

JAFFNA HINDU PRIMARY SCHOOL



AFTER SCHOOL ENGLISH MEDIUM CLASS

ENVIRONMENTAL STUDIES "PLANTS AND FLOWERS" VOLUME 1



*All lessons, based on syllabus,
are for Grade 4 students.*

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PREFACE

The standard of English in the Jaffna District has dwindled to a deplorable level. Hence an urgent need for English has arisen to devise a new approach to educate the students on our soil for the purpose of enhancing their proficiency in English.

English has earned its reputation the world over and any country that never considers English important, will not have a hope of progressing the fields essential for the acme, viz, whether it be industrial, scientific or technological.

Securing a sound knowledge of English is rather essential to our students, who are future guides and their knowledge of English will stand them in good stead when they become able to lead the nation on par with the developed and developing countries.

Therefore, the youth ought to be fully aware of 'Environmental Studies' right now especially from the elementary level through English.

- S. Srikumar -

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There are many kinds of plants around us. Look at these plants.

(1) Trees:



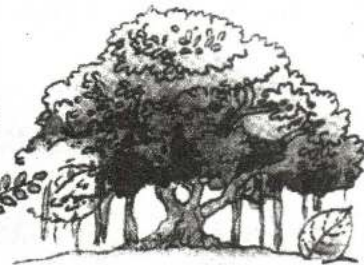
Mango



Neem



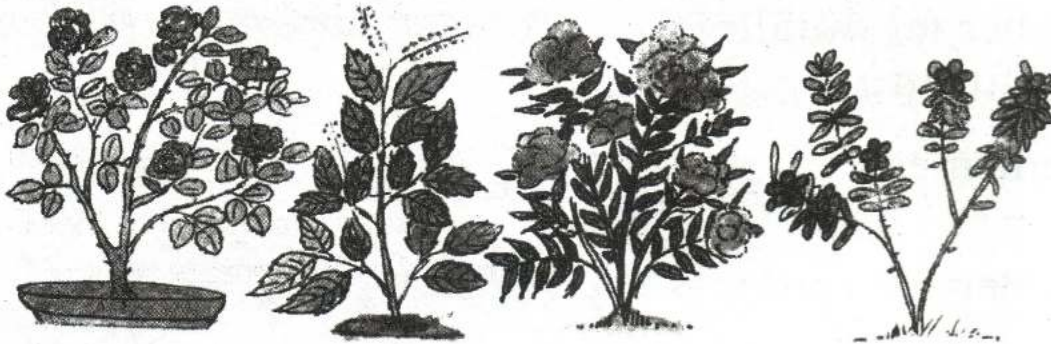
Tamarind



Banyan

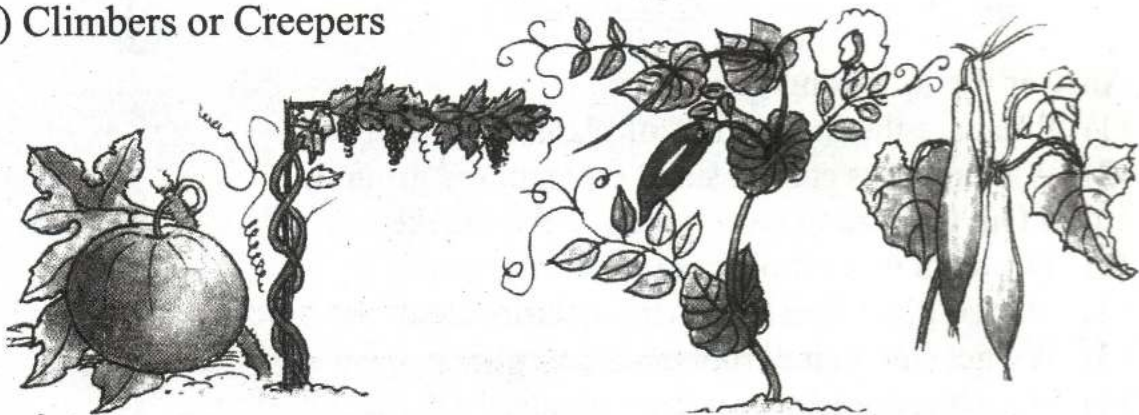
Trees are very big plants.
They have strong, thick trunks.

(2) Bushes or Shrubs:



Bushes or shrubs are small plants.
They do not have very strong and thick trunks.










(3) Climbers or Creepers



Climbers have weak stems
They cannot stand erect on the ground
They creep on the ground
They need some support to grow upwards.

Uses of Plants

We get from plants :

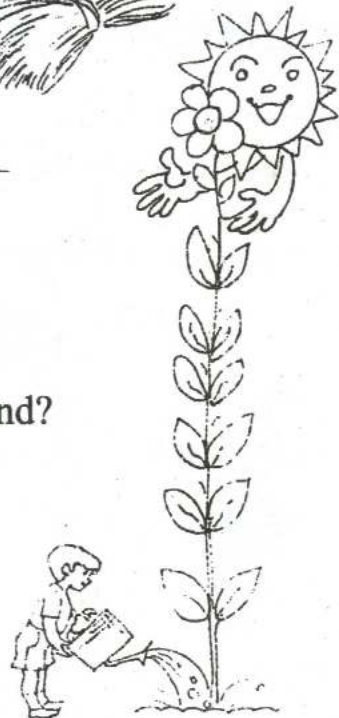
1. Foodgrains and vegetables. 
2. Fruits and flowers. 
3. Coconut, oilseeds, sugar, tea, coffee, cocoa 
4. Cotton, jute, rubber. 
5. Fuel. 
6. Timber for buildings and furniture 
7. Medicines 
8. Fodder for cattle. 
9. Shade. 

EXERCISES

1. Answer the following questions:
 - (1) What are the main kinds of plants?
 - (2) Which plants cannot stand erect on the ground?
2. Cross Out the wrong word given in the brackets:
 - (1) The stem of a climber is (weak/ strong)
 - (2) Mango plant is called a (tree/ shrub)
 - (3) We get (medicine/ rubber) from tulsi.
 - (4) We get (cotton/ wool) from plants.

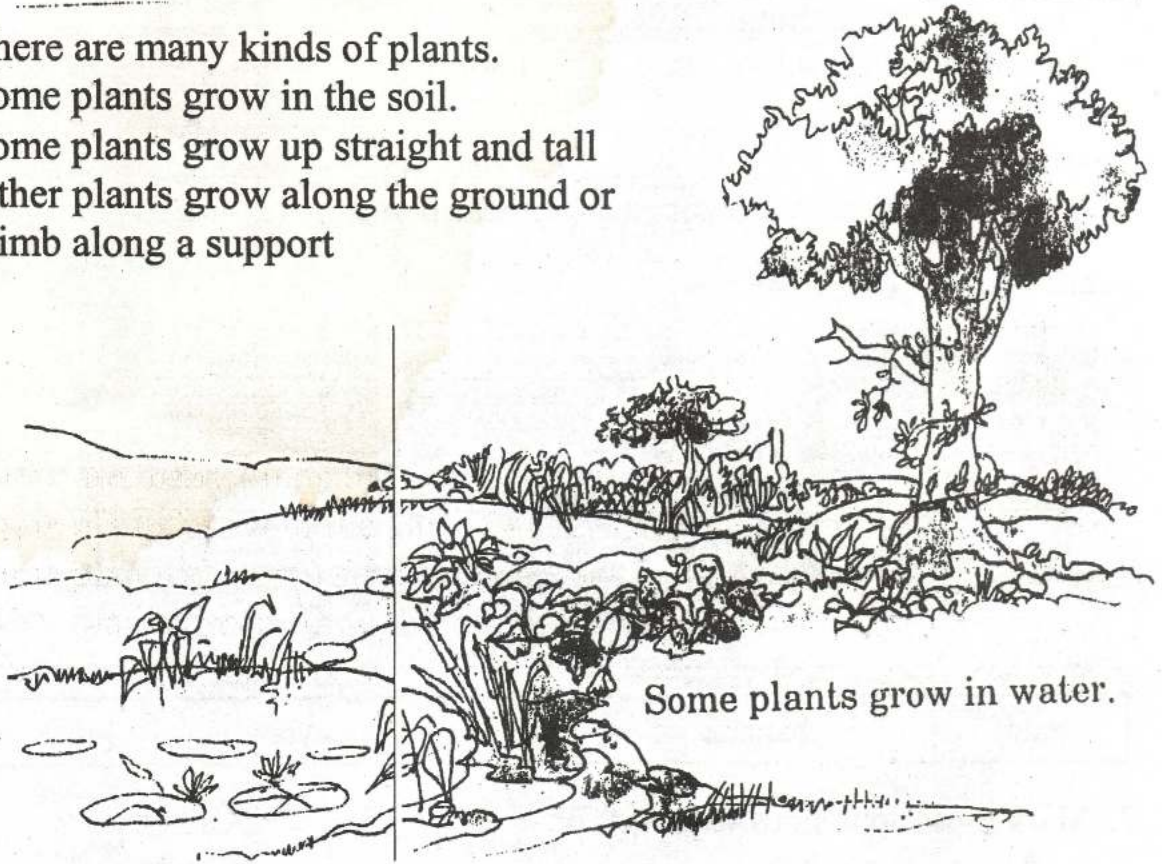
Remember well:

Plants are very useful to us.
We should grow more and more plants



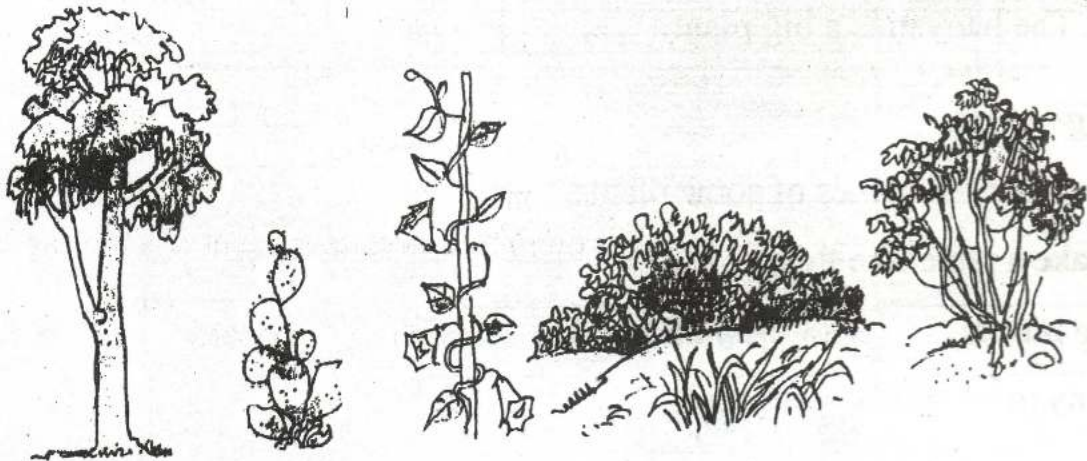
Types of plants.

There are many kinds of plants.
Some plants grow in the soil.
Some plants grow up straight and tall
Other plants grow along the ground or
climb along a support



Can you see these plants in the picture below?

tree cactus creeper bush grass shrub



Remember

1. Plants are of many different sizes.
2. Plants are living things.
3. Some plants live a long time, others don't.

Exercises.

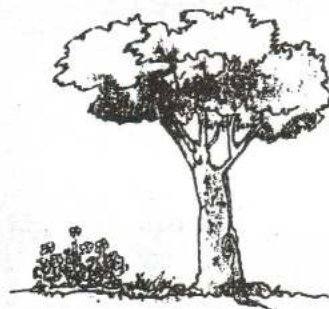
1. Write the correct name for each of these plants.



.....
Palm	banana	rose	banyan	grass

2. Mark these sentences with a ✓ or a ✗.

- a. All plants are big.
- b. Only some plants die.
- c. Plants are living things.
- d. All plants grow.
- e. The banyan is a big plant.



Things to do.

1. Find out the names of some plants.

Make a table like this:

<i>big plants</i>	<i>small plants</i>
banyan	rose

2. Draw some plants in your note book.

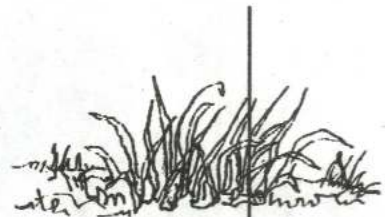
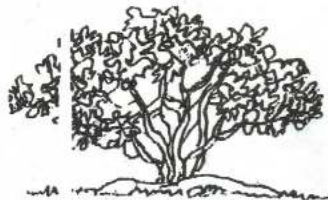
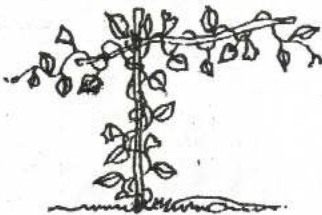
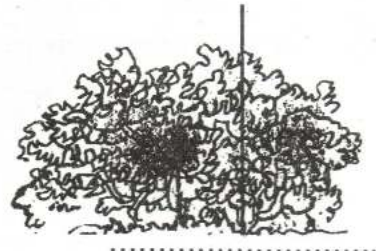
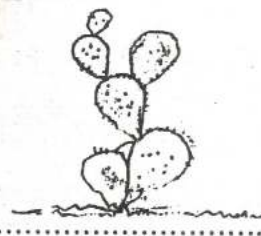
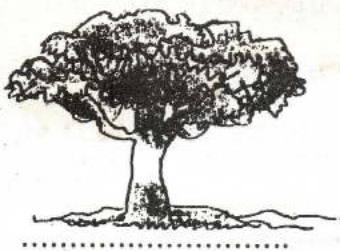
Remember

1. There are many kinds of plants.
2. Plants may grow in soil or in water.

Exercises:

1. Write the correct word under each picture.

tree	cactus	creeper	bush	grass	shrub
------	--------	---------	------	-------	-------



2. What does each sentence describe?
 - a. This plant grows tall and straight.
 - b. This plant grows along the ground.
 - c. Cows like to eat this plant

Things to do

1. Draw a picture of a cactus in your notebook.
2. Make a collection of different kinds of grasses. How many different kinds can you find?

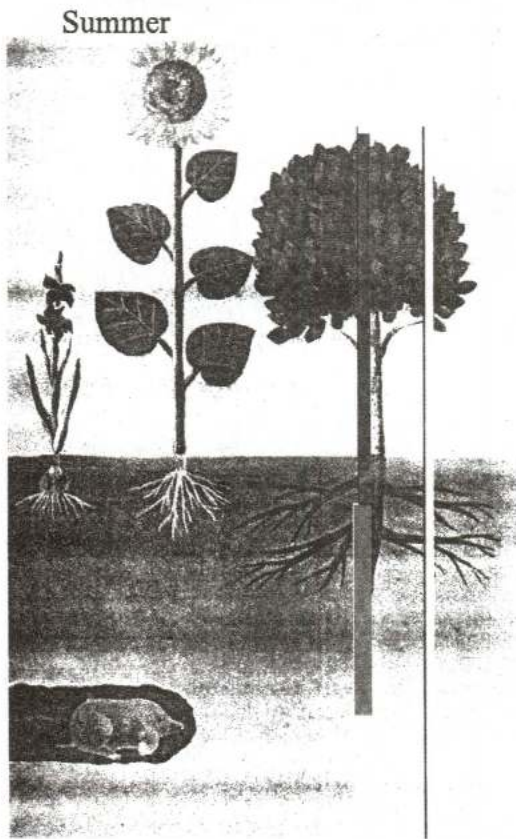
? Why Do Trees Grow So Big?

UNIT 2 Lesson - II

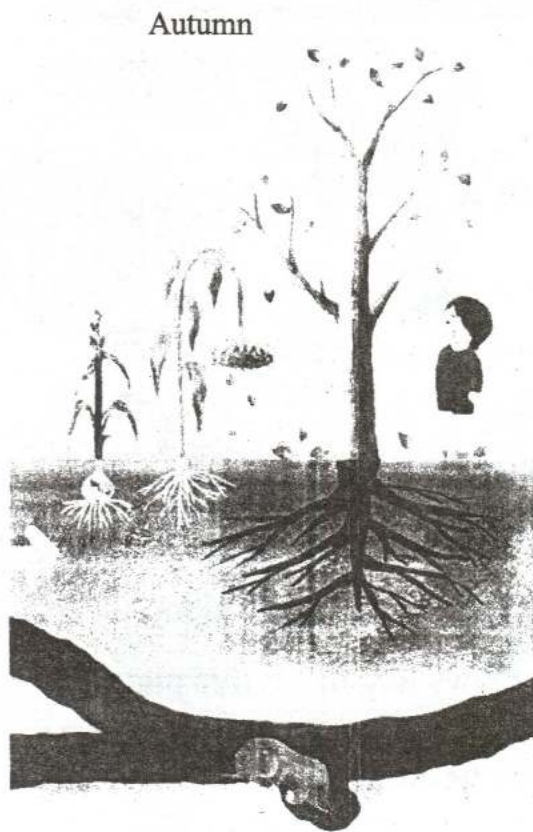
Answer Unlike flowers, trees last all year round. In the autumn, when flowers dry up, trees continue to grow slowly. And unlike people, trees keep growing as long as they live. They do not stop when they become adults. So if trees live a long time, they can grow to be very large.



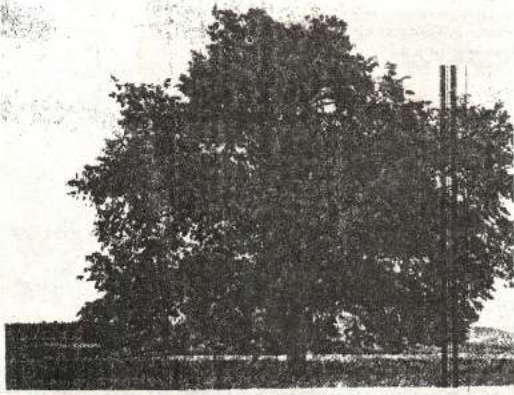
Trees usually live longer than people



Flowers and trees both grow very fast .



Flowers dry up and tree leaves fall.



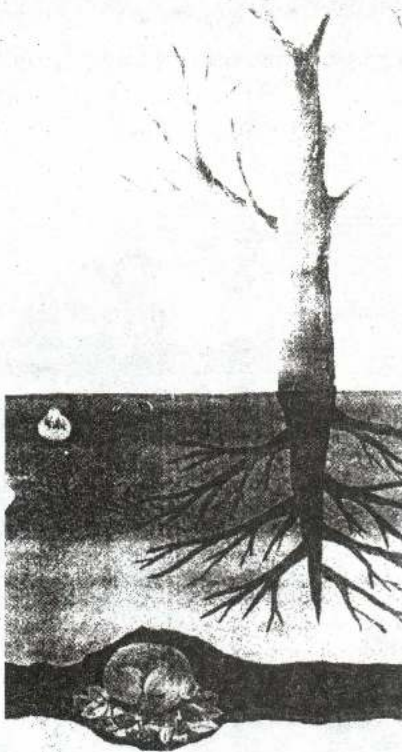
Trees keep getting bigger as long as they live

• **To the Parent**

Trees grow quickly during spring and summer, they grow slowly during autumn, and they remain dormant during winter. Some redwood trees in the United States are more than 330 feet (100m) in height and 33 feet (10m) in diameter. Even though redwoods originally sprouted from a single seed, these trees have gradually grown to giant size over a period of several thousand years.

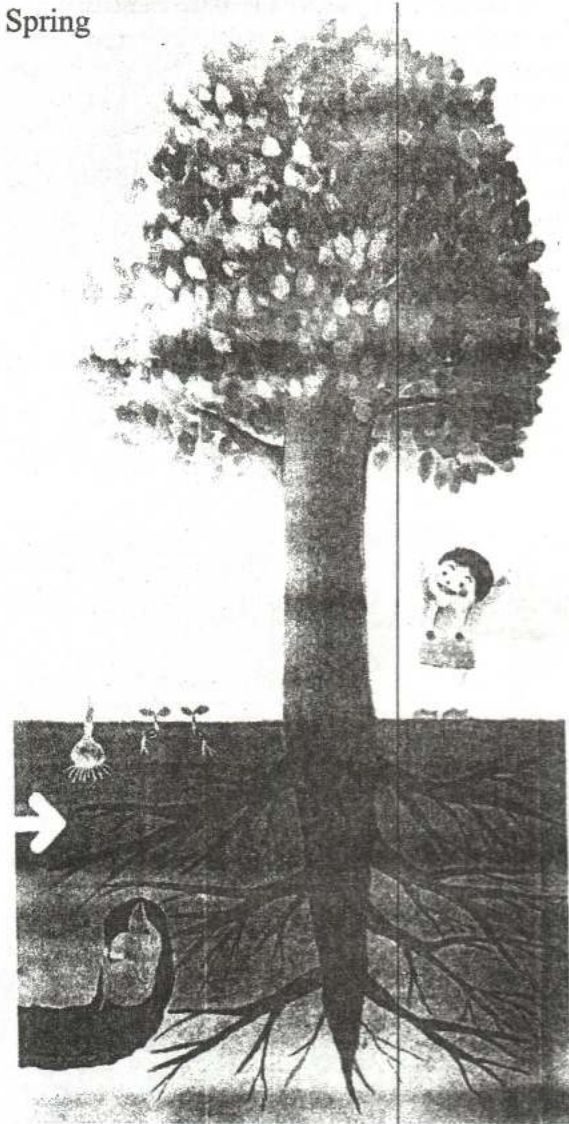
Trees keep getting bigger as long as they live

Winter



The flower have dried up and left only a bulb or seeds. But trees stay throughout the winter.

Spring

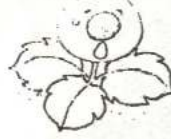


Flowers sprout and trees bud. Both grow quickly now. Trees grow stronger and taller than before.

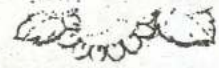
? Why Do So Few Plants Grow along the Seashore?

Answer Most Plants cannot live in the sand along the seashore. Sand cannot store fresh water, which plants need. When the wind blows, sand covers plants. And when the tides and waves come in, plants are washed out to sea. Also, salt water kills most plants. Even so, a few plants do live along the seashore.

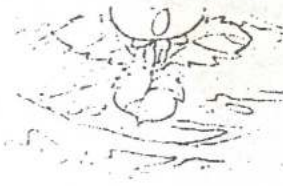
Water, give me water!



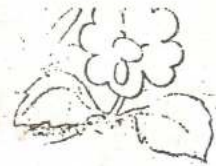
This sand is so heavy!



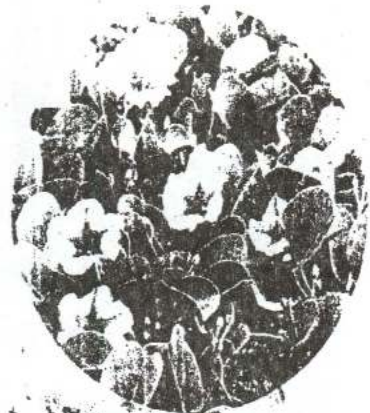
Help! I'm drowning!



Ugh, that's too salty!



Bindweed



Some Seashore Plants.

Plants that grow along the seashore can stand salt water and do not die even when they are buried in the sand. After being buried for a while, their shoots poke through the sand, and new flowers appear. These plants often have long roots grow away from the edge of the ocean, toward fresh water.



Even if covered, new shoots soon poke through the sand

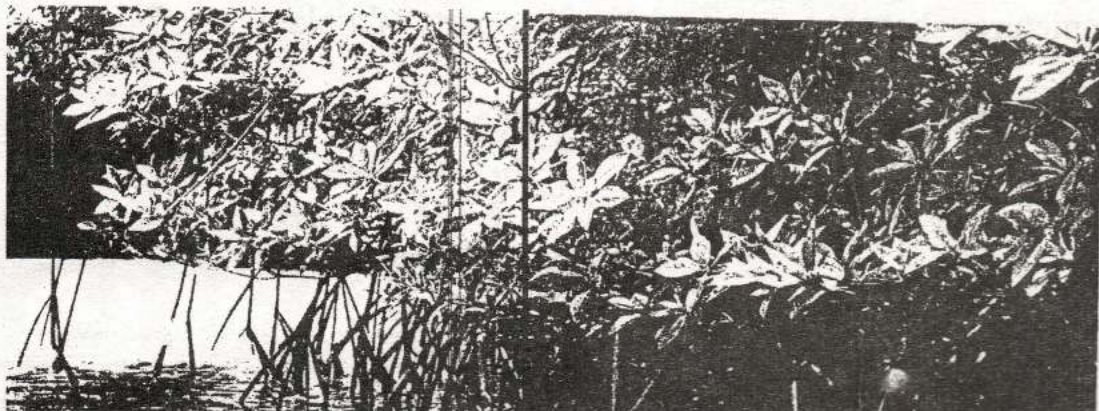
The plants are joined under the sand



This long runner lets it live on seashores



Long roots let this plant reach fresh water



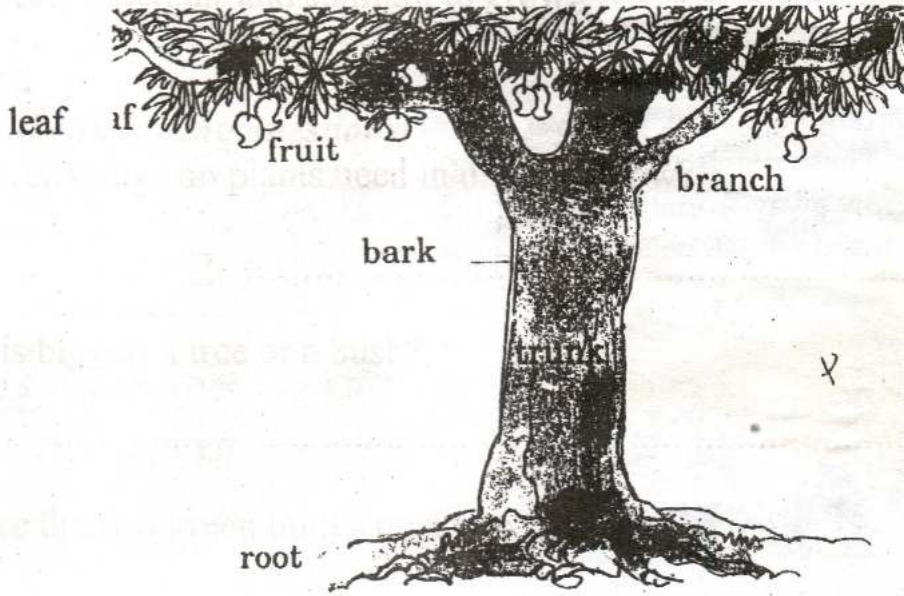
• To the Parent

The seashore is not hospitable to most plants. Salt water in the ground and strong winds blowing in from the sea preclude most plants from growing. Among the plants that are usually found along seashores is the sea bindweed, *Calystegia soldanella*, pictured on the opposite page. Another type of plant that can live along seashores is the mangrove tree. Mangrove trees thrive along tropical coasts that are regularly flooded with water. These hardy specimens can be found on such tropical coasts around the world.

Mangrove trees: They can grow even in sea water

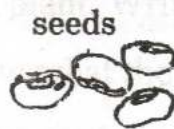
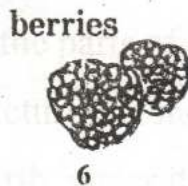
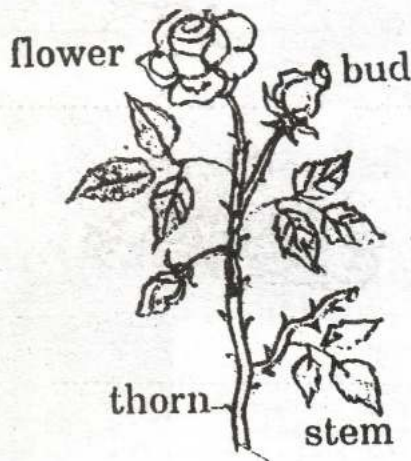
Parts of a plants.

Here is mango tree. Look at all the parts of the tree.



Here is another plant.

The pictures show you some of the other parts of a plant.



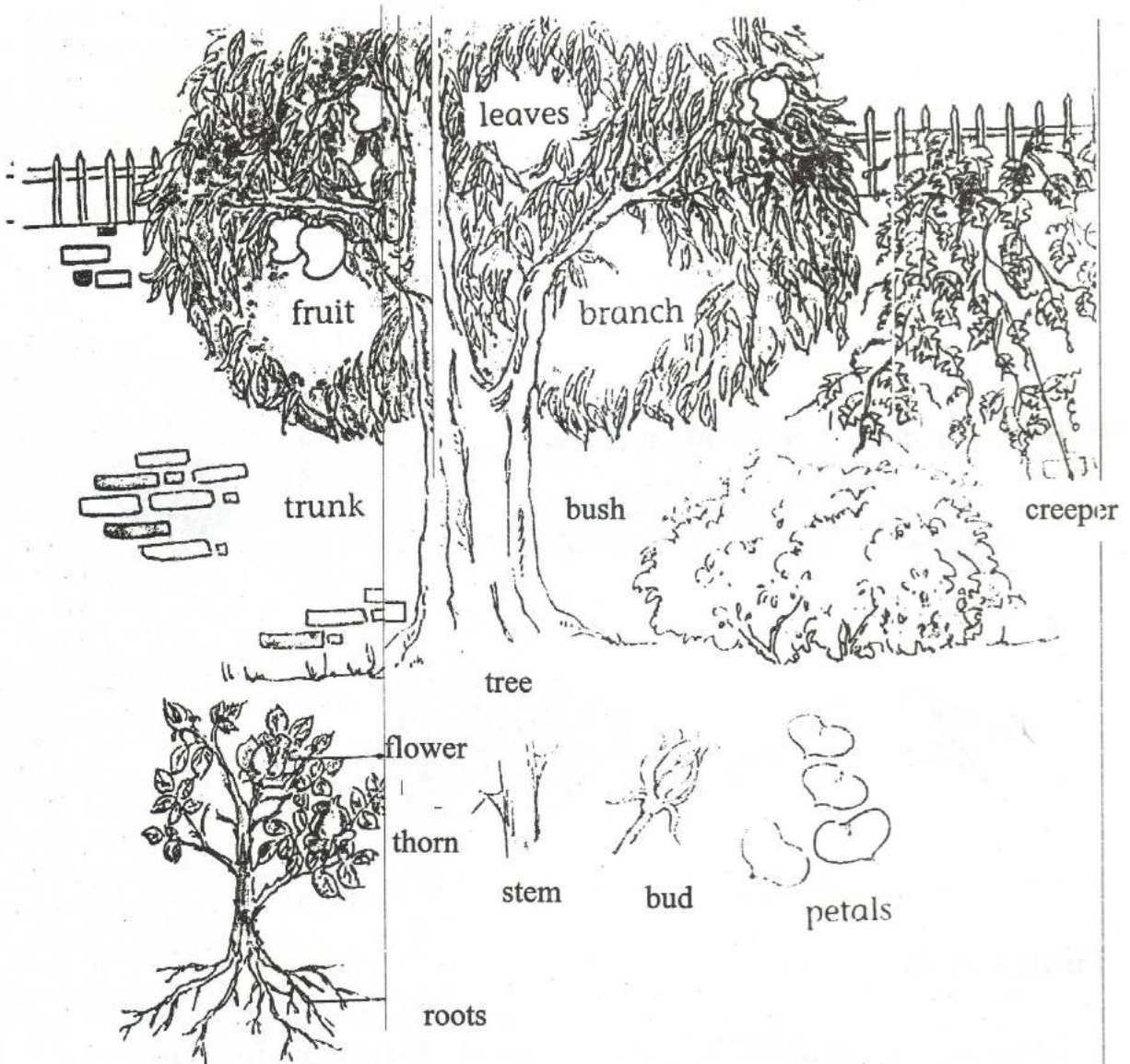
Plants Need.

UNIT 3

Lesson - II

Plants need **water**, **air** and **sunlight** to grow.

Here are some words about plants.



Remember

1. There are many kinds of plants.
2. Each part of a plant has a special name.
3. Plants need water, air and sunlight to grow.

Exercises.

A. Answer the following questions:

1. What three things do plants need in order to grow?

1. 2. 3.

2. Which is bigger; a tree or a bush?

.....

3. What are the soft green things on a tree called?

.....

B. Write the names under the pictures.



.....



.....



.....



.....



.....

Things to do.

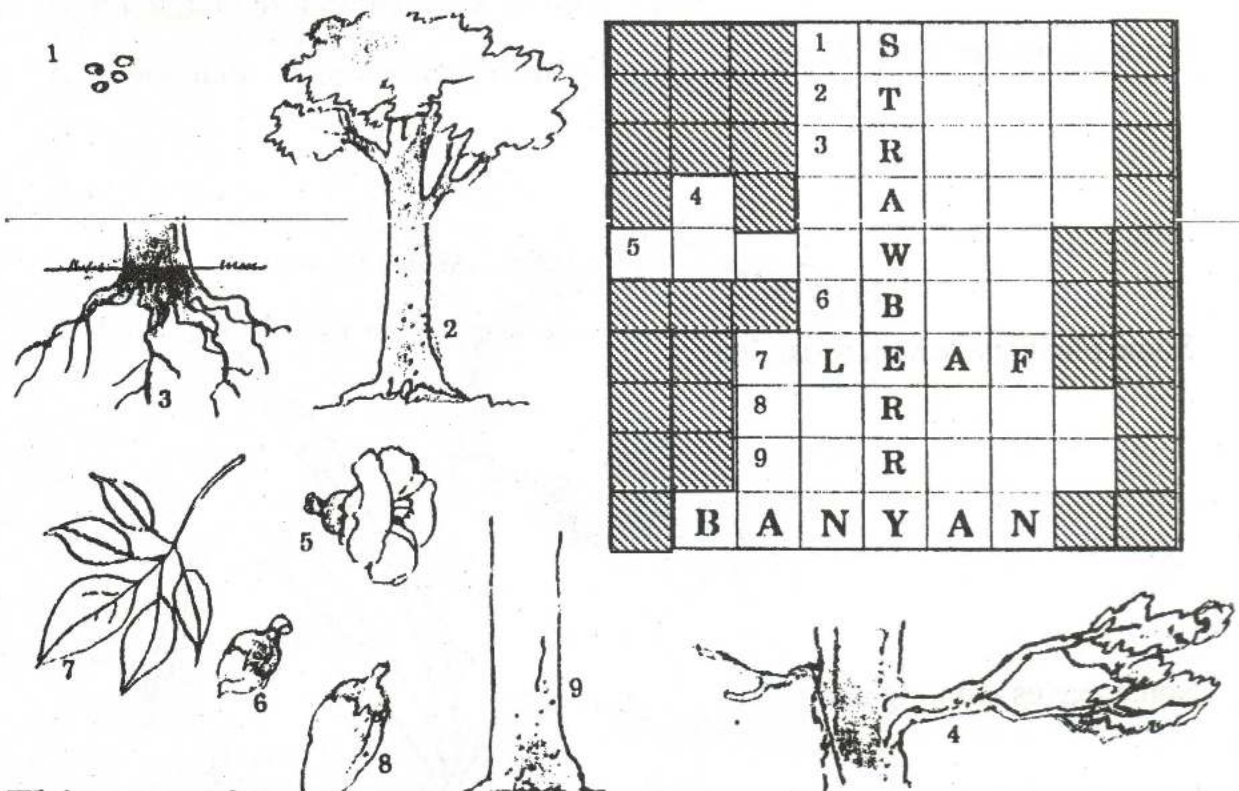
1. Learn the names of all the parts of a plant. Write them in your exercise book. Draw pictures to show what the words mean.
2. Plant a seed in some earth, water it every day, and watch it grow.
3. Collect some leaves and flowers. Press them and dry them. Stick them in your scrapbook.

Remember.

1. Each part of a plant has a special name.
2. Most plant have leaves, flowers and a stem.

Exercise

1. Draw a picture of a tree. Label all the parts.
2. Turn the banyan tree into a fruit!



Things to do

1. Collect some things from the garden. Make an exhibition for the class. Make labels for all the things you find.
2. With your teacher's help make a display for the classroom wall. Stick some real plants onto a card. Label the parts.

Leaves.

UNIT 4

Leaves grow in plants.

Plants store their food in leaves, stems and roots.

Leaves are usually green.

Leaves have many different shapes.

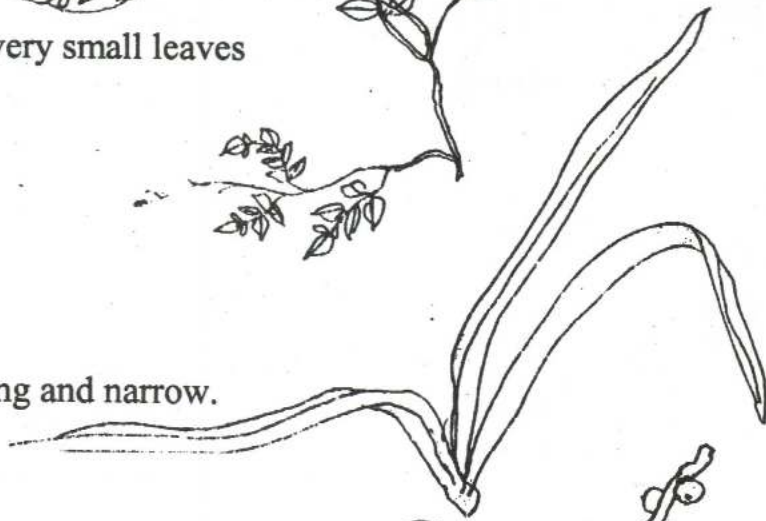


Some plants have big leaves.

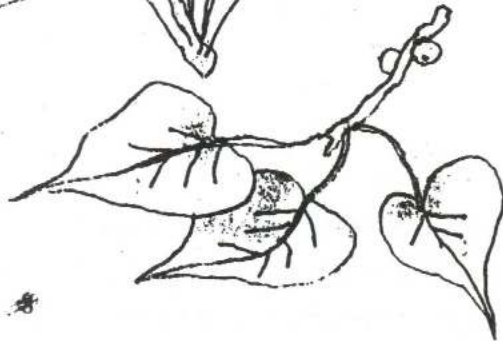


Some plants have very small leaves

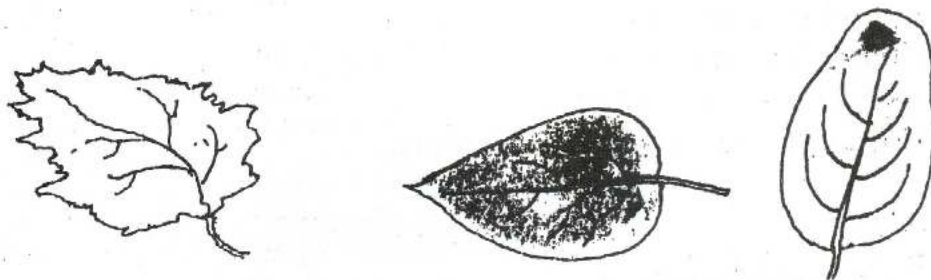
Some leaves are long and narrow.



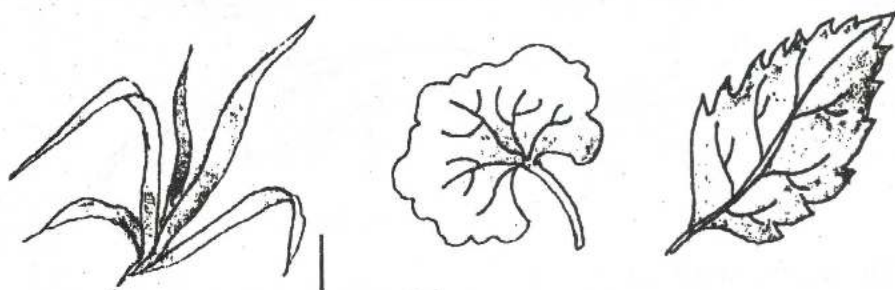
Some leaves are broad.



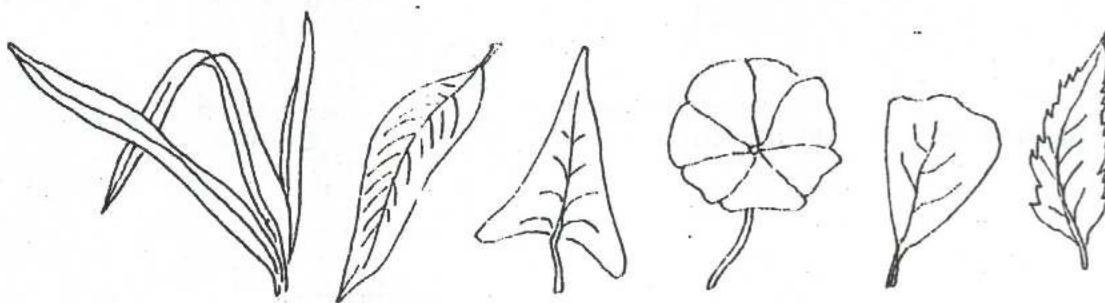
Some leaves have straight edges.



Some leaves have spiky or curved edges.



Look at the shapes of these leaves.



Colour these leaves.

Remember that not all leaves are the same colour,

Use some of these words when you are talking about leaves:

green	long	wide	narrow	oval	round	broad
heart-shaped	smooth	rough	spiky	like a feather		

Remember

1. Leaves are of all shapes and sizes.
2. Leaves are usually green in colour.
3. Leaves have different kinds of edges.
4. Plants store their food in leaves, stems and roots.

Exercise

1. Copy the leaves into your notebook.

Write one sentence about each leaf.

Use some of the words at the bottom of page 15.



2. Can you match the leaves with these trees?



papaya



gulmohur



mango



neem



guava



banana

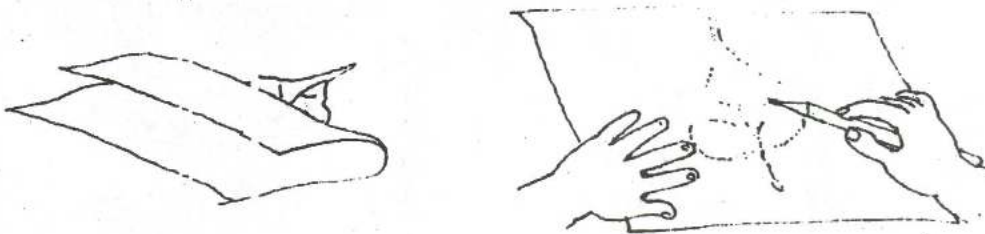
Things to do

1. Collect some leaves

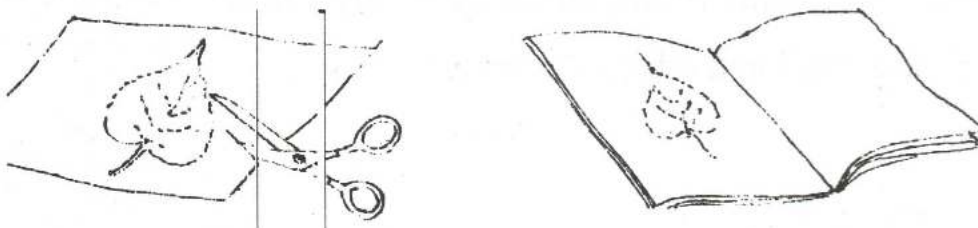
Put a leaf under a sheet of paper.



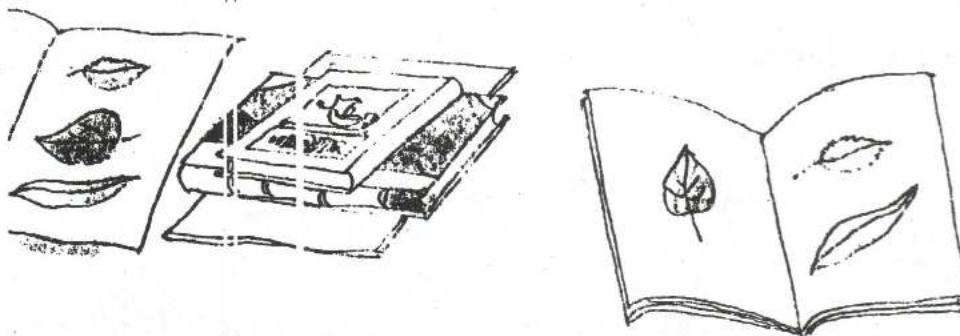
Scribble over it.



Cut out the print. Paste it in your scrapbook.



2. Make a leaf collection. Press the leaves and dry them. Paste them in your scrapbook.

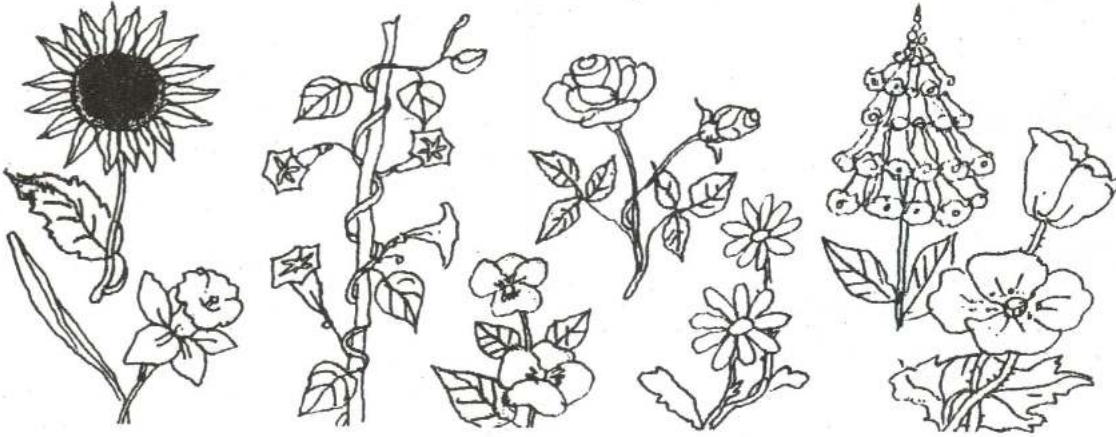


Flowers grow on trees, bushes and other kinds of plants.

Flowers make a garden look beautiful.

There are flowers of many different colours.

Flowers have many shapes and sizes.



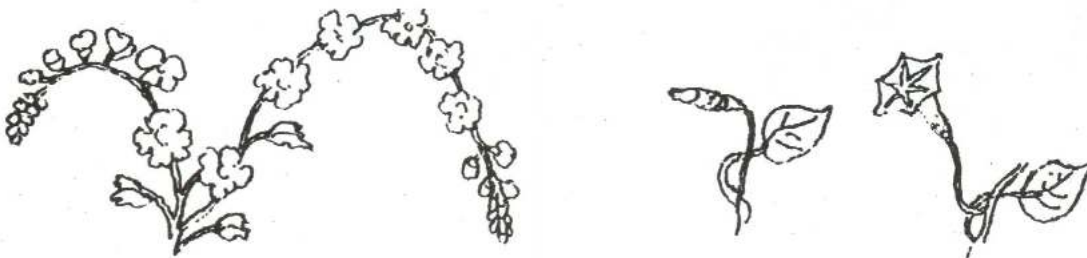
Some flowers have many petals, others have only a few.

Some petals are small and others are large.



Some plants have many flowers, others have a few.

Flowers grow from buds.

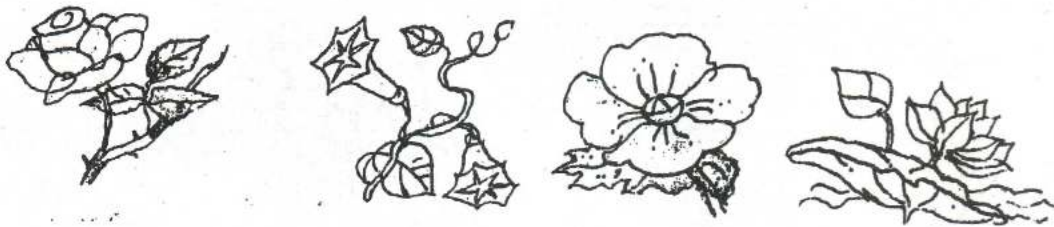
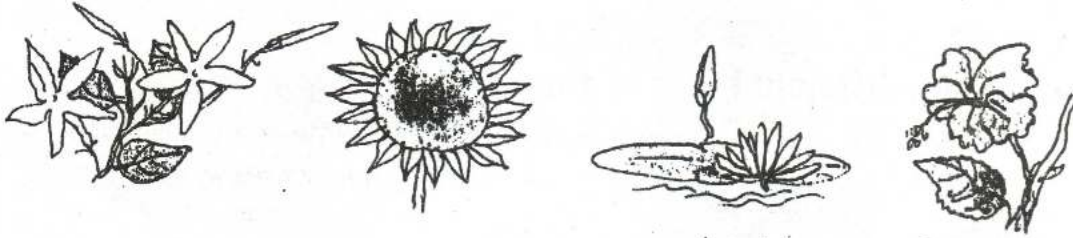


Remember

1. Many plants have flowers.
2. Flowers are of all shapes, colours and sizes.
3. Flowers grow from buds.

Exercises.

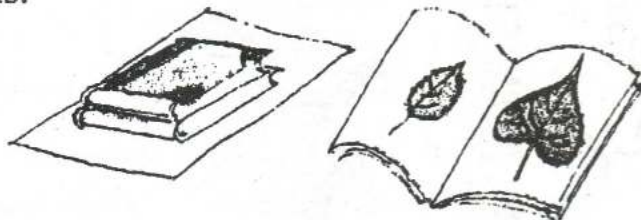
1. Here are some flowers. Do you know their names?



sunflower	hibiscus	water lily	poppy
rose	lotus	jasmine	morning glory

Things to do

1. Find two or three flowers. Bring them to class. Copy them into your notebook. Count the petals.
2. Make a book of flowers.
Collect some flowers.
Press them.
Stick them in your book.
Pick only one flower of each kind.



Fruits and vegetables

UNIT 6

Many plants grow fruit. Fruit grow from flowers.



There are many different kinds of fruit.

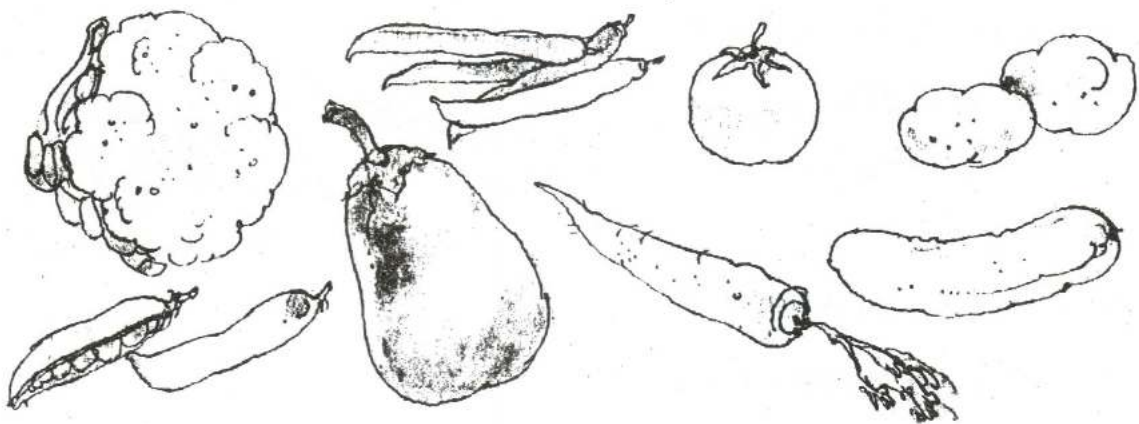


Plants also give us different kinds of vegetables.

Some vegetables grow on branches and stems.

Some vegetables are the leaves or stems of plants.

Some vegetables are the roots of plants. They grow under ground.



Remember

1. There are many kinds of fruit.
2. Fruit grow from flowers on plants.
3. There are many kinds of vegetables.

Exercises

1. Put the fruit and vegetables in the correct basket.

You will find the pictures on page 20.

tomato	mango	apple	cauliflower	beans	grapes	potato
brinjal	banana	carrot	peas	pineapple	cucumber	pear

.....
.....
.....
.....

Fruit

Vegetables

2. Mark these sentences with a ✓ or a ✗
 - a. Vegetables only grow underground.
 - b. Fruit grow from flowers.
 - c. Potatoes are vegetables.

Things to do

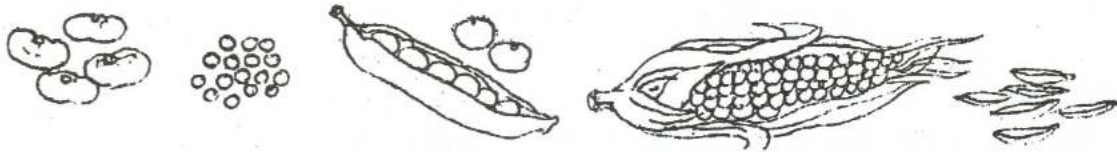
Make a table like this. Ask your friends which fruit they like the best. Colour one square each time.

apple							
pear							
banana							
mango							

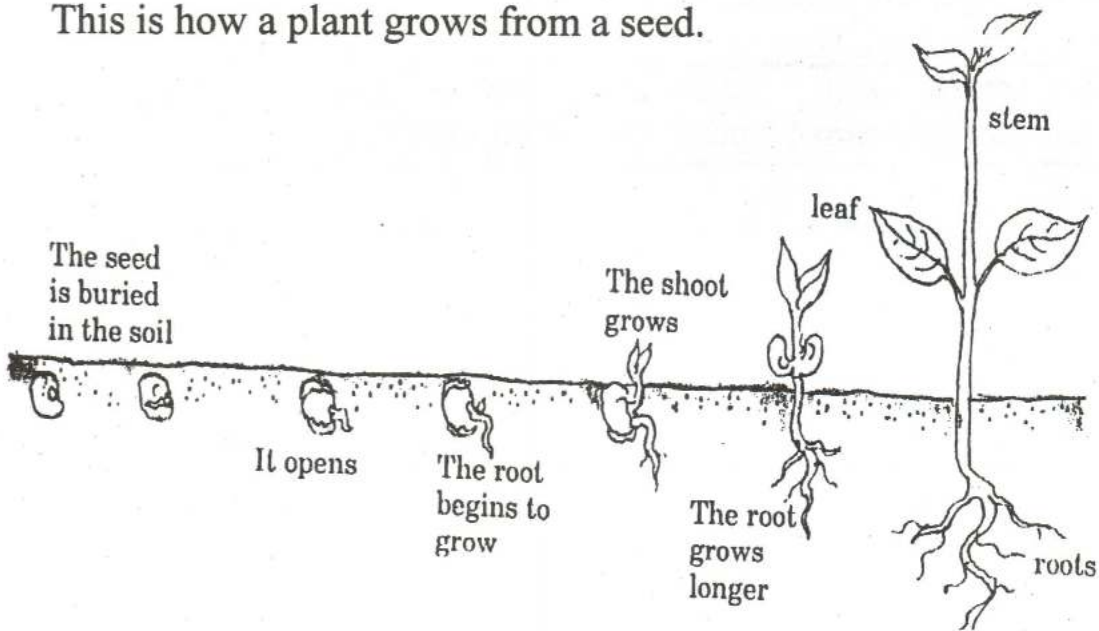
Seeds

UNIT 7

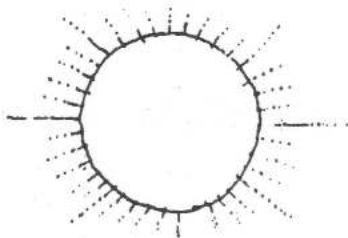
Most plants grow from seeds
Here are some seeds.



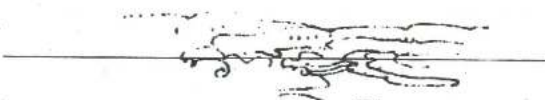
This is how a plant grows from a seed.



The roots grow under the ground.
The roots suck up water from the soil.



To grow well, plants need
sunlight, air, water and good soil.

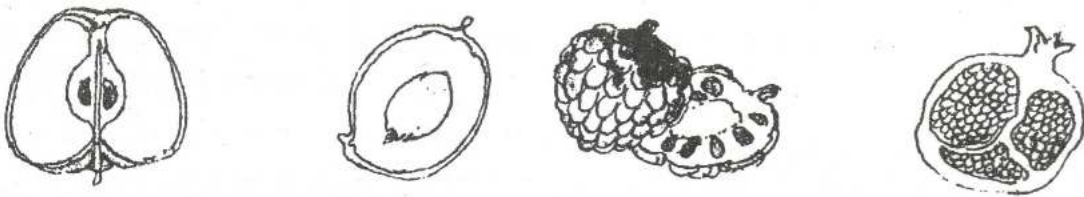


Remember

1. Many plants have flowers which grow into fruit.
2. Fruit have seeds in them.
3. Seeds have baby plants in them.
4. Seeds need sunlight, good soil, air and water to grow into plants.

Exercises

1. Bring some fruit to class. Cut open the fruit. Count the seeds.



Make a table like this.

one seed	a few seeds	man seeds

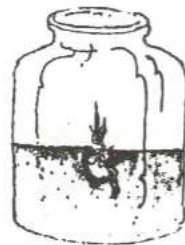
2. What four things does a plant need to grow well?

a. b. c. d.
.....

3. Draw your own pictures to show how a seed grows into a plant.

Things to do

1. Plant a seed in some soil in a glass jar.
Water the soil every day.
Watch the seed grow into a plant.



2. Place some wet cotton in a saucer.
Put some pea seeds on the cotton.
Watch the pea seeds grow. Keep the cotton wet.



Revision

A. Answer these questions:

1. What is the covering on the trunk of a tree called?

.....

2. Which part of a plant grows underground?

.....

3. Do mangoes grow on bushes or on trees?

.....

4. What colour is a sunflower?

.....

B. Fill in the blanks.

1. Most plants grow from

2. The small coloured parts of a flower are called

3. Plants store their food in their,
and

C. Match the following:

1. small white flower

2. small fruit

3. large tree

4. green vegetable

5. large fruit

6. root vegetable

a. banyan

b. pineapple

c. jasmine

d. carrot

e. grape

f. peas

D. Mark the sentences ✓ or ✗:

1. Fruit usually have seeds.

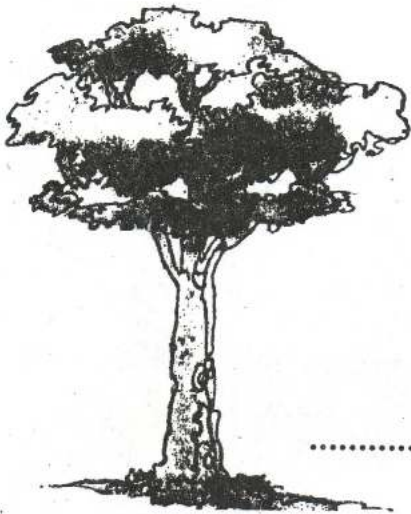
2. All leaves are green.

3. Leaves have straight edges.

4. A bud is a young flower.

5. A shrub is a kind of vegetable.

E. Label the following:



.....



.....



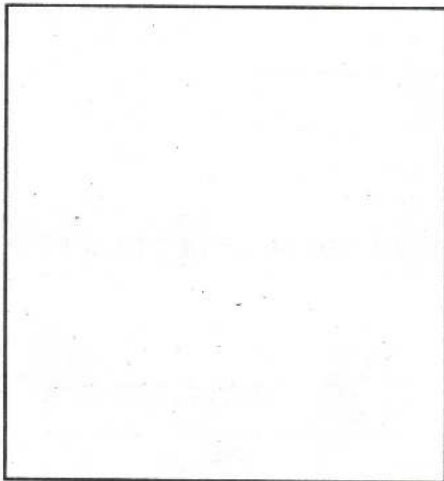
.....



.....

F. Draw pictures of the following:

a sunflower



three different fruit

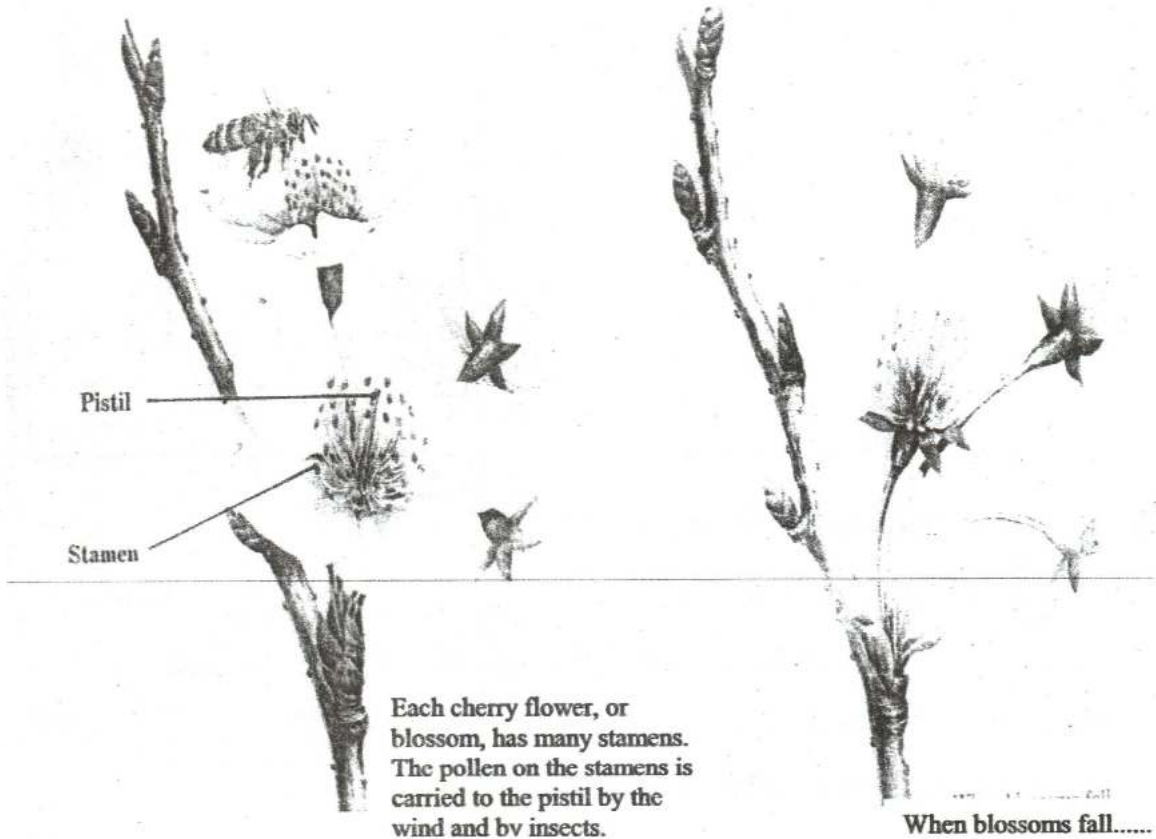


G. Tell your teacher in your own words:

1. How a seed grows into a plant.
2. How you found out which vegetable your friends liked the best.
3. What you know about leaves.
(Their colour, shape and size, where they grow.)
4. What you know about fruit.

? *What Are Pistils and Stamens?*

ANSWER Pistils and stamens are very important parts of a flower. Most flowers have a pistil in the center and several stamens around it. The pistil has a sticky top. The tip of each stamen is covered with a powder called pollen. When some of the pollen gets on the sticky pistil the plant is able to make fruit. The fruit has seed inside, and new plants grow from these seeds.



• **To the parent**

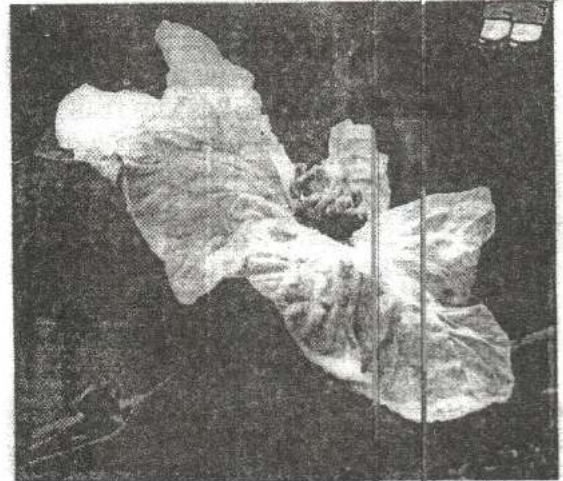
The function of pistils and stamens is to produce seeds. Most flowers have a single pistil located at the center of their blossom. This is the flower's female organ. The single pistil is surrounded by many pollen-covered stamens, which are the male organs. When pollen becomes attached to the pistil, the pollen travels down inside the pistil to the ovary at the base, where it fertilizes an egg cell. This eventually becomes the fruit's seed.



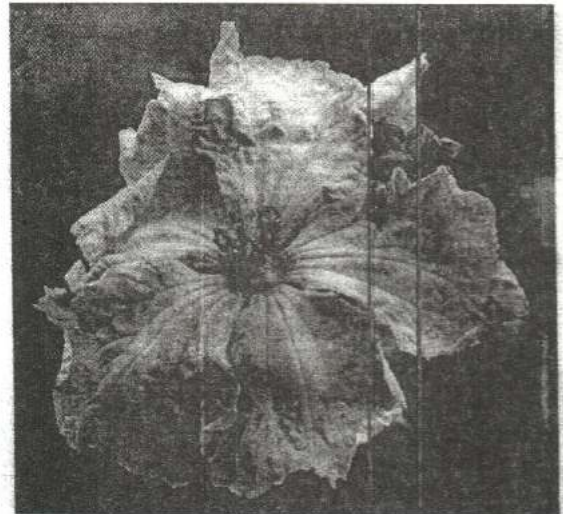
...cherries grow

Male and Female Flowers.

Most flowers have a pistil and stamens. But some plants have two types of flowers: female, with a pistil only, and male, with stamens only.



A female loofah flower has only a pistil

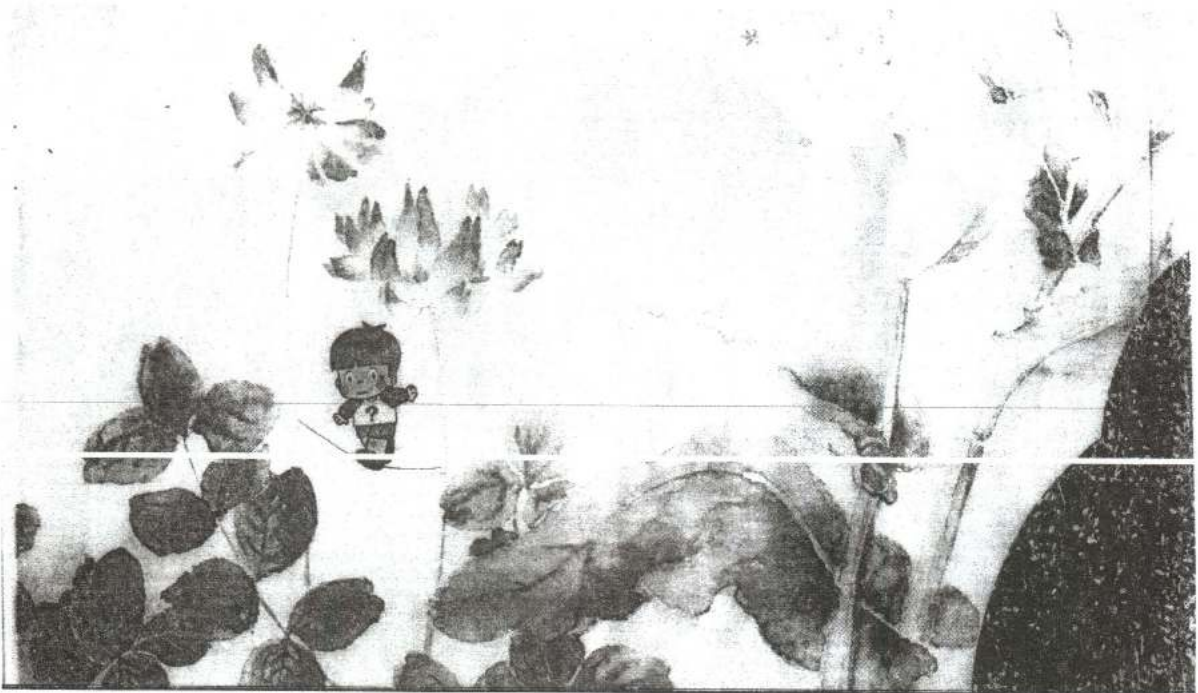


A male loofah flower has only stamens

? Why Are Flowers Colourful.

UNIT 8 Lesson II

ANSWER Many flowers need insects to help them make seeds. That is why they are so pretty. Flowers have bright colours to attract insects. Flowers also have a sweet-tasting liquid called nectar. When insects come to drink this nectar their bodies get covered with pollen. When some of this pollen rubs off on the flower's pistil the flower can make seeds.



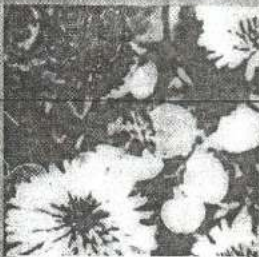


How insects see flower colours

Insects get a very different picture of flowers than we do. Their eyes can see ultraviolet light. Our eyes cannot.



A human's view



A honeybee's view

* To the Parent

Insects see plant colours and marking quite differently than humans do because insect eyes and human eyes are sensitive to different wavelengths of light. Humans can see the colours of the rainbow, starting with violet's short wavelengths and continuing through indigo, blue, green, yellow and orange to red's long wavelengths. Insects are sensitive to smaller wavelengths of light: Unlike humans, insects can see the very short wavelengths of ultraviolet light well, but they may not see red light at all

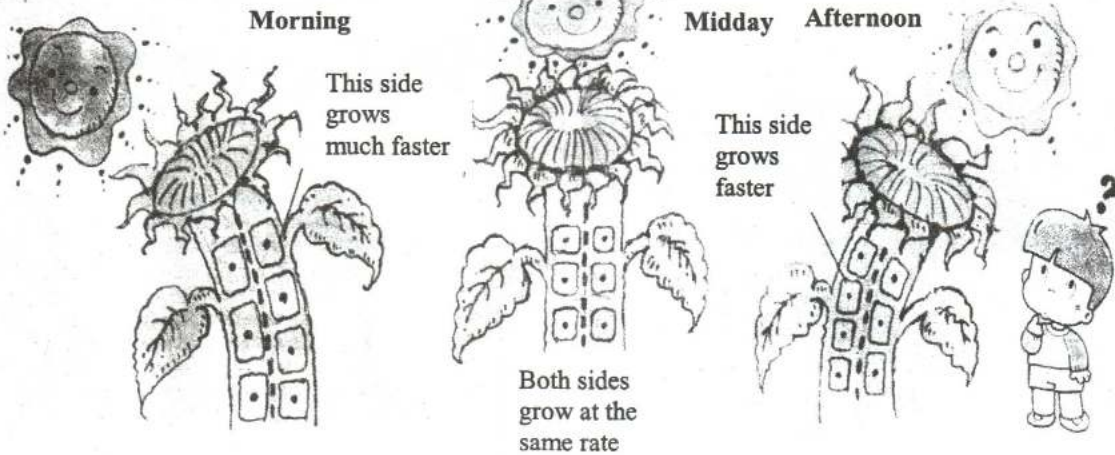


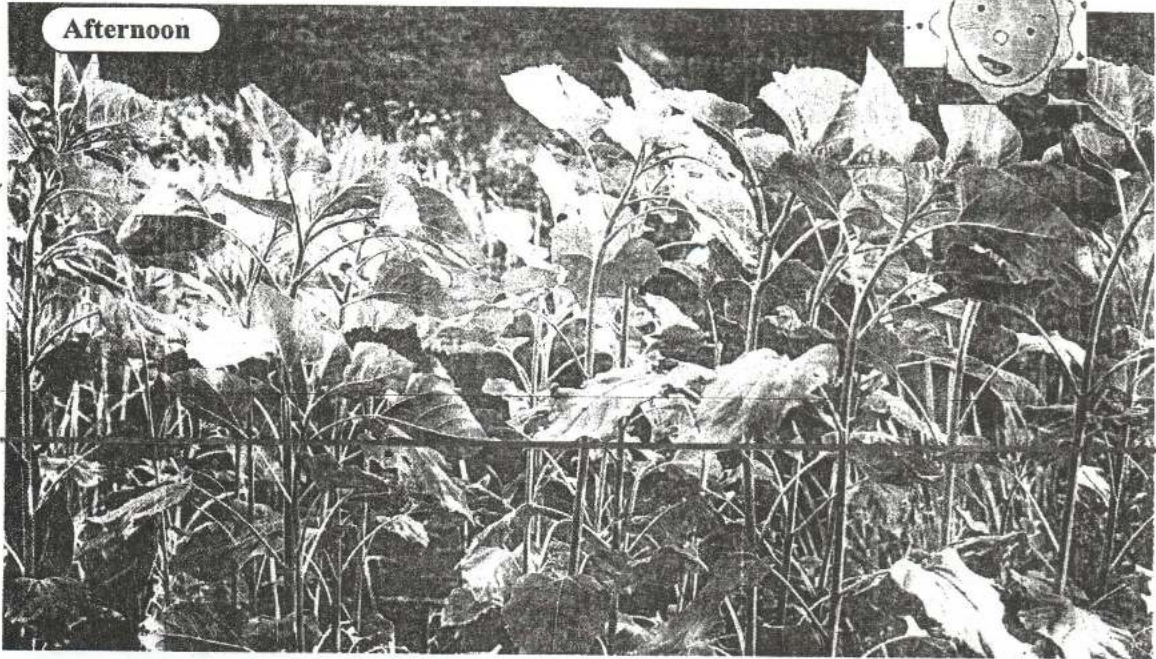
Why Do Sunflowers Turn to Face the Sun.



Morning

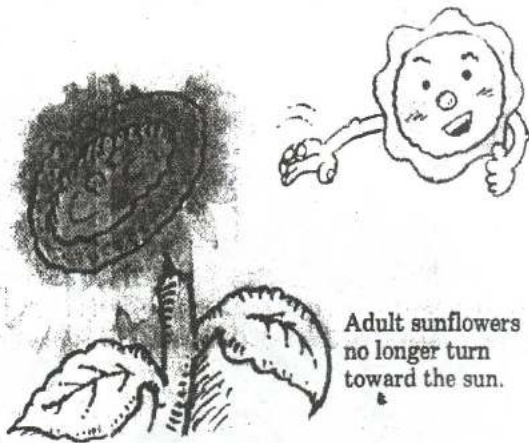
How sunflower stalks





In the morning young sunflowers turn to the east. During the day they follow the sun. In the afternoon they lean to the west

■ A fully grown sunflower



Adult sunflowers no longer turn toward the sun.

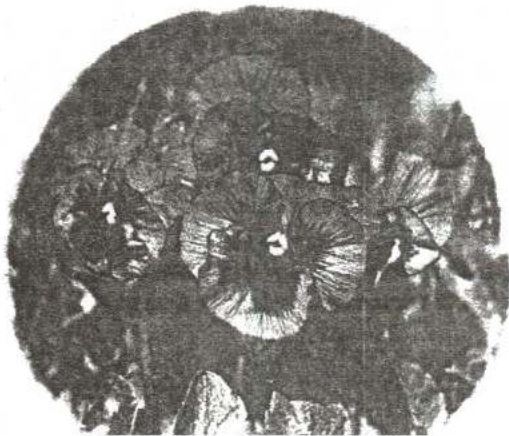
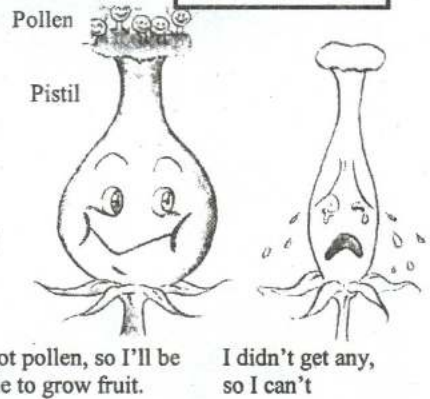
***To the Parent**

The stalks of plants have a tendency to grow in the direction of the light. That is because the side of the stalk that is in the shade grows faster than the side that is being hit by the light. When the sunflower is still young its stalk grows rapidly from morning until night. During this time the stalk turns with the sun's movement so that it actually seeks to be following the sun during the course of the day. This movement allows the plant's leaves to receive the sun's light most efficiently. Once sunflower reaches maturity, however, it no longer turns to follow the sun each day.

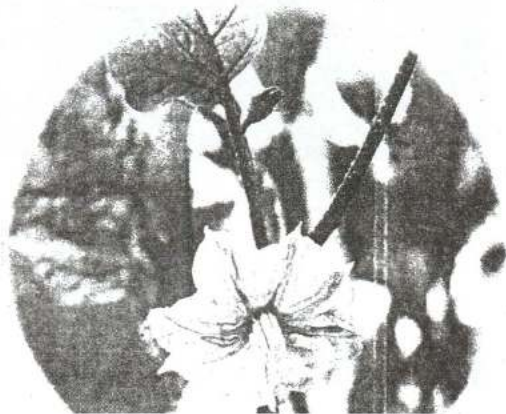
? Why Do Blossoms Fall?

UNIT 8 Lesson IV

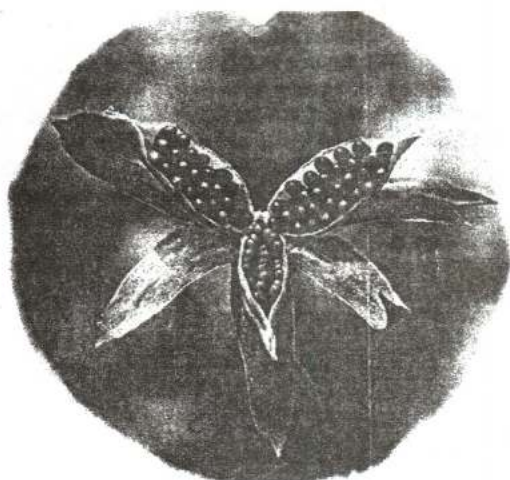
ANSWER Blossoms fall after they have done their job. A blossom's job is to get its pistil fertilized by pollen. After pollen comes to rest on the pistil, the bottom of the pistil swells and fruits starts to grow. Inside the fruit are many seeds. When the seeds fall to the ground new plants will grow from them. Later, the plants will grow new blossoms of their own.



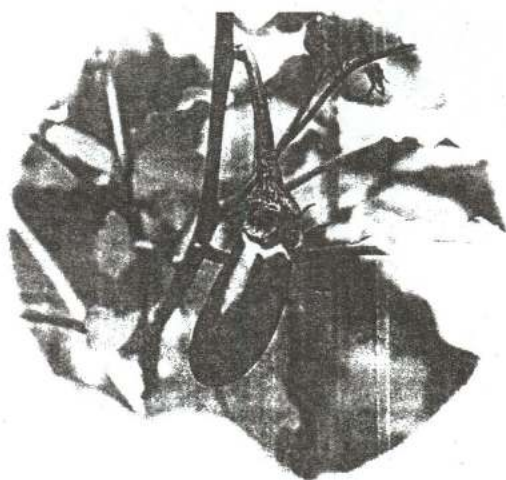
Pansy



Aubergine

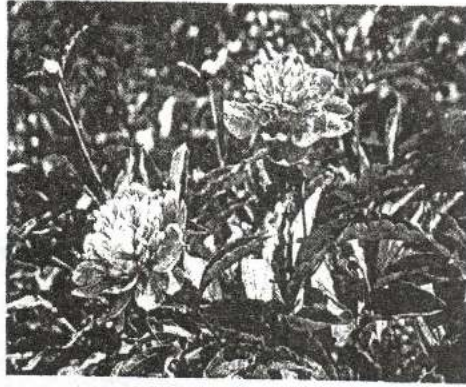


Ripe seeds inside opened pods



The seeds are inside the fruit

Sometimes, seeds are not the easiest way to grow a new plant. New bush peonies are grown by dividing the shoots.



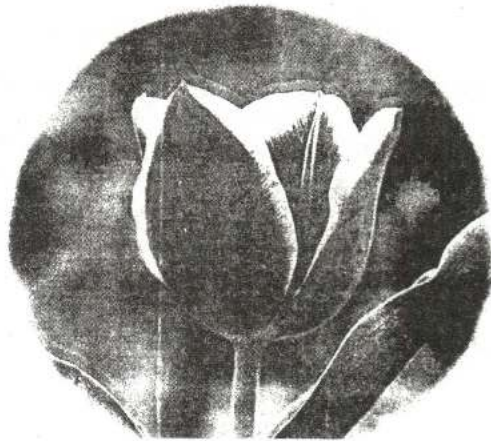
Double-flowered peony

Flowering plants bloom so they can reproduce. After flowers bloom, those that had pollen deposited on their pistils develop fruits and produce seeds. The seeds fall to the ground, sprout and grow. This is known as seed propagation. But some flowering plants can also be reproduced by vegetative propagation: the planting of bulbs, or the cutting and planting of offshoots.

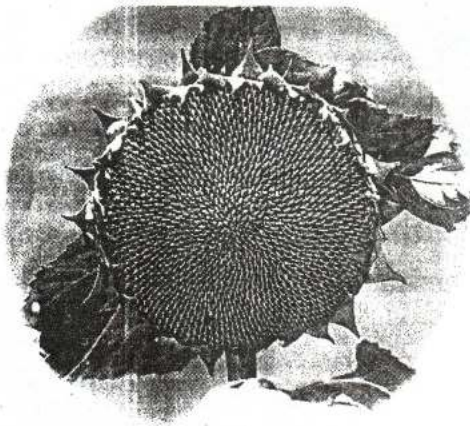
Most people do not know that tulips make seeds. This is because they also make bulbs. Gardeners usually grow tulips from bulbs



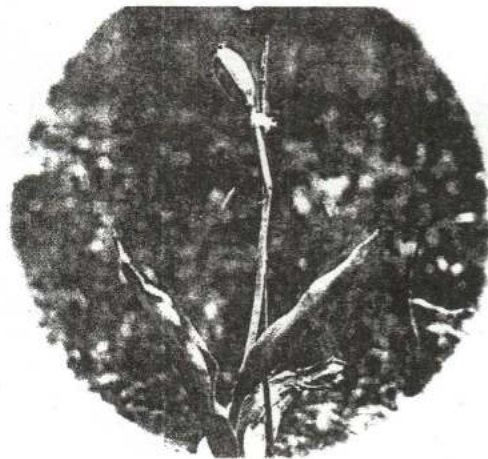
Sunflower



Tulip



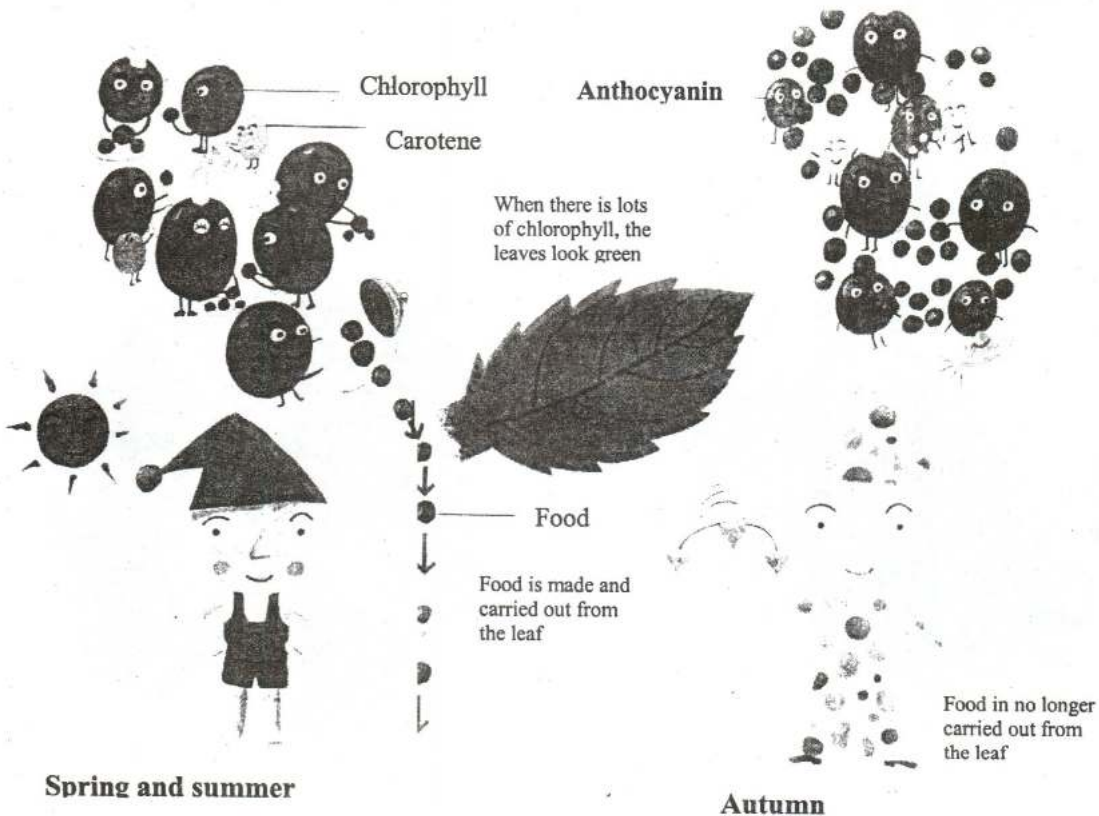
It has many, many seeds



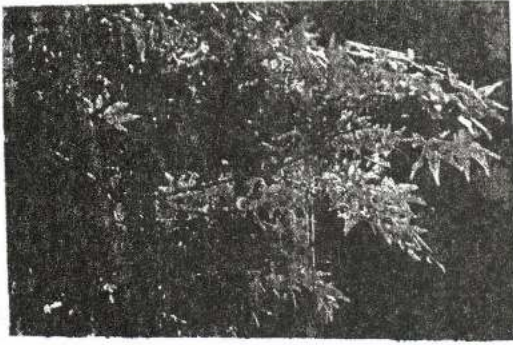
The fruit is a capsule with many seeds

? Why Do Leaves Change Colour When It Gets Cold?

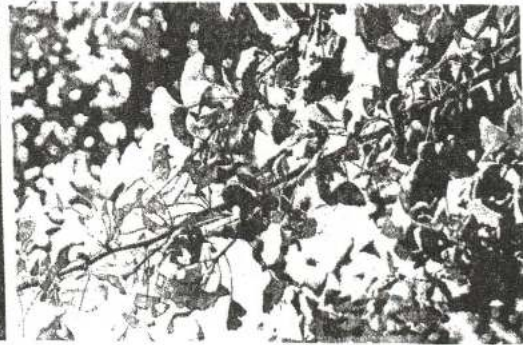
ANSWER Leaves make food from sunlight. To absorb the sunlight, they use a lot of green material called chlorophyll and some yellow material called carotene. The food is sent from the leaves to the roots. When the days get shorter and colder, the path our from each leaf closes and the leaf stops making food. The green chlorophyll breaks down, letting the left in the leaf makes a red material called anthocyanin. So leaves turn yellow and red in the autumn.



■ Leaves that turn red or yellow when it gets cold

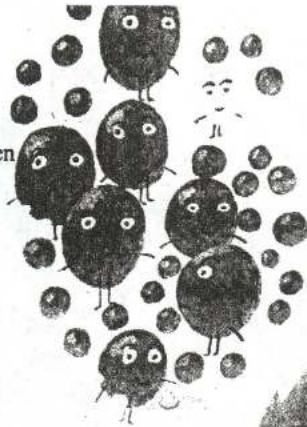


Maple: The leaves make anthocyanin and carotene too, so they turn bright red.



Ginkgo: Its leaves have only carotene after the chlorophyll goes away, so they turn yellow

As the chlorophyll breaks down, the green leaves turn yellow.



The leftover food has turned red, so the leaves are red

After a while, leaves that have changed colour will fall off the tree. These dead leaves will rot and fertilize the soil



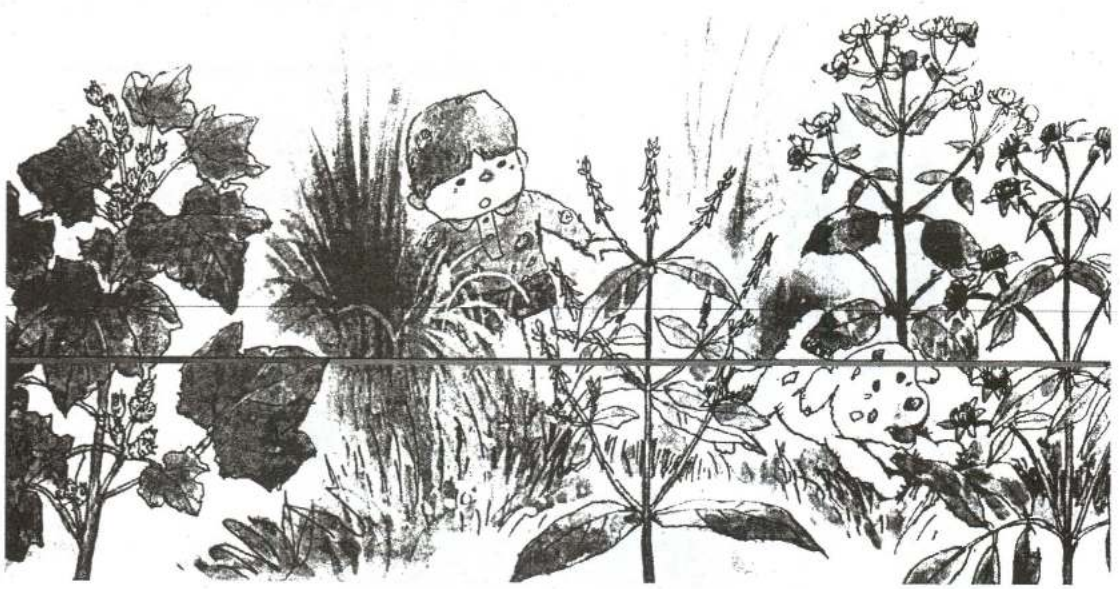
Winter

● To the parent

Leaves are green because they have a large amount of chlorophyll, the primary pigment in photosynthesis. They also contain yellow carotene, which serves as an accessory photosynthetic pigment. In cold climates, as the days grow shorter and the base of each leaf stalk, closing the leaves off from the rest of the tree. Chlorophyll breaks down, and carotene makes the leaves appear yellow. Nutrients remaining in the leaves form a red pigment called anthocyanin. Differing amounts of these pigments create a variety of autumn colours.

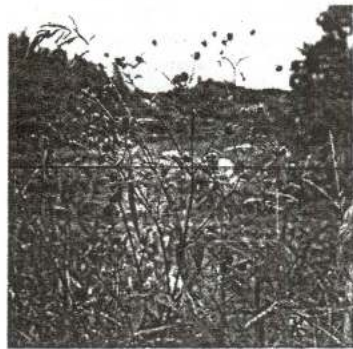
? Why Do Some Seeds Stick to Us?

ANSWER Seeds need to travel to new places so they can sprout and grow. But seeds cannot travel by themselves. So some seeds stick to people's clothes and to the fur of animals. In this way they are carried away from their parent plant to where they can grow and make their own seeds.

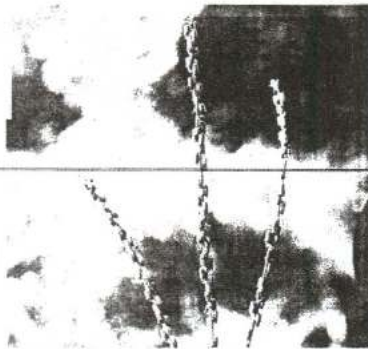


Seeds that stick to us

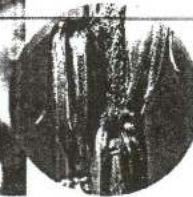
These burs stick with hooks.



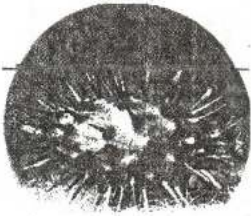
This has only two needles but it sticks as though it had twenty



You cannot see the hooks, but you will know when this one sticks to you

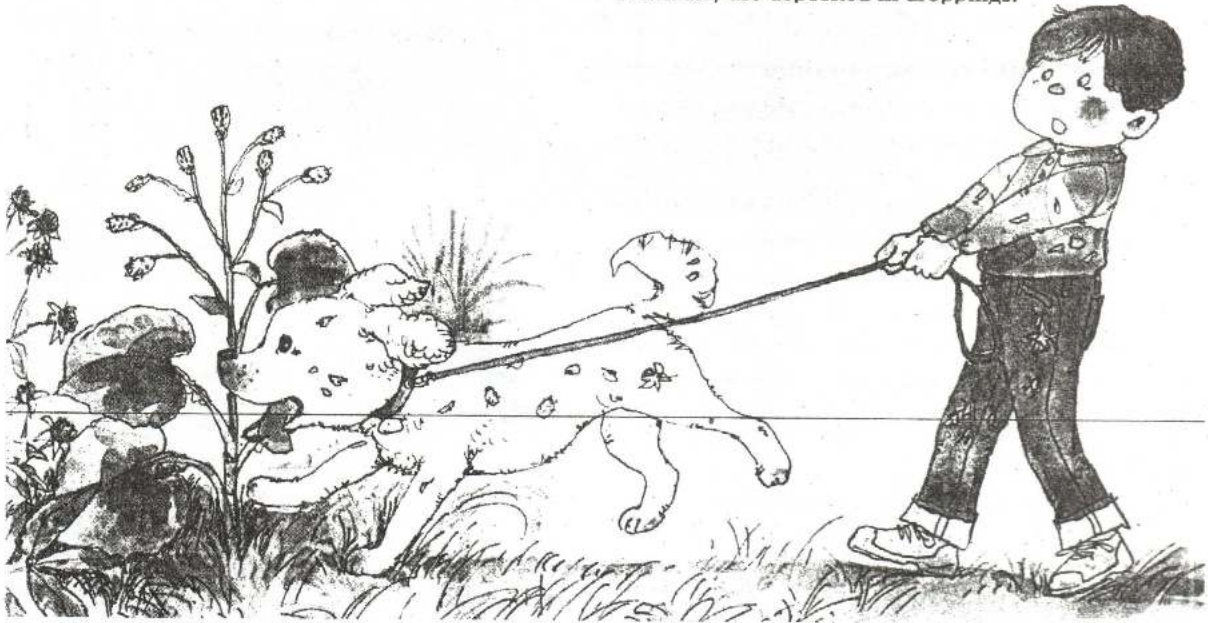


Cocklebur: It has many prickles to help it stick.

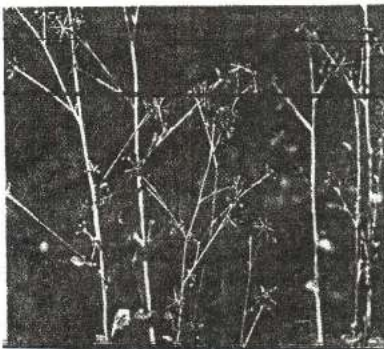


● **To the Parent.**

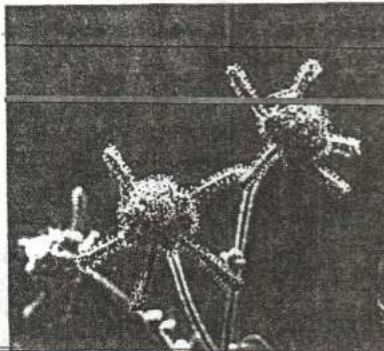
Methods by which seeds are dispersed include being borne by the wind, as in the case of the dandelion and eulalia; being scattered by the plant itself, as in the case of the touch-me-not and the wood sorrel; and being carried by animals, as in the case of those shown here. Some seeds are transported inside animals and birds: When fruits containing seeds, such as cherries, are eaten and all by a bird or animal, the seeds pass through the bird's or animal's digestive tract and eventually are deposited in droppings.



These seeds are just sticky



Eight nodules might mean that it is eight times as sticky!



This one is pretty, all right, but it is sticky, too





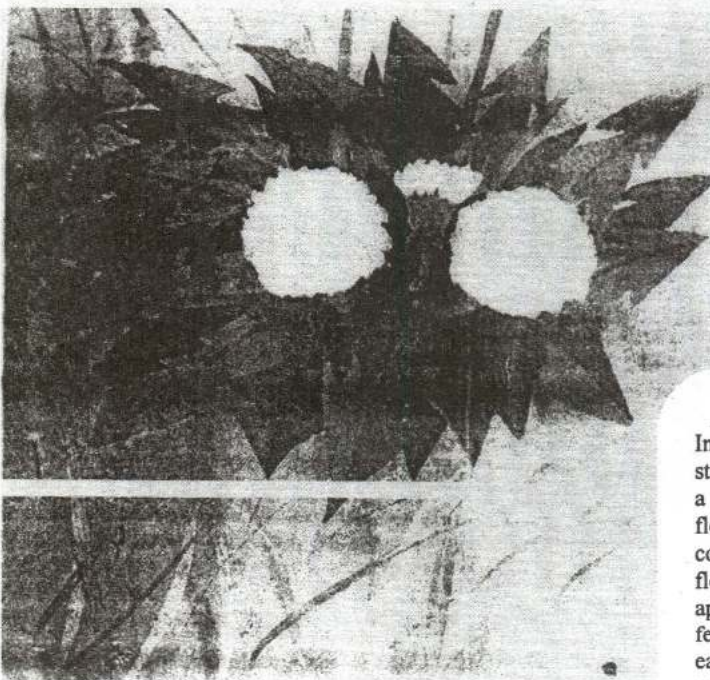
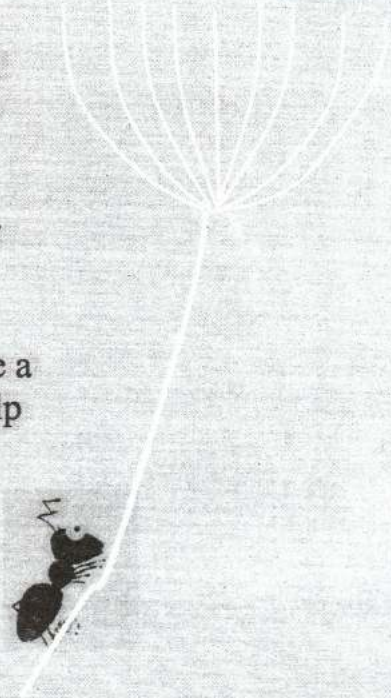
Why Are Dandelions So Fluffy?

UNIT 8

Lesson VII

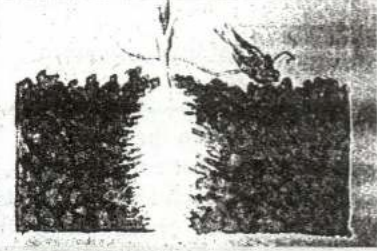
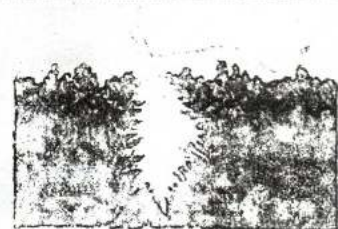
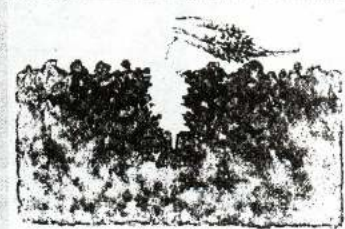
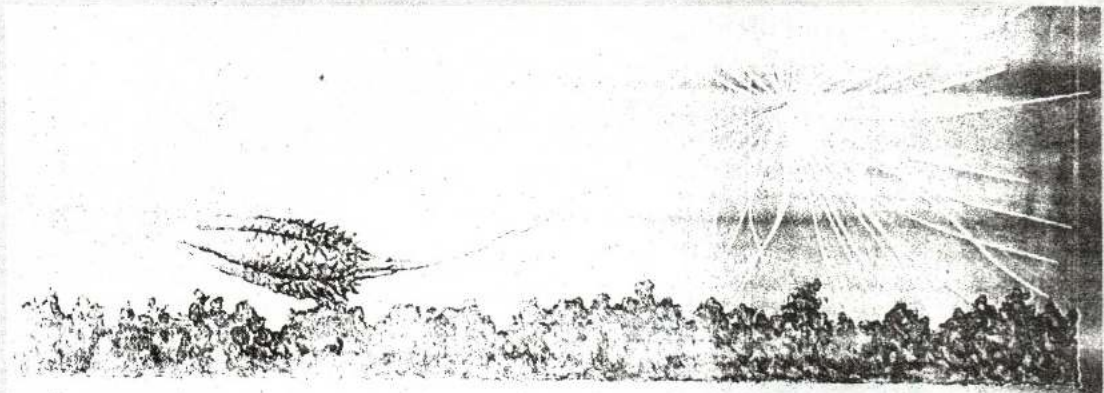
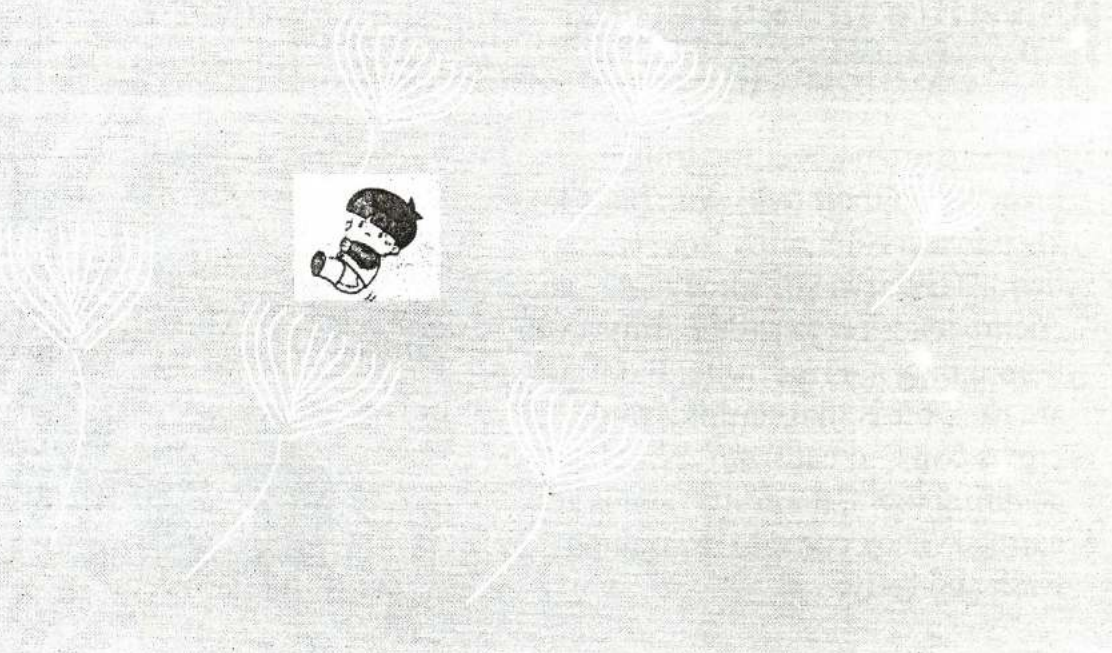
ANSWER

The flower of the dandelion is really a large number of small flowers gathered together. After dandelions bloom, each of their many flowers makes a seed. Each of these seeds has white, fluffy threads on it. The wind blows this fluff away, and the seed is carried with it. When the seed comes down to the ground again, it will sprout and become a new dandelion. Sometimes children help by blowing the fluff away.



• To the Parent

In the flower of the dandelion, each petal has stamens and a pistil. Thus, even though it looks like a single flower, it is really a collection of many flowers. Such a blossom is known as an aggregate or compound flower. The seeds are produced after the flower blooms. As the seeds mature a long shaft appears at the tip of each one. Then a ring of fine, feathery hairs, called the pappus, opens out from each shaft and enables the dandelion seed to be carried by the wind to a place that is suitable for sprouting.



The seed floats to the ground

It puts down roots

Soon a dandelion grows

? Why Do They Put Bags on Growing Fruit

UNIT 8 Lesson VIII

ANSWER Farmers often cover the fruits growing on their trees with bags to keep insects and birds from eating them. The larvae of some moths and cockroaches try to eat the fruits even before they are ripe. After the fruits are ripe, birds like starlings and crows come to eat them. With bags covering them, the fruits do not get harmed. They come to us looking fresh and tasty.



When the fruit is little, a small bag covers it. As the fruit grows, a larger bag replaces the small one.

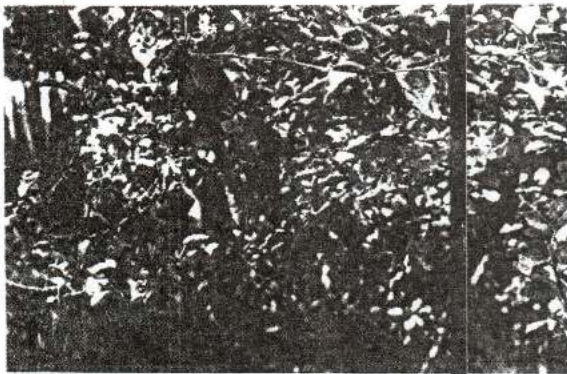
Insects and birds eat fruits that are not covered by bags

• To the Parent

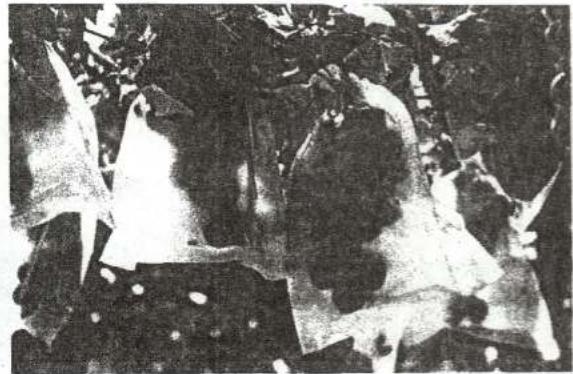
Among the insects that eat pears, peaches and other fruits are the cockroach and the codling moth larva. Farmers protect their orchards from the ravages of these insects by covering the fruits with bags. With apples, the bags also affect the way in which sunlight strikes the fruits and are used to improve the colour. The bags protect the fruits from birds also, as well as from insects.



A juicy peach is safe from hungry insects



A tree full of apples covered with bags



Even bunches of grapes grow in bags.

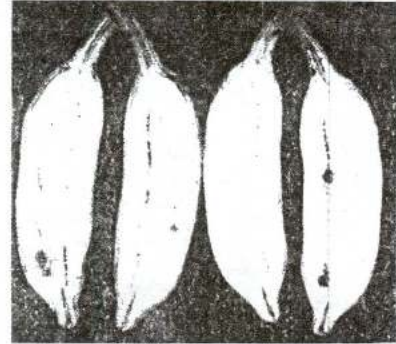


Why Don't Bananas Have Seeds?

UNIT 8
Lesson IX

ANSWER

Bananas did have seeds at one time. But the seeds made them hard to eat. So the people who grew the kinds of bananas that we like to eat found a way to make them without seeds. Even now there are still some types of bananas that have seeds.



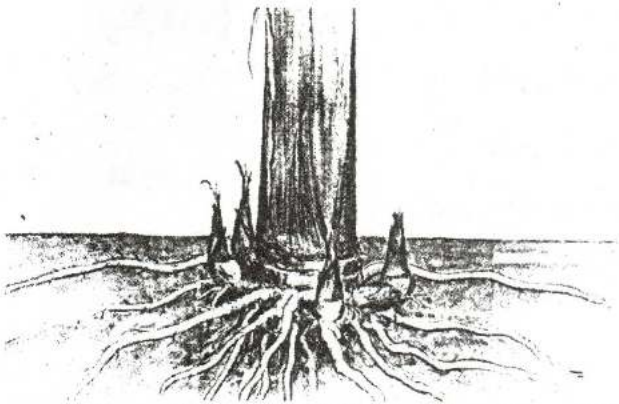
A banana cut down the middle. The black things you see are its seeds.



If bananas had seeds, they would be hard to eat.

? How Are New Banana Plants Grown without Seeds?

New sprouts grow from the roots on the banana plant. These are cut off and replanted, and new plants with seedless bananas grow from them. Bananas grow only in warm tropical countries.



off and planted.

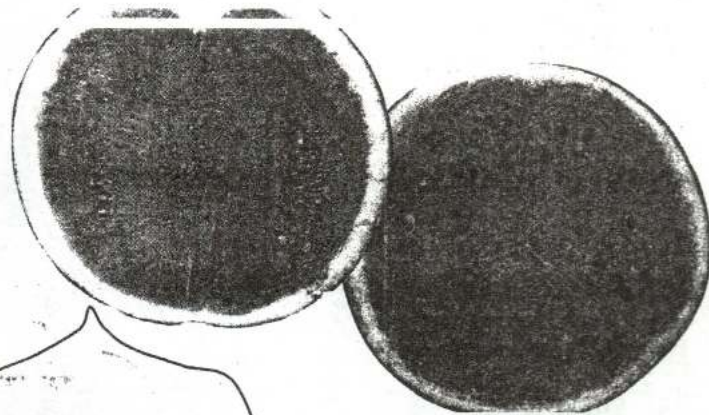


Other Kinds of Tasty Fruits without Seeds.

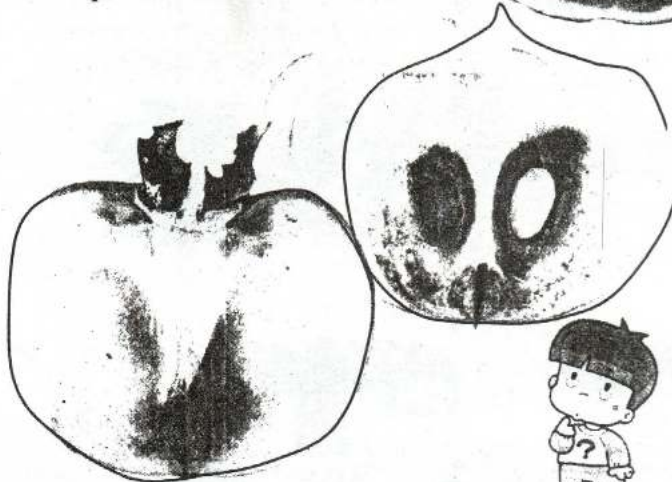
All the fruits here usually have seeds. But scientists have found ways to grow these delicacies without seeds too



Grape



Watermelon



Persimmon

● To the Parent

Most people think that bananas have always been seedless, but originally they did have seeds. In fact, many varieties of wild bananas growing in Southeast Asia and other warm areas have large seeds from which new plants are generated. But the seedless, cultivated bananas we enjoy eating are produced by banana plants grown from cutting, as shown above. Chemicals can also be used to produce seedless fruits. In polyploidic breeding, be used to produce such fruits as seedless watermelons, seedless grapes and seedless persimmons.

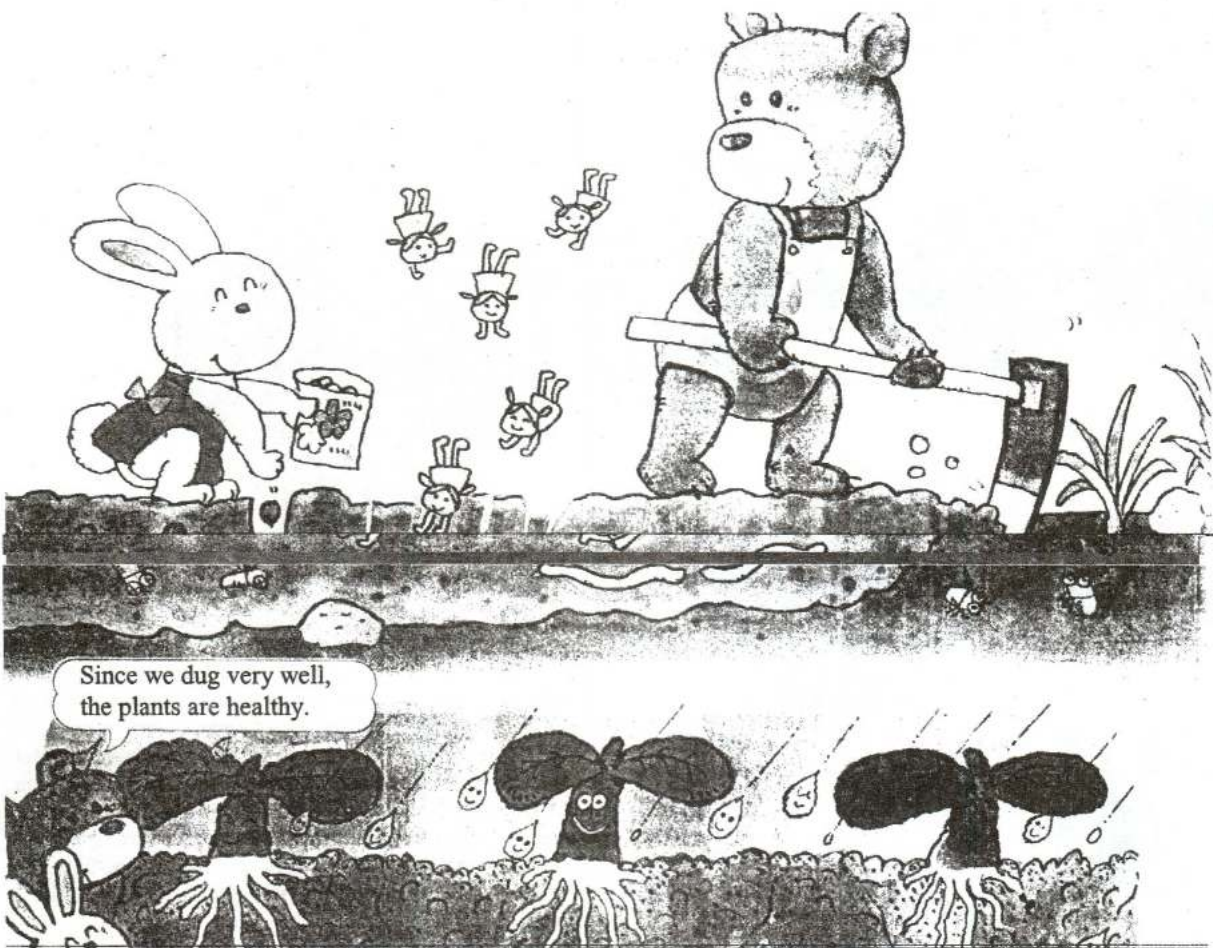


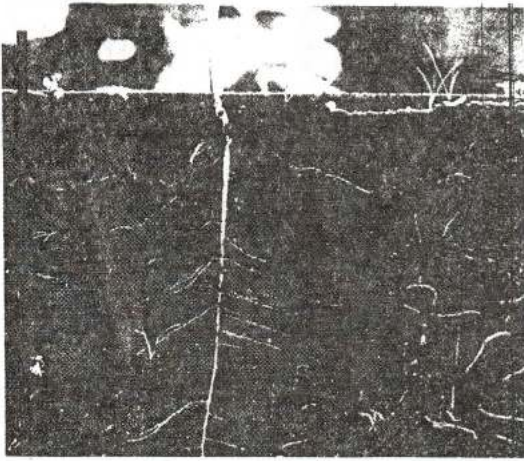
? Why Do We Dig Up the Earth Before We Plant Seeds?

ANSWER We dig up the earth before planting seeds in order to make it easier for the seeds to sprout. Digging up the earth loosens the soil and kills weeds. It helps air mix into the soil and lets rain soak in better. We also remove rocks and stones when we dig up the soil. All this helps the seeds grow better.



■ If we dig up the earth...

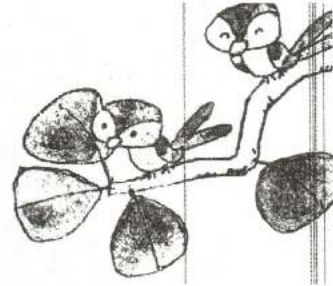




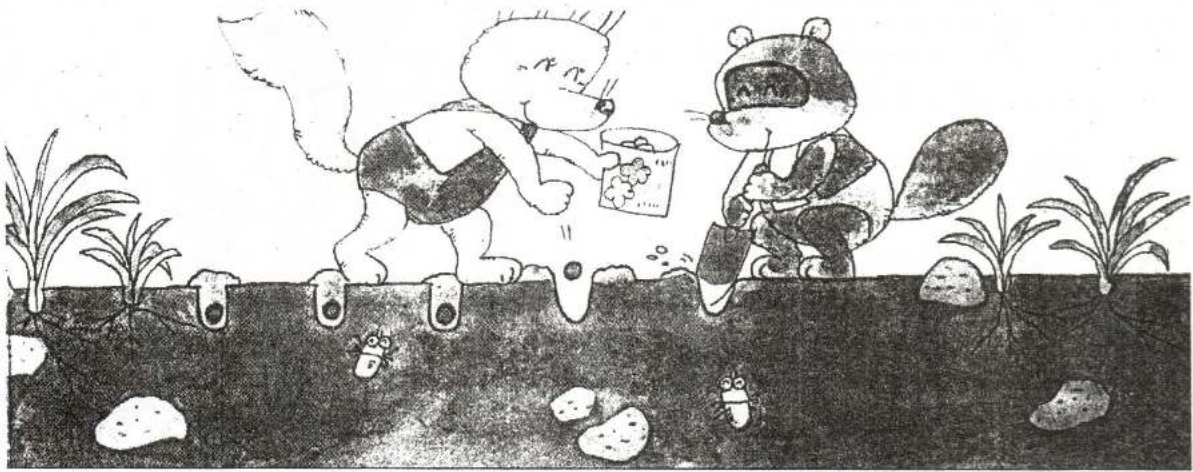
In soil that has been carefully dug, plant roots quickly grow downward and sideways

● To the Parent

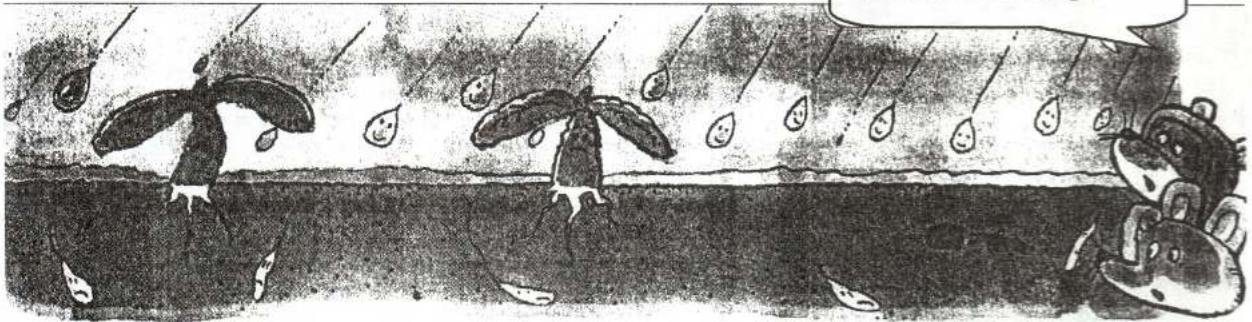
Seeds need moisture, air and the correct temperature if they are to sprout. Unless provided with water, dried seeds will not sprout even after many years. Seeds begin to breathe when they sprout and must have air or they will not survive. Digging up the soil helps the soil to retain rainfall and allows air to circulate freely through the soil. The roots of weeds are also cut in the process. The weeds die and are buried in the soil to become fertilizer. Digging up the soil also makes it soft and loose. That allows the tender young sprouts to push up through the soil to the surface without being damaged, and allows the new roots to push downward faster and more easily. This process of digging into the soil and mixing the soil to prepare it for planting is called tillage.



■ If we do not dig up the earth.....



They don't look so healthy. I wonder what's wrong?



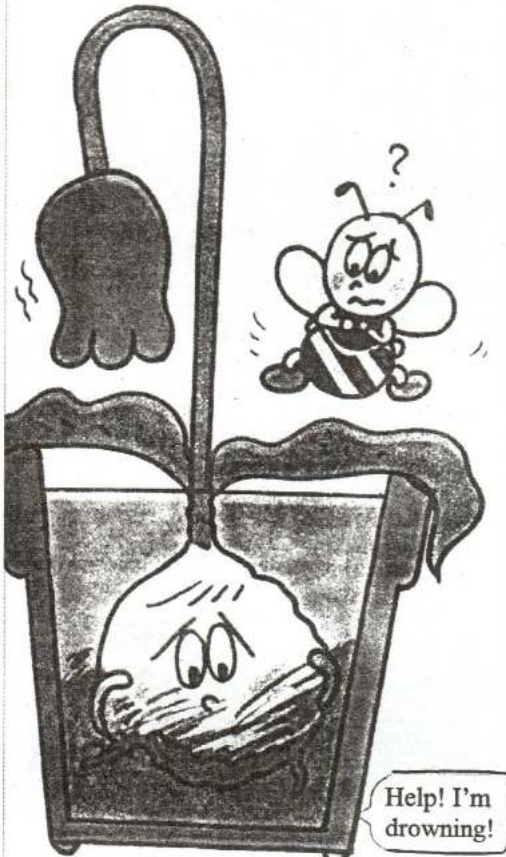
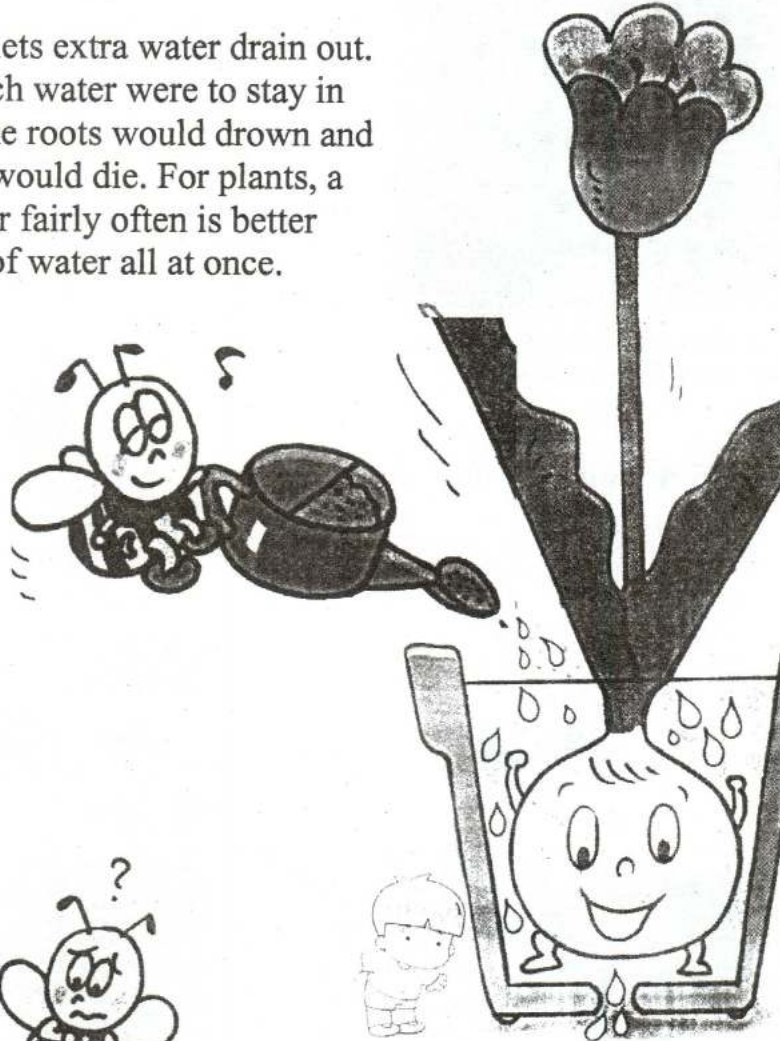


Why Do Flowerpots Have a Hole in the Bottom?

UNIT 8
Lesson V

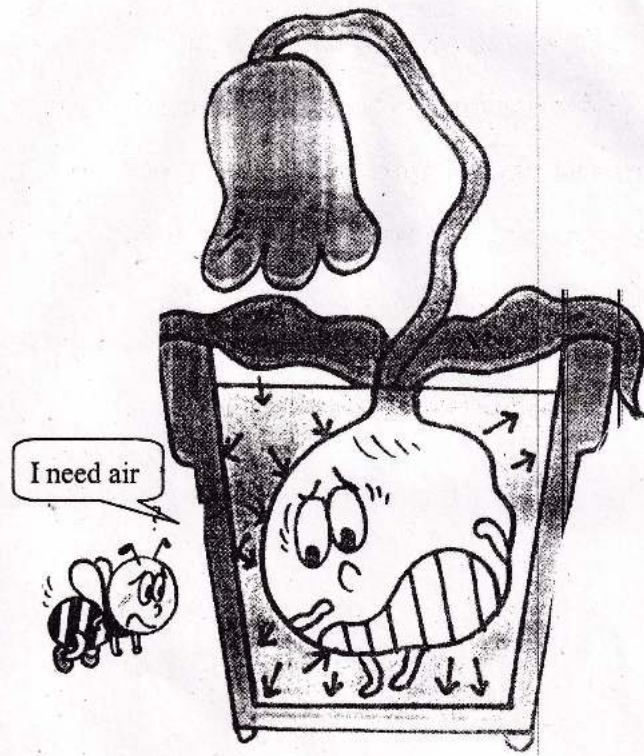
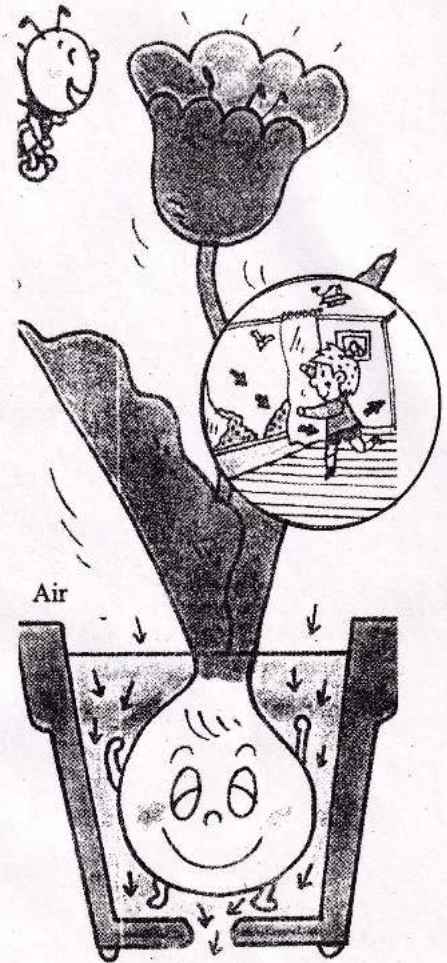
ANSWER

The hole lets extra water drain out. If too much water were to stay in the pot, the roots would drown and the plant would die. For plants, a little water fairly often is better than lots of water all at once.



• To the Parent
If a flowerpot is not properly drained, the water that collects in it can cause the roots and the plant itself to decay. The hole in the pot bottom allows excess water to drain. It also allows air to circulate through the soil in the pot. Air cannot circulate freely unless it has both a way in and a way out. Without a hole in the pot, not enough air gets into the soil. The roots, which need air to breathe, will suffocate without enough of it. In addition to having a hole in the bottom, some pots are made of a porous material so that they can contribute to the breathing process

ANSWER ② The hole in the bottom of a flowerpot also lets air pass through freely. Without this hole, it would be hard for air to pass in and out. There would not be enough air in the soil for the roots to stay healthy. But with lots of air and just the right amount of water, plants grow well.



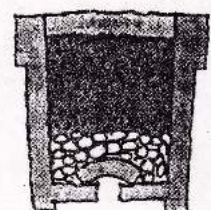
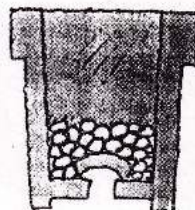
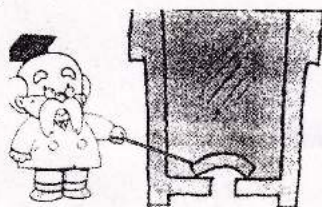
TRY THIS

If you keep these hints in mind when filling a flowerpot with soil, it will be easy for air and water to pass through the soil

Place a small stone or a piece of pot over the hole

Fill the bottom of the pot with loose gravel

Strain the soil through a sifter, then fill the pot.



Answer

The hole in the bottom of a flower pot also lets air pass through freely. Without this hole, it would be hard for air to pass in and out. There would not be enough air in the soil for the roots to stay healthy, but with lots of air and just the right amount of water, plants grow well.

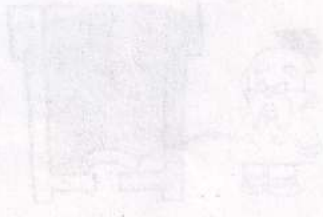


Food air

Why?

If you have a flower pot, you know that when you fill it with soil, it is very hard to get water to pass through the soil.

Place a small piece of paper or a piece of cloth over the hole.



Fill the bottom of the pot with loose gravel.



Put in the soil, and water it. After a few days, the soil will be very hard.





Message

*It is with profound pleasure and added pride.
I appreciate the maiden task shouldered by
Mr. S. Srikumar who has, taken the painstaking
endeavours to help the young learners study enthusiastically the subject -
ENVIRONMENTAL STUDIES.*

*I take this opportunity to congratulate him for his valuable efforts made
to give chances especially to the students of the primary classes.*

*I wish that this venture will be of great benefit to the young learners
and will rapidly grow into a great publication. I fervently hope this book
will cater the needs of those who wish to learn what is environment.*

Signed: V. Gnanakanthan

Principal

Jaffna Hindu Primary School

Jaffna.