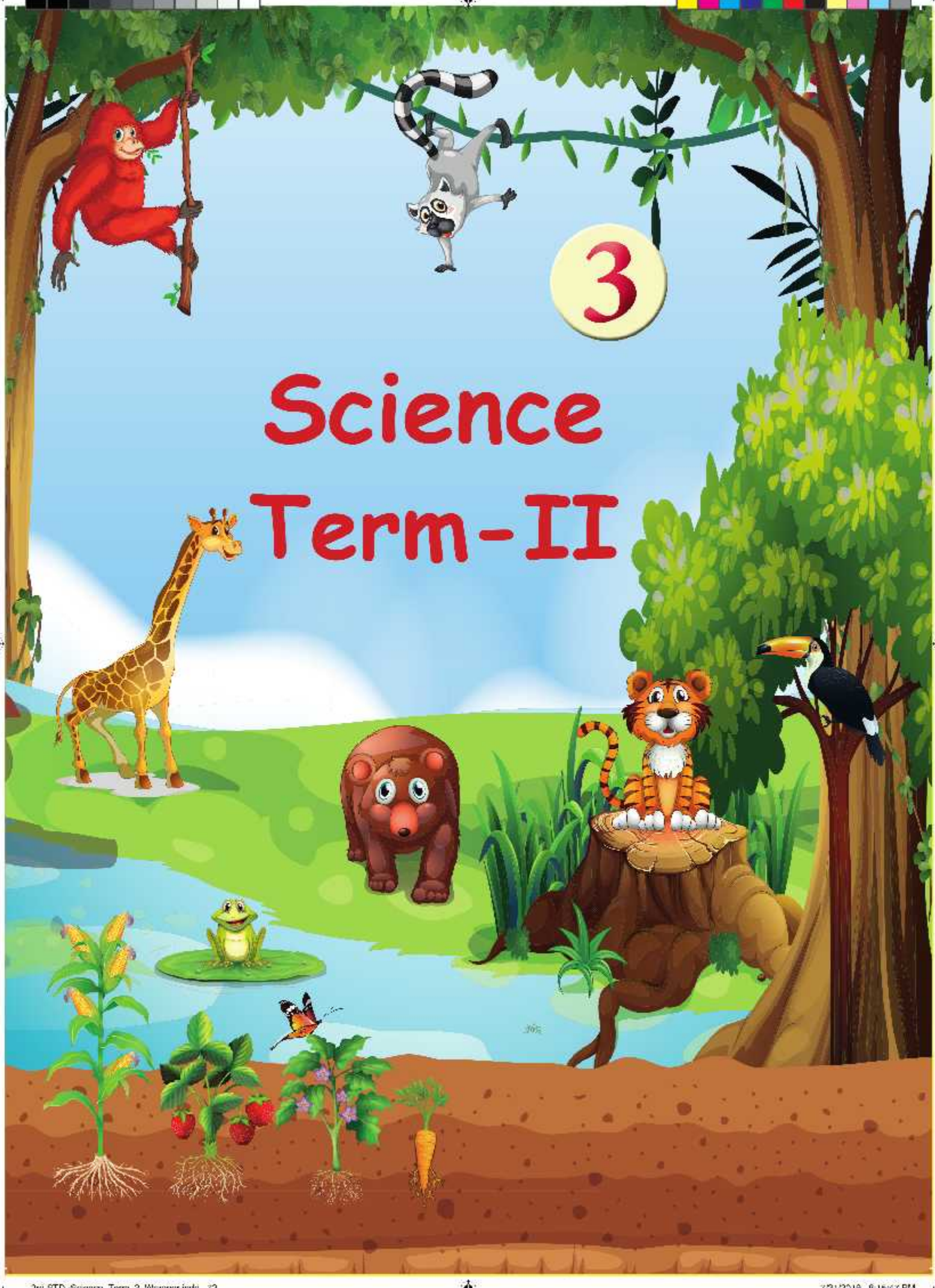

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Unit 1

Food

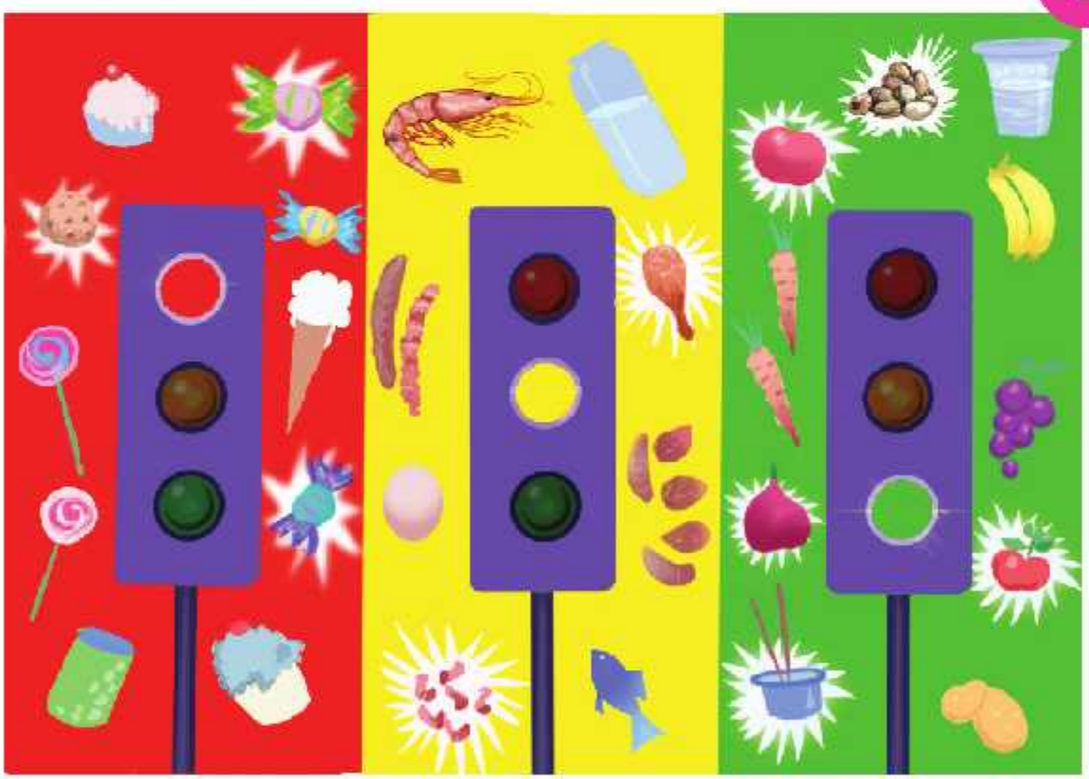
Learning Objectives

After learning this lesson, students will be able to

- classify different nutrients in food
- describe balanced diet
- distinguish between various meals in a day
- understand the different food habits based on the places and age groups
- identify traditional food and explain the advantages of a home garden

Z7H5D2

Warm-up Observe the picture and answer the questions given below.



a. The food items which should be avoided are indicated by ---------- colour.

b. The food items which are healthy are indicated by ---------- colour.

C. The food items which can be eaten in small quantities are indicated by -------- colour.

I. Food Nutrients

Think: Why do you eat every day? What happens if you don't eat sometimes?

Every day we feel hungry and then eat something.
Our body is telling us that it needs food. Why do we need food?

Z9K7R8

- Food gives us energy to work and play.
- Food builds our body.
- Food keeps us healthy.

We eat different food items, some are raw and some are cooked. Each of these food items contains different nutrients. There are **five main nutrients** that our body requires. They are **carbohydrates, proteins, fats, vitamins and minerals.**

1. Carbohydrates

Do You Know? World Food Day is observed on October-16.

