that green colour of leaves is due to a green pigment called chlorophyll.
- ❖ With the help of picture/chart, teacher will explain the internal structure of leaf.
- ❖ Teacher will tell that leaves bear tiny openings called stomata through which plants breathe air in and out.
- ❖ Now, teacher will define photosynthesis and then with the help of picture/chart/animation, explain how plants make their food.

- ❖ Teacher will also explain the use of manufactured food for plants.
- ❖ To check the understanding of students about chapter, teacher will ask students to solve 'Checkpoint 1'.
- ❖ Now, with the help of teaching aids, teacher will explain that there are some plants that have some special features.
 - **Insectivorous plants:** Teacher will tell the features of pitcher plant and Venus flytrap and explain how they catch their prey.
 - **Non-green plants:** Teacher will explain that there are some non-green plants because they lack chlorophyll. They are called fungi. Teacher will explain that fungi cannot make their food. They take their food from dead and rotting matter.
 - **Plants with leaves other than green colour:** Teacher will explain with examples that some plants have pigments of other colours along with chlorophyll. They give yellow, pink or purple colour to leaves.
 - **Plants with no leaves or Desert plants:** Teacher will explain features of desert plants and with the help of teaching aids will show that the stem of cactus becomes green and its leaves change into spines. These features help it to survive in desert.
- ❖ Teacher will explain with the help of teaching aids that the energy flows from the sun to green plants and then to animals and human beings.
- ❖ Now, with the help of teaching aids, teacher will explain the relationship between plants and animals that plants give food to eat and oxygen to breathe while in turn, animals release carbon dioxide which plants take for making their food. This makes a balance in nature.
- ❖ Now, teacher will ask students to solve 'Checkpoint 2'.
- ❖ At last, teacher will make students revise the new terms given in 'Science Vocabulary' and sum up the lesson by going through the points given in 'Wrapping it up'.
- ❖ Now, teacher will help students to solve the questions given in 'Exercises'.

BOOST UP

- ❖ Teacher should demonstrate and explain activities given in the chapter.
- ❖ Teacher should discuss the conversation of Annu and Mannu given in bubbles in between the topics.
- ❖ Teacher should discuss the information given under the head 'Knowledge Desk'.
- ❖ Teacher should help students to find the answers of questions given in 'Think Zone'.
- ❖ Teacher should also discuss the facts given in 'Interesting Information' section.
- ❖ Teacher should take students on study tour and show them plants in the natural habitat.
- ❖ Students should be encouraged to watch Discovery and National Geographic Channels.

EXPECTED LEARNING OUTCOMES

The students

- ❖ understand that plants are the only source of food on the earth.
- ❖ know about structure of leaf.
- ❖ know about food making by plants, its uses to plants.

- ❖ learn features of insectivorous and non-green plants; plants with purple, yellow, pink or red-coloured leaves and desert plants.
- ❖ energy flow in living things.
- ❖ understand the relationship between plants and animals.

EVALUATIVE QUESTIONS

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

1. What is the source of food for all animals?
2. What is the flat green part of a leaf called?
3. Which tubes carry water in plants?
4. Which tubes carry food in plants?
5. Why are leaves green in colour?
6. What are stomata?
7. In which form do the plants make food?
8. In which form is the food stored in plants?
9. What is the use of carbon dioxide to the plants?