



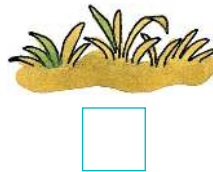
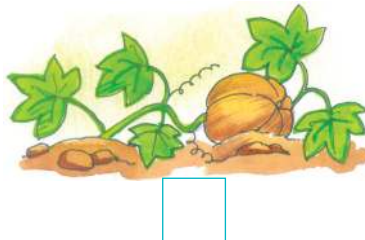
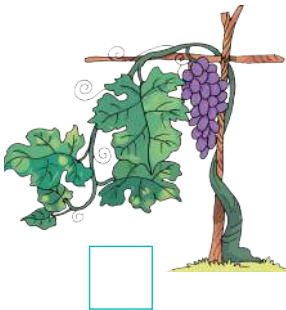
Parts of a Plant

- Become familiar with the parts of a plant and their functions
- Understand the importance of plants
- Know what seed germination is



WARM-UP

1. Identify the following plants. Write H for a herb, S for a shrub, T for a tree, CL for a climber and CR for a creeper.



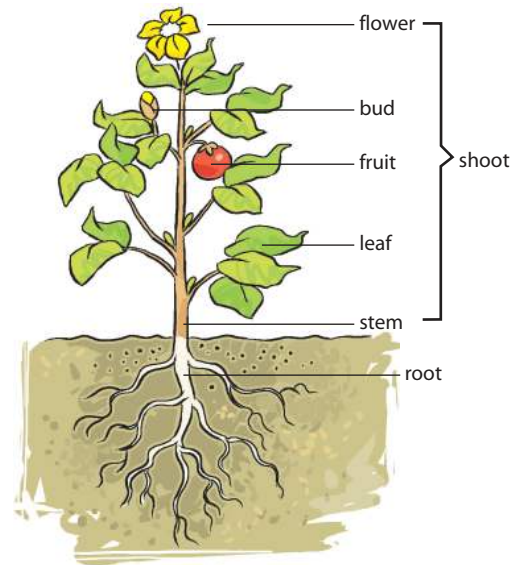
A PLANT HAS DIFFERENT PARTS

Our body has different parts such as hands, legs and head. In the same way, a plant also has different parts. All these parts work together to help the plant live and grow.

Observe the parts of a plant in the picture shown alongside. A plant's body is divided into two parts.

1. **Shoot.** It is the part of a plant above the ground. The stem, branches, leaves, buds, flowers and fruits together make up the shoot.
2. **Root.** The part of a plant which is under the ground is called the root.

Each part looks different and plays an important role in the life of the plant.



▲ parts of a plant

Root is an important part of a plant.

Roots can have different shapes and sizes. Roots are of two main types—**tap root** and **fibrous root**.

Tap Root In this type, one main root grows from the end of the stem, deep into the soil, and many small, thin side roots grow from the main root. For example, hibiscus, bean and mustard have tap roots.



▲ tap root

Fibrous Root In plants such as grass, rice, wheat and onion, there are several roots of different sizes. All of them are bunched together and attached to the base of the stem.



▲ fibrous root

Functions of Roots

1. Roots fix the plant to the soil. Without the root, a plant would fall to the ground.
2. Roots absorb water and salts from the soil. They then send these to the other parts of the plant.
3. Some roots, such as those of carrot, radish and beetroot, store food in them. We eat such roots.



▲ carrot



▲ radish



▲ beetroot

A1

SHOOT

Shoot is the part of the plant growing above the ground. It consists of the stem, branches, leaves, buds, flowers and fruits.

Stem

The stem is the main part of the shoot. Branches, leaves, buds, flowers and fruits grow on the stem. Plants have different kinds of stems.

A coriander plant has a soft and green stem.

A banyan tree or a *neem* tree has a hard and very thick stem called the **trunk**.

Some plants have very thin and weak stems. Such plants require support to grow. They are called climbers. *Bougainvillea* and money plant are climbers.

The stems of potato, onion and ginger grow below the soil. They are called underground stems. They store food. We also eat these stems.



▲ coriander plant



▲ neem tree



▲ Bougainvillea



▲ potato plant

Functions of Stems

1. Stems give support to the plants.
2. Stems carry water from the roots to the leaves and then carry the food made by the leaves to all parts of the plants.
3. The stems of some plants, such as sugarcane, store the food made by the plant. A2



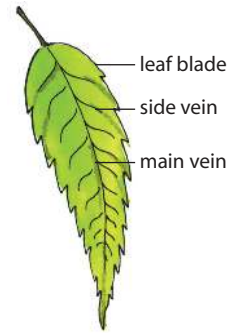
1. Give one example for each of the following:

- | | |
|----------------------------|-------|
| a. a plant with tap root | |
| b. a plant with thick stem | |
| c. a root that stores food | |
| d. a stem that stores food | |

Leaf

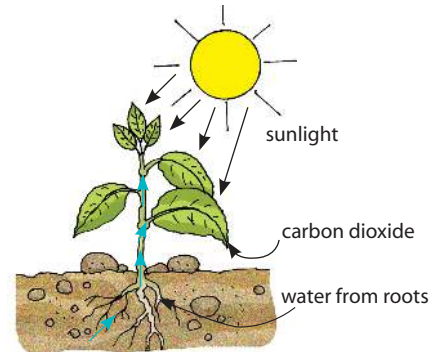
The leaf is the most important part of the shoot.

Observe a leaf closely. The flat part of the leaf is called the **leaf blade**. The upper and lower sides of a leaf blade are slightly different in colour. While the upper side is smooth and dark, the lower side is rough and light in colour.



Running through the middle of the leaf is a thin tube. This is called the **main vein**. There are other smaller tubes that run from the main vein and are called **side veins**. They carry water to all parts of the leaf.

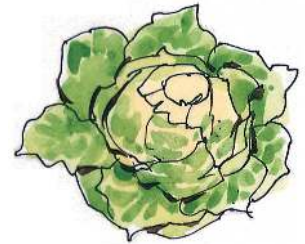
The lower side of the leaf has many tiny pores called **stomata**. Air enters the leaf through the stomata.



Functions of Leaves

1. Leaves are called the **food factory** of a plant because they prepare food for the whole plant. The leaves have a green coloured substance called **chlorophyll** that helps them to prepare food. Leaves prepare food with the help of water and a gas called carbon dioxide in the presence of sunlight and chlorophyll. They get water from the soil and carbon dioxide from the air. This is called **photosynthesis**.
2. While making food, leaves give out **oxygen**. All living things, including plants, breathe in oxygen to stay alive. Stomata on the leaf help the plant to breathe.
3. Leaves of certain plants like cabbage and spinach store food. We eat these as vegetables.

▲ leaves make food for the plant

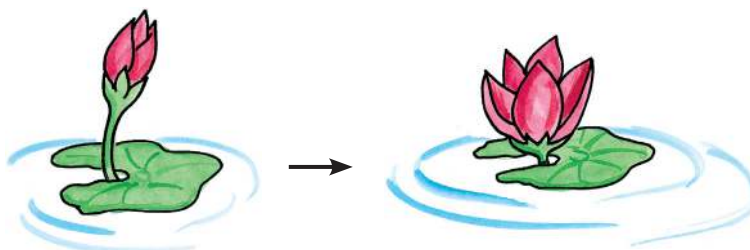


▲ cabbage

A3

Flowers, Fruits and Seeds

Flowers grow from small buds on the stem. Flowers are of different colours, shapes and sizes. Most flowers have a specific scent. Can you recognise a rose from its smell? Yes/No



▲ Flowers grow from small buds on the stem.

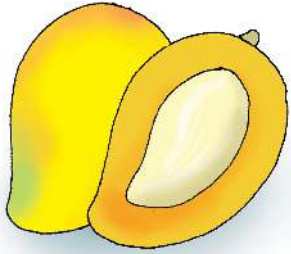
Some flowers grow into fruits. Which is your favourite fruit?



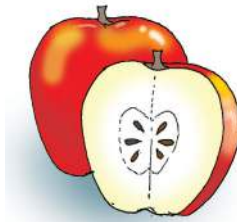
▲ *Some flowers grow into fruits. Fruits have many seeds.*

Most of the fruits have seeds inside them.

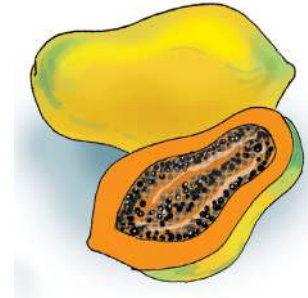
A4



▲ *A mango has only one seed.*



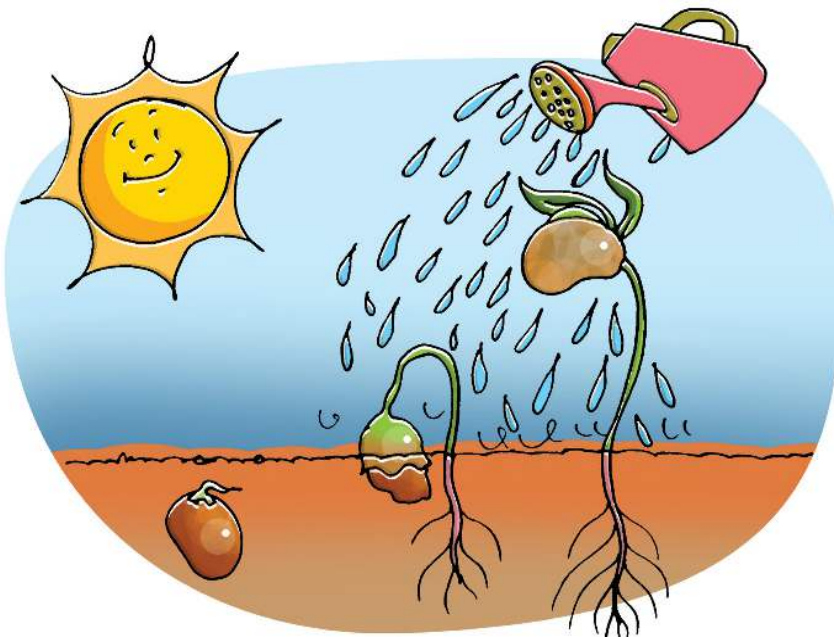
▲ *An apple has a few seeds.*



▲ *A papaya has many seeds.*

A seed contains a baby plant inside it.

When a seed is planted in the soil and gets water, air and sunlight, it grows into a new plant. The process of development of a new plant from a seed is called **germination**.



▲ *germination of a seed*



Info Bits

The seeds that we can eat are called **edible seeds**. For example, we eat rice grains and *rajma* (kidney beans).

The seeds that we do not eat are called **non-edible seeds**. For example, we do not eat the seeds of apple as they are poisonous.

WHAT PLANTS DO FOR US

Plants are very useful for us. They give us many things.

1. Plants are the primary source of food for us.
2. The roots of the plant hold soil particles and prevent wind or water from carrying away soil.
3. Plants help to beautify our surroundings.
4. Plants can remove some of the harmful gases that pollute air. When we have more plants around us, we will have cleaner air to breathe.

tap root: a root in which small, thin branches grow from a main root

fibrous root: roots in which several roots of different sizes bunch together at the base of the stem

trunk: the main stem of a tree

leaf blade: the flat part of the leaf

veins: tubes running through the leaf

photosynthesis: the process by which leaves make food for the whole plant with the help of water and carbon dioxide in the presence of sunlight and chlorophyll

germination: the process of development of a new plant from a seed



- Plants have two main parts—the shoot and the root.
- Tap root and fibrous root are the two main kinds of roots.
- Roots fix the plant to the soil and absorb water and salts.
- The shoot consists of the stem, branches, leaves, buds, flowers and fruits.
- Leaves are called the food factory of a plant.
- The stem supports the plant and carries water and food.
- Flowers change into fruits. Most fruits have seeds inside them.
- Seeds grow into new plants.



REVIEW ZONE

A Tick (✓) the correct answer.

- Which of the following grows from small buds on the stem?
a. root b. flower c. leaf d. seed
- Which of following is an example of a fibrous root?
a. bean b. hibiscus c. mustard d. onion
- Which of following is a climber?
a. neem b. ginger c. money plant d. coriander
- Which one of the following fruits has only one seed?
a. mango b. guava c. banana d. papaya



B Choose the most suitable word from the following to fill in the blanks.

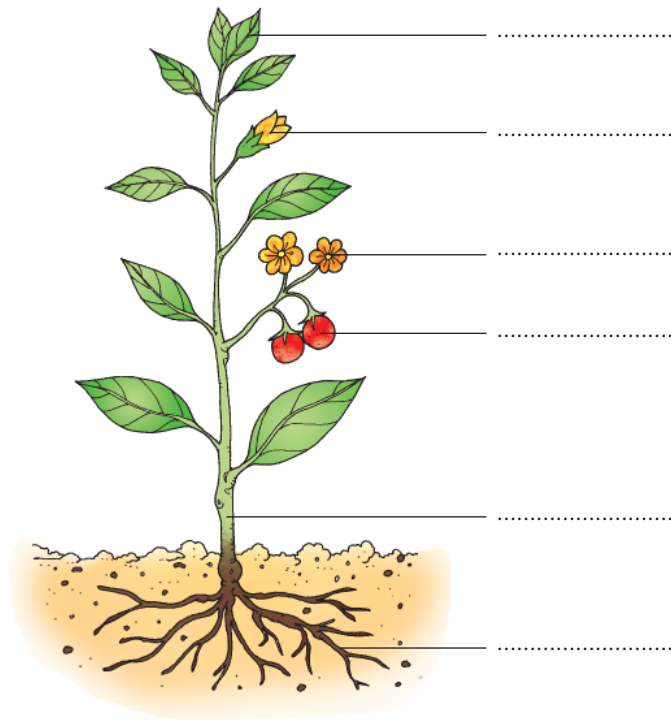
chlorophyll trees one climbers underground fibrous

- A tap root has main root.
- The rice plant has roots.
- Plants which need support to grow are called
- The potato plant stores food in it's stem.
- Leaves are green in colour because of a substance called

C State whether the following statements are TRUE or FALSE.

- Roots of a plant grow under the ground.
- A banyan plant has a very hard stem.
- The leaf fixes the plant to the soil.
- Plants can make food at night.
- A seed germinates into a new plant.

D Name the different parts of a plant.



E Who am I?

1. I am the flat part of a leaf.
2. I help a leaf to take in air.
3. I am the gas that plants use to make food.
4. I grow from buds.
5. I am found inside a fruit. I grow into a new plant.

F Answer the following questions.

1. How do roots help a plant?
2. Write two functions of a stem.
3. Why is a leaf called the food factory of a plant?
4. What is germination? What does a seed require to germinate?
5. What are the things needed for a plant to make food?



HOTS CORNER

1. Why do trees have long branches?
2. Hema likes eating potatoes and cauliflower while Hitesh likes eating lady's finger and onions. Name the parts of the plant from which these food items are obtained.



ENHANCE YOUR LIFE SKILLS

1. You must have noticed flowers growing in the parks or pots around you. Look at the pictures and name the flowers.



a. H _ B _ S _ U _



b. L _ L _



c. P _ N _ Y



ONLY A CLICK AWAY

1. To see pictures of some edible seeds you can go to the following link.
<http://www.pixmac.co.uk/pictures/edible+seeds>



ACTIVITY BAG

1. Observing Roots

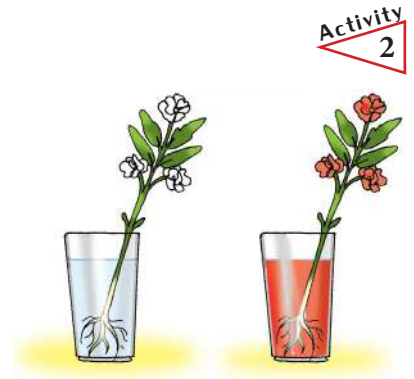
Pull out a grass plant and buy a carrot which has leaves from the market. Observe their roots carefully. Draw the roots that you see.

Activity
1

2. Roots Carry Water to Different Parts of the Plant

Take a branch with a white petunia or a white rose. Dip this branch in a glass containing coloured water. Observe after a few hours. What happens to the colour of the flower?

The flower changes colour as the stem absorbs the coloured water and carries it up to the flower.



Activity
2

3. Sunlight is Necessary for Plants

Keep a plant in a dark room. After a few days, the leaves of the plant will start yellowing. The plant will die after a few more days. This is because plants cannot make food without sunlight.

Activity
3

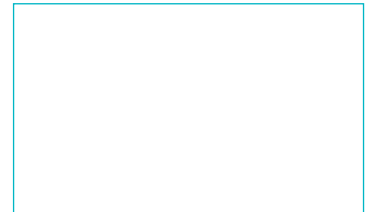
4. Study of a Fruit

Bring any one seasonal fruit to the class. Peel it or slice it as required. Study its parts.

Does it have an outer peel?

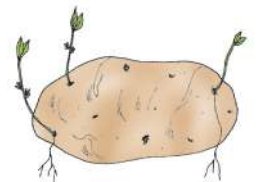
How many seeds does it have?

Draw the fruit in the box given here.



Activity
4

5. Take a potato. You will find some markings called 'eyes' on it. Now place the potato in a dish. Sprinkle water over it. Keep it in a warm place. Keep sprinkling a little water over it every day. Soon you will find tiny plants with leaves coming out of the 'eyes'.



6. Do you know some plants can grow from leaves? Take a leaf from a *Bryophyllum* (Hindi name: *Pathar chat*) plant. Plant it in a pot containing soil. Water it every day. You will find the leaf sprouting into a new plant soon.

Teacher's Notes

- Teacher can bring a plant, with clearly identifiable parts, to class and point out all the parts to the students. Mention the function of each part too.
- Teacher can organise a walk in the school garden or a nearby park to show the variations in the leaves, flowers and sizes of various plants.
- Cut open a fruit in the class to show the seeds present inside it.
- Answers to Question Drill: 1. a. bean; b. neem; c. radish; d. sugarcane.