Our body needs energy to do work, play and do other activities. Carbohydrates are **energy-giving food.** Food that contains carbohydrate are **rice, wheat, potato, sugar cubes and bread.**





2. Proteins

Proteins build, maintain and replace the tissues in our body. They are also known as **body - building foods.** E.g., **Fish, Milk, Egg, Nuts and Sprouted seeds.**





3. Fats

Fats provide energy to us. They act as the body's **energy reservoir.** Fats also help to keep the body warm during very cold weather. Too much fat in the body may lead to obesity or overweight. Some food items that contain fat are **cheese, butter, ghee, meat, oil and nuts.**

4. Vitamins

Our body needs vitamins to work properly. They **protect** our body from **deficiency diseases**. E.g., **Carrot, Orange, Gooseberry, Papaya and Greens.**





5. Minerals

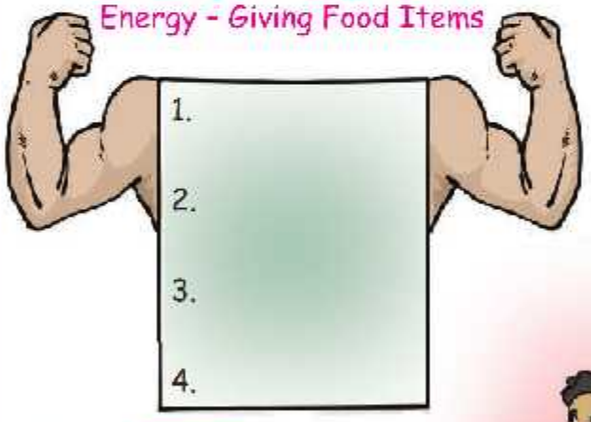
Minerals help in formation of blood, bone, teeth, etc. They **regulate the body functions.** E.g., **Fig, Pear, Garlic, Banana and Apple.**



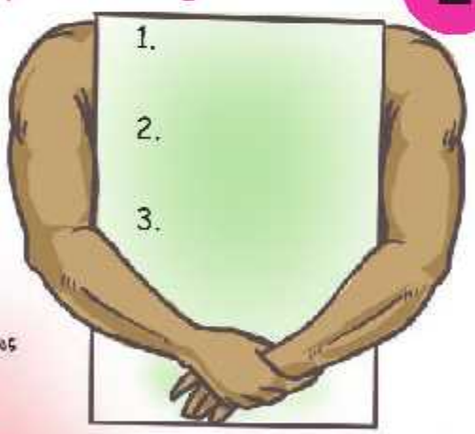


Let us Write

Energy - Giving Food Items



Body - Protecting Food Items



Be Sensitive

Most children love to eat food items like burgers, pizzas and chocolates, which are not good for health. They make children to gain extra weight.

Avoid eating unhealthy foods and eat nutritious food to stay healthy. A healthy snack may include sprouts, fruits and salads.

Body - Building Food Items

1.

2.

3.

4.

Let us Write

A. What are the nutrients present in the following food items?

1. Rice contains _____ .
2. Coconut oil contains _____ .
3. Egg contains _____ .
4. Fig contains _____ .
5. Carrot contains _____ .

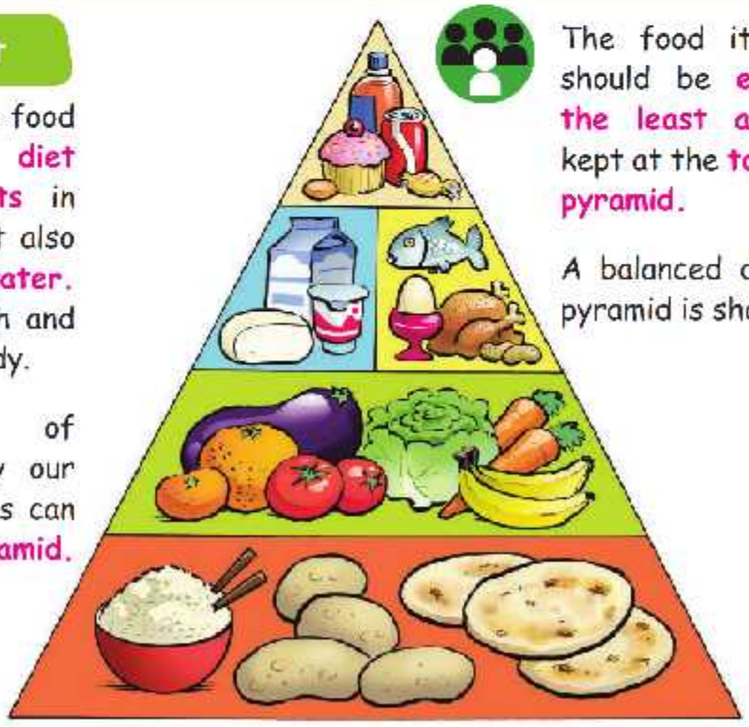
B. Fill in the table given below.

Sl. No	Nutrients	Why do you need it?	Sources (Food items)
1	Carbohydrates	They give us energy to work and play	
2	Vitamins		Carrot
3		They help to build our body	
4	Fats	Reservoir of energy	
5	Minerals		

II. Balanced diet

Diet refers to the food we eat. A **balanced diet** contains **all nutrients** in the right amounts. It also includes **fibre and water.** It helps in the growth and development of our body.

The quantity of nutrients required by our body and their sources can be shown by a **food pyramid.**



The food item that should be **eaten in the least amount** is kept at the **top of the pyramid.**

A balanced diet food pyramid is shown here.

Roughage, also known as fibre is an indigestible food that your body cannot absorb. It is present in food such as legumes, whole grains and vegetables.

Milk is a complete balanced diet.

More to know

- Carrot contains Vitamin-A
- Bran contains Vitamin-B
- Gooseberry contains Vitamin-C
- Milk contains Vitamin-D
- Sunflower oil contains Vitamin-E
- Cabbage contains Vitamin-K

Let us Find

Unscramble the following words and search them in the given grid (One is done for you).

ELBATEGEV - VEGETABLE

AITVIMN -

INMELAR -

MKIL -

WTERA -

HEGE -

RCIE -

GEG -

FSHI -

X	N	Z	R	V	W	S	R	Y
V	E	G	E	T	A	B	L	E
I	W	H	M	k	T	J	O	C
T	B	E	I	C	E	F	H	I
A	J	E	L	S	R	X	Q	R
M	L	A	K	W	E	G	G	I
I	C	M	I	N	E	R	A	L
N	H	S	I	F	H	D	A	N

Let us Do

Design a meal for your lunch.

Health Care!

Drink plenty of water every day. We should not spill the food while eating.

My Menu

To check whether it is a balanced diet, split your meal according to the nutrients.

Proteins	Carbohydrates	Vitamins and Minerals	Fats

III. Meals in a day

A meal is what we eat during a particular time of the day. **Breakfast, lunch and dinner are the three main meals we eat every day.**

Kaviya and Suriya are studying III standard. They leave home at **8.00 am** to go to school and they have their **breakfast** before going to school. Their mother usually makes food items like idly, dosa, bread with egg, ragi koozh, idiyappam, poori, aappam and pongal.

Think: What do you usually eat for breakfast?

At **12.40 pm,** the school bell rings to announce **lunch** break. Kaviya and Suriya both **wash their hands** and sit down to eat lunch with their friends. All of them place their **lunch towel** on the floor and start eating.

Kaviya, Suriya and their friends share their lunch, which include lemon rice, fruit salad, greens, rice along with sambar, biriyani, tomato rice, vegetable salad, curd rice, tamarind rice and cereals.

Think: Which of the food items that are brought by your friends for lunch?

Kaviya and Suriya have their dinner half an hour before going to bed. They like having chappathi, milk and fruits, and on some days idli, dosa or rice.

Think: At what time you go to bed every day? At what time you have your dinner?

Let us Do

Ask your friends what they like to eat and complete the table.

Friends' Name	Breakfast	Lunch	Dinner

Try to Answer

Look at the pictures of different activities.

1. Which activities are healthy? ----------

2. Which activities are not so healthy? ----------

The amount of time you should spend for washing your hands each time before eating is at least 20 seconds. That is about as long as it takes you to sing the 'happy birthday' song twice! Try it when you wash your hands next time.

IV. Food Habits in Different Places

Food habit of people at a place **depends on the climate, culture and availability of food.** For example, in coastal areas, people eat a lot of sea food. India is a big country with different climate and culture.

South Indians depend on rice, dhal, coconut, jaggery for their food. Hence, they make food like Idly, Sambar, Kozhukkattai and Payasam.

North Indians depend on wheat, onions, milk and curd. Hence, they make foods like Chappathi, Paratha and Lassi.

Food habits in Different Age Groups

The amount of food a person needs depends on his age. These needs change with age groups and level of physical activity. **Athletes** may need **more** amount of **energy** during training. Young children should eat a wide variety of food.

The following food items can be eaten by the people of different age groups in order to maintain good health.

Children

Milk, honey, fruits, vegetables, whole grains, egg, sprouted seeds and fish.

Young Adult

All vegetables and fruits, sea food, greens, milk and milk products.

Old Adult

Fibrous food, low fat dairy products, food with less salt, ragi, thinai and pearl millet (kambu).

Try to Answer

Some of the famous food items of Tamil Nadu are given below. Write the food items of the particular place.

(halwa, murukku, jackfruit, spices, kadalai mittai, mango, tea)

1. Manapparai is famous for _____.
2. The nilgiris is famous for _____.
3. Panruti is famous for _____.
4. Kollimalai is famous for _____.
5. Tirunelveli is famous for _____.
6. Kovilpatti is famous for _____.
7. Salem is famous for _____.

Let us Discuss

Observe the pictures. Who needs more nutritious food? Why?

Try to Answer

Do your parents prepare the same food items for all festivals? If not, write the name of special food items prepared on different festivals.

Sl. No	Name of the festivals	Food items prepared
1		
2		
3		
4		
5		

Compare and discuss your list with that of your friends'.

V. Traditional Food

Our ancestors ate food that were easily available from nature, which lead to healthy lives. Few **natural foods** are **Ragi, Thinai, Samai, Kuthiraivaali, Varagu and Kambu.**

Different Varities of Ragi Food : Ragi ball, Dosa, Adai, Vermicelli and Biscuits.

Do you eat Ragi? Of all the cereals we eat, ragi is the best body builder and the disease fighter.

Home Garden

Cultivation of crops in a small available place in house-holds is known a **Home garden or Kitchen garden or Nutrition garden.** E.g., Vegetables like tomatoes, brinjal, snake gourd, snap beans, lady's finger and fruits like banana, lemon and also herbs.

Advantage of Home Garden

- It is the easiest method.
- Waste water can be reused.
- It saves our money.
- We get vegetables which are fresh and high in nutritive value.

Let us Do

A. Colour the circle in 'GREEN' for traditional food and 'RED' for modern food.

Ragi Koozh ◯	Pizza ◯	Thinai ◯	Ragi Ball ◯
Samai Rice ◯	Kambu ◯	Paratha ◯	Noodles ◯
Ragi Adai ◯	Burger ◯	Biriyani ◯	Chips ◯

B. Using watercan / coconut shells, make a mini garden in your class rooms.

EVALUATION

B1U6B3

I. Choose and write the correct answer.

1. Bread, wheat and potato are rich in _____ .
   a. fats b. carbohydrate c. protein d. roughage

2. A balanced diet contains _____ .
   a. Carbohydrates and vitamins b. Proteins, fats and minerals
   c. Fibre and water d. All the above

3. The Vitamin present in carrot is _____ .
   a. Vitamin-K b. Vitamin-A c. Vitamin-D d. Vitamin-E

4. Which of these things are BAD for you?
   a. Eating green vegetables b. Washing vegetables before cutting them
   c. Eating lot of fat food items d. Eating lot of pulses

5. The given picture shows that Raman is most likely eating his
   a. Breakfast b. Lunch c. Dinner

II. Fill in the blanks.

1. Food rich in _____ are called body-building food.
2. _____ helps in proper functioning of our body.
3. A _____ is necessary for the proper growth and development of our body.
4. Sprouted seeds contain more _____.
5. _____ is the second meal of a day.

III. Match the following.

1.	Carbohydrates and fats	-	Supports body growth
2.	Vitamins	-	Regulates body functions
3.	Protein	-	Energy-giving food
4.	Minerals	-	Fights diseases

IV. Answer the following questions.

1. How many nutrients are there? What are they?
2. Siva is 6 years old. He needs to have good amount of proteins. Give reason.
3. What is a balanced diet?
4. What are the meals in a day?
5. What are some traditional food items?
6. Write any three advantage of a Home Garden.

V. Project work.

Collect pictures and prepare a chart on "Food Nutrients".

Unit 2

Water

Learning Objectives

After learning this lesson, students will be able to

- understand the importance water
- list the sources of water
- understand the methods of preventing wastage of water
- explain the methods to conserve water bodies
- know about Problems caused due to stagnant water

Q8G7J9

Water... Water!

Rhyme Time

A thirsty bird from far away
Looked for water on its way
Empty ponds and lakes dry
Everywhere did it try.

Suddenly it spotted a dripping tap
A boy carelessly leaving it open
Was walking away.

The bird flew down and drank
To the little boy it said,
"Water is precious do not waste it
Close the tap after you drink!"

The boy realised and said, 'sorry'.
He closed the tap and went satisfied
The bird flew on singing a happy song.

I. Water -A primary source of life

Water is one of the most important resources on Earth. All living things like small organisms, plants and animals need water to survive. People use water for various purposes. Rain is one of the main sources of water.

Do you know?

- A camel can drink 60 to 100 litres of water at a time and live without water for several days.
- World Water Day is observed on 22nd March.

Let us Write

Observe the picture and fill in the blanks.

We need water to ---------- our face.

We need water to ..... our teeth.

We need water to ..... our food.

We need water to ..... our vessels.

We need water to ----------.

Let us Do

A. Tick (✓) the activities for which water is needed.

To play	☐	To grow plant	☐	To row a boat	☐
To sing	☐	To write	☐	To knead dough	☐
To run a fan	☐	To paint pictures	☐	To wash dress	☐

B. Name any four activities which you can do without water.

---------- ---------- ---------- ----------

Let us Discuss

We find animals in this picture near a water source. Why they are gathered here?

Write few lines about this picture.

_____

Wild animals need water. Hence, they come to water bodies in the forests. Just like us, animals too drink water when they are thirsty.

Ask your teacher:
Why wild animals are entering into human habitat?

II. Potable Water

Drinking water is known as potable water. Potable water is water that is good to drink and useful for food preparation.

Potable Water should be:

- ❖ free from dangerous chemicals.
- ❖ transparent.
- ❖ odourless and colourless.
- ❖ free from bacteria which cause diseases.

Different Sources of Drinking Water

Water is available in many natural sources, but not all the water sources are suitable for drinking. Water should be boiled to kill the germs in it, and only then it is suitable for drinking. A few sources of water are rain, well, river, lake and stream.

Let us Write

Rearrange the jumbled letters to find out the different sources of water.

E.g., Rain (anir)

_____ (a l k e) _____ (o p d n) _____ (m e r a t s)

_____ (e l l w) _____ (e a s) _____ (o n a e c)

Let us Discuss

Observe the pictures. Put a tick (✓) for the water which is good for drinking. Discuss about these with your friends.

Try to Answer

I freeze when I am cold and

I fall softly as snow,

I melt in the Sun and down the mountain I flow.

Who am I?_____

Let us Do — Let us assemble a Simple Pump

Materials needed: Any hollow tube – PVC, metal or even a long papaya stem

Procedure:

Hold the tube with your left hand and move it up and down into a bucket of water. Keep the palm of your right hand on the top of the tube and open and close it with each up and down reciprocation. Soon, water will start squirting out. Here the up-down motion of the left hand does the pumping while the right palm acts like a valve.

More to know

Each person on the Earth requires at least 20 to 50 litres of clean and safe water per day for drinking and other activities.

X6S4W5

III. Why should we save water?

Only 3% of the water in the entire Earth is freshwater. Water is precious. So, we should never waste water.

Some methods to prevent wastage of water:

- Never allow water to overflow from buckets.
- Wash fruits and vegetables in a bowl of water and not under running tap water.
- Always close the taps while brushing the teeth.
- Use left over water in your water bottle to water a potted plant.
- Turn off the tap after each use.
- Use a sprinkler to water the garden.

Try to Answer

Write some activities through which we can save water.

Let us Do

Answer the following questions by putting a tick (✓). If your answer is different from all of the given pictures, write its name in the empty box.

1. Which one do you use to drink water?




2. Which of these is used to store drinking water at your home?




3. Where do you get your drinking water from?




Let us Complete

Join the dots and colour the picture. Complete the message.

How people stored water in olden days?

In olden days, people stored water in different ways. Few methods are well, water tanks in forts, draw well, reservoirs, rivers and bunds, tanks, dams and bore wells.

Save every ..... water

IV. Conservation of Water Bodies

All the water that we get comes from rain. When it rains, some water flows over the ground giving rise to streams and rivers. Some water gets collected in low lying areas such as ponds and lakes. The flow of the river is blocked by building a dam across it. Some rainwater seeps into the ground as underground water.

Lake

It is a large area filled with water surrounded by land. It is usually a part of a river or some other water source.

Pond

A pond is a body of stagnant water, either natural or artificial; it is smaller than a lake.

Reservoirs

These are built in areas of low rainfall or in areas where there is no major river. Most of reservoirs are built using stones. Sathiyamoorthy reservoir located at Tiruvallur district in Poondi village.

Tanks

A water tank is a container for storing water for our daily use.

Methods to Conserve Water Bodies

- Deepening of ponds and lakes
- Plant trees at the bank of the lake and pond
- Reduce water pollution
- Avoid digging too many wells in a region

Use your brain power...

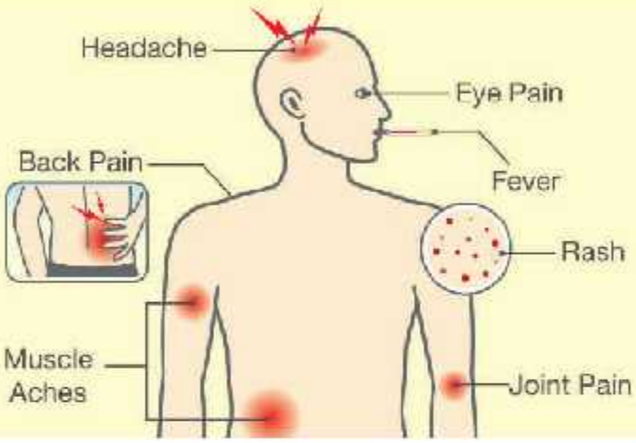
The trees in the forests need water to grow. From where do they get the water?

Problems caused due to Stagnation of Water

- Stagnant water can become a breeding ground for the mosquitoes that transmit diseases. Malaria and Dengue Fever are the main dangers of stagnant water.
- Waterborne diseases such as cholera, dysentery, typhoid are caused by drinking unclean water.

Symptoms of Dengue Fever:

- Severe headache
- Rashes on the arms and the legs
- Extreme tiredness
- Sudden onset of fever that lasts 3-7 days



Discuss with your friends and write. What will happen, if you drink unclean water?

_____

Let us Do

A. What are the activities to save water? If true put (✓), if false put (x).

1. We should wash our vehicles everyday. ☐
2. Planting more trees leads to rