

3 Plants



Let's Find Out

1. What are the different types of plants around us?
2. Where do plants grow?
3. How are plants useful to us?
4. Which plants were not grown in the past but are now cultivated in our country?
5. Which plants do not grow in our country but their fruits and vegetables are eaten by us?

Plants growing around us

How many plants have you seen?

Do you feel they are different from one another?

Read this poem and sing it with your friends.

Plants are small,
plants are big
Be it little oxalis
or a large fig.

Some grow in water
and some on land,
Some on hills
and some on sand.

Some are soft,
Some have wood
Animals need them
As they give food.

There are a variety of plants growing around us. Plants may be big trees, dense shrubs, soft herbs or delicate climbers and creepers. Let us see how these plants are different from one another.

Trees

Trees are usually big and tall. They have a thick and hard stem called **trunk**. Many branches grow from the trunk. These branches bear many leaves. Some big trees like banyan and *peepal* have a very long life. They live for thousands of years. **Banyan tree** is our national tree.



Banyan tree



Peepal tree



Papaya tree



Pomegranate tree

Some trees like papaya and pomegranate are not very big.

Shrubs

Shrubs are bushy plants. Their stem is divided into many branches. Shrubs live for many years. *Henna*, rose and China rose are shrubs.



Henna (Mehendi)



Rose



China rose

Herbs

Small plants with soft stems are called herbs. These plants usually have a short life. Most of them live for a few months only. Coriander, petunia and spinach are herbs.



Coriander (Dhania)



Petunia



Spinach (Paalak)

Climbers and Creepers

Climbers are plants with delicate stems. They cannot stand straight on their own. They take the support of other plants to stand. Money plant and grapevines are climbers.



Money plant



Grapevine



Pumpkin

Creepers like pumpkin and watermelon spread their weak stems on the ground.

Activity 1

Give two names for each of the following categories of plants.

Trees _____

Shrubs _____

Herbs _____

Climbers _____

Creepers _____



Where do plants grow?

Plants are found almost everywhere. Forests are full of plants. We find plants on plains, hills, deserts and even in ponds, rivers and oceans.

Most of the trees like pines and firs growing on hills are cone-shaped. They have thin leaves. In these areas snow fall is common. The shape of the trees and leaves help snow to slide down them easily.

Trees like acacia (*babul*) and date palm grow in deserts. These plants need very little water to grow. They are usually thorny and short in height. Different types of cacti having thorny and fleshy body also grow in deserts.

Some plants like coconut palm and betel nut palms grow along the sea coasts.



Pine tree



Fir tree



Coconut palm



Betel nut palm

Plants like lotus and water lily need a lot of water. They grow in ponds and lakes.

Lotus flower is very beautiful. It is the national flower of our country.



Seaweeds

Large number of seaweeds grow in the oceans. They are rich in nutrients. Many sea animals like seals and turtles feed on them. People of Japan, China and other countries living near sea coasts use seaweeds as their food.



Lotus



Water lily

Activity 2

Match the following plants with the places where they grow.

Pine tree	Oceans
Lotus	Sea coasts
Cactus	Hills
Coconut palm	Deserts
Seaweeds	Ponds

How are plants useful to us?

Plants are useful to us in many ways.

1. Plants give us fresh air to breathe. Living things breathe out carbon dioxide. Plants use this gas to make food. While doing so, they give off oxygen, which we all breathe in.
2. Plants give us food.
Most of our food comes from plants. We eat them raw or cook them before eating. We get:
 - i. Cereals like wheat, rice, maize

Do you know!



Some plants cannot make their own food. They are not green in colour. You must have seen bread mould growing on stale bread and mushrooms growing on decaying leaves during the rainy season. They get their food from dead and decaying plants and animals.

- ii. Pulses like *moong dal*, *masoor dal*
- iii. Vegetables like potatoes, tomatoes, brinjal, peas, ladyfinger
- iv. Fruits such as mangoes, apples, bananas
- v. Spices like cardamom, cloves, coriander
- vi. Oils from plants like mustard, coconut, palm, sunflower

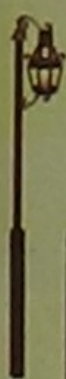
3. Plants give us clothes. We use the fibres of cotton plant to make



4. Some plants are used as medicines. Plants like eucalyptus, turmeric (*haldi*), *neem*, *tulsi*, mint, *ajwain*, garlic, ginger, aloe vera and lemon are used as medicines. They help us get rid of various diseases.

5. We get perfumes from plants. Sweet smelling flowers like rose, jasmine, lavender and other parts of plants are used in making perfumes.
6. Plants give us wood. Just look around your house for the things made of wood. Beds, sofa, dining table, chairs, doors, windows, kitchen cabinets are all made of wood. Even the paper of your books and notebooks are made of wood. So, you should use paper carefully as more paper you use means more trees have to be cut down.
7. Plants make places look beautiful. Plants with colourful leaves and flowers are grown in the gardens and lawns of houses. Some plants can be grown inside the house or in the *verandahs*. They are called indoor plants. Money

Do you know!



Plants like Pitcher plant, Venus flytrap, Sundew eat insects and other small animals that get attracted to them.



Pitcher plant



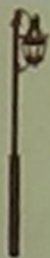
Venus flytrap



Sundew

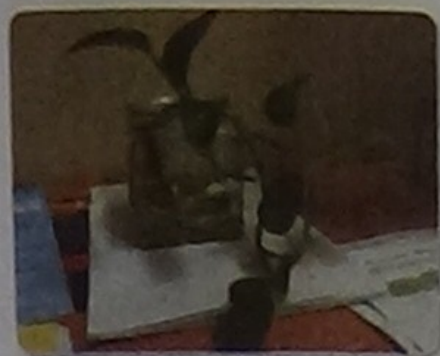
cotton clothes. Fibres of flax plant are used to make linen. Fibres of jute plant are used for making jute bags and ropes.

Do you know!



In the Indian system of medicine—the Ayurveda—almost all the medicines are prepared from plants.

plant, ferns, palms and *dracaenas* are some of the indoor plants that add to the beauty of our houses and offices.



Money plant



Dracaena



Palm

Activity 3

Write the names of ten things in your house that we get from plants.

food, oxygen, wood, oil, medicines, rubber
cotton, paper

Some plants that we have recently started growing

Baneet's grandfather likes to eat kinnows. He feels that they taste better than oranges. He says that kinnows were not grown in this area when he was a young boy. Now they are grown in many places and sold all over the country.



Kinnows



Olives

Nowadays, olives are also grown in parts of Rajasthan.

Which plants do not grow in our country?

Look at the following vegetables and fruits that we buy from the market. They are not grown in our country. These are imported from other countries.



Chinese cabbage
Vegetable from China



Dragon fruit
Fruit from Thailand



Kiwi
Fruit from New Zealand




Red Pears
Fruit from America

Let's Revise

1. There are different types of plants growing around us.
2. Plants may be trees, shrubs, herbs, climbers and creepers.
3. Plants grow on almost all the places. They grow on the plains, hills, deserts and in water.
4. Plants are useful to us in several ways. We get food, clothes, medicines, wood, and fresh air from the plants.
5. We have started growing many new and useful plants in our country.
6. We eat many vegetables and fruits that we do not grow. We import them from other countries.

Add to your vocabulary

- Ayurveda — old Indian practice of treating diseases using plants
Imported — things brought from other countries



Exercises

A. Select the correct option.

- a. Our national tree is _____.
i. banyan ☒ ii. peepal iii. mango iv. pine
- b. _____ is a tree that grows in deserts.
i. banana ii. papaya iii. neem iv. babool ☒
- c. Henna (Mehendi) plant is a _____.
i. tree ii. climber iii. shrub ☒ iv. creeper
- d. Linen clothes are made from the fibres of _____.
i. cotton plant ii. flax plant ☒ iii. jute plant iv. coconut plant
- e. Dragon fruit is imported from _____.
i. America ii. China iii. Indonesia iv. Thailand ☒

B. Name a plant that:

- a. Climbs on other trees
- b. Grows in water
- c. Is a very big tree
- d. Bears beautiful flowers
- e. Is cone-shaped

Money plant
lotus
Banyan
Rose
Pine

C. Name four indoor plants.

Money plant, ferns, palms, dracaena

D. Answer the following questions.

- a. Which type of plants are found in deserts?
- b. Name two plants that eat insects.
- c. Why are most of the trees on hills cone-shaped?
- d. Name the plants that are found in the oceans.
- e. Where would you find lotus plant growing?

HOTS

Why are moulds and mushrooms not able to make their own food?

LET'S DO

Take a pot filled with soil. Sprinkle a few fenugreek (*methi*) seeds on the soil and water the pot every morning. Watch the seeds grow into small plants. When the plants bear a good number of leaves, pluck a few of them. Grind the leaves and add some salt. Knead flour with the paste of leaves. Ask your mother to make *parathas* or *puries* with this flour.

Encourage your family members to make a kitchen garden and grow food plants in it. If there is no place for a kitchen garden, you can grow plants like beans, tomatoes, coriander and mint in pots.



Project Work

Make a list of ten fruits available in the fruit shop near your house. Find out the following things related to the fruit and write down in your project file.

1. Date when you went to the shop
2. Name of the shop and address
3. List of fruits
4. For each of the ten fruits write:
 - i. Name of the fruit with a photograph or a drawing
 - ii. Where did the shopkeeper purchase it from?
 - iii. Where is it grown? (_____ city of India / imported from _____)
 - iv. On what type of plant does it grow? (tree/shrub/herb/climber/creeper)
 - v. How does it taste? (very sweet/sweet/sweet sour/sour)
 - vi. How much does it cost? (in ₹ per kilogram)

4 Leaves



Let's Find Out

1. How many different types of leaves are there around us?
2. Why are leaves so important for the plants?
3. When do trees shed their leaves?
4. How do leaves change to manure in a compost pit?
5. What are the uses of leaves?
6. How are different things decorated with leaf motifs?

Priya and Baneet were making leaf impressions in their art books. They had collected leaves from different plants. The leaves were of different shapes and sizes. There were big leaves, small leaves, round leaves, oval leaves, long leaves and thin leaves. "Wow! What a variety of leaves we have got!" said Priya.



Leaves of different plants are of different shapes, sizes, colour and smell.

Look at the different shapes of leaves. We can identify a particular plant just by looking at its leaf.



Peepal



Grapevine



Neem



Tulsi



Grass

Observe the different sizes of the leaves. Some are very big like the leaves of palms and banana. Some are very small like the leaves of acacia, mimosa, black gram (*chana*).



Palm leaves



Mimosa
(Touch-me-not)



Acacia

Do you know!



World's largest leaf is that of Raffia palm. It can be up to 25 m long and 3 m wide! World's smallest leaf is that of Duckweed. Its length can be as small as 2 mm.

Activity 1

Collect leaves of ten different plants. Make their colour impressions in your notebook. You may do this with crayons or poster colours.



Most of the leaves have their own peculiar smell. We can identify many leaves just by smelling them. Some leaves have pleasant smell. We use them to add flavour to our food. For example, leaves of coriander, curry plant, mint, and soya are used in cooking.

Most of the leaves are green. But there are leaves of other colours too. They may be white, yellow, red and orange in colour.

Leaves also change their colour and become yellow as they grow old.

Have you noticed the colour of neem leaves when they are very young and when they become old? Did you see any change?

Old leaves fall down from the plants. In some trees, all the leaves fall down in a particular season. This is known as their **fall season**. It happens between October to February every year. Silk cotton tree (*Semul*) and Flame of the forest (*Palash*) shed their leaves between February to April. *Peepal* sheds its leaves in March and April.



Peepal tree in the month of March in Delhi

What happens to the leaves that fall down?

When the leaves fall down, they rot and get mixed with the soil. Soil rich in rotten leaves is called **humus**. This type of soil is good for the growth of plants.

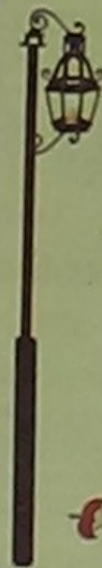
Some people collect the fallen leaves and burn them. This is not a good practice. The gas given off by the burning leaves is harmful to us.

We should put all the fallen leaves in a pit dug in the ground. Such a pit is called a compost pit. When the pit is full, we should cover it with soil. Pouring some water over it helps the leaves to rot easily.

Within 2-3 months the leaves rot fully and become **manure**. This manure provides useful nutrients to the plants.

Do you know!

How do leaves change to manure in a compost pit? Actually thousands of small creatures called bacteria, many worms and insects feed on the leaves continuously and produce a dark brown substance called manure.



Activity 2

Find out what is done to the fallen leaves in your school. If there is a compost pit in your school, ask the gardener how often he takes out the manure and refills the pit with more fallen leaves.

Green leaves produce food for the plants

Green leaves are the food factories of plants. Green leaves contain chlorophyll. Chlorophyll has the power to use sunlight and make food. The leaves also use water and carbon dioxide gas from the air for this purpose. This process of making food is called **photosynthesis**.

Food prepared by the leaves is eaten by many animals. It is also used by plants for their growth. How many animals do you know that eat plant

leaves? All grass eating animals eat the leaves of plants. Cows, buffaloes, goats, horses and zebras eat grass and leaves of other plants.



A number of insects and caterpillars feed on the leaves of plants. Many fishes eat the leaves of aquatic plants.

We eat the leaves of many plants like spinach, fenugreek (*methi*), mint, coriander, cabbage, mustard (*sarson*) and lettuce. Leaves of plants like *tulsi*, mint, *neem* are used as medicine.

Tea is a popular drink all over the world. We get tea from the leaves of tea plant.



Tea leaves to a cup of tea

Some people eat betel leaves (*paan*). People also chew tobacco leaves and smoke them in the form of *bidis* and cigarettes. But these are harmful for our health. We should try not to use them.

Other uses of leaves

Henna (*mehendi*) leaves are used to colour the hair. Girls make beautiful designs on hands with the paste of *henna* leaves.



Banana leaves are used as plates to serve food in many parts of South India.

Big leaves of trees like those of sal, areca palm, *palash* and jackfruit are dried and made into plates and bowls. Such plates and bowls are used in community lunches in temples and *gurudwaras*.

In villages, large dried leaves of palms (like coconut palm and date palm) are used to build roofs of huts.

People decorate the doors of houses with '*Bandanvaar*' or '*Toran*' made of leaves of trees like *Asoka* and mango.


Leaf art is a popular form of art work. Leaf motifs are made on clothes and leaf pattern on pots and walls to beautify them.



1. Different plants have different types of leaves. Leaves differ in size, shape, colour and smell.
2. Leaves are the food factories of plants. Green leaves make food in the presence of sunlight.
3. Many trees shed their leaves at a certain time of the year.
4. Fallen leaves rot in the soil and change to humus.
5. We can dump fallen leaves in a compost pit so that it rots and changes to manure. Manure is useful for the growth of plants.
6. Leaves are used as food and medicine. We use them as plates to serve food.
7. Leaves are used to make roofs of huts and to decorate our houses.

Add to your vocabulary

Impressions	—	a mark produced by pressing
Peculiar	—	special
Humus	—	dark brown or black substance produced when leaves rot (It is good for the growth of plants.)
Beautify	—	make beautiful



Exercises

A. Select the correct options.

- a. _____ tree has very big leaves.
i. banyan ii. mango iii. palm ✓ iv. duckweed
- b. Leaves of _____ plant are used as medicine.
i. banana ii. mango iii. carrot iv. tulsi ✓
- c. Henna (mehendi) leaves are used to colour _____.
i. clothes ii. hair ✓ iii. walls iv. pots
- d. _____ are put in compost pits to make manure.
i. flowers ii. new leaves iii. fallen leaves ✓ iv. green leaves

B. Unscramble the names of plants whose leaves are used;

- | | | |
|--|--------|---------------|
| a. As plates to serve food | NAABAN | <u>Banana</u> |
| b. To make roof of huts | LMPA | <u>Palm</u> |
| c. For making 'Torans' for decorating door | ANMGO | <u>Mango</u> |
| d. For decorating hands | NAHEN | <u>Henna</u> |

C. Fill in the blanks by selecting the right words from the list given below.

chlorophyll, power, carbon dioxide, photosynthesis, factories

- a. Green leaves are the food factories of plants.
- b. Green leaves contain chlorophyll.
- c. Chlorophyll has the power to use sunlight.
- d. Leaves use water and carbon dioxide of the air to make food.
- e. The process of making food is called photosynthesis.

D. Answer the following questions.

- a. What do plants need to make their food?
- b. What is the fall season?
- c. What are compost pits?
- d. Why should fallen leaves not be burnt?
- e. Write down ^{five} ~~two~~ uses of leaves?

HOTS

How are carnivorous plants dependent on animals for their food?

LET'S DO

Take a *peepal* leaf. Put it in a bowl of water. Let it rot there for about a week. Take it out and slowly pat it with your hands. Wash it till all the rotten matter is gone. You will see a fine network of veins. Now paint it as you wish and paste it in your art book.





Project Work

Collect leaves of different shapes. Dry them by pressing between a stack of newspapers. When the leaves are dry, arrange them in such a way that you get the shapes of different animals.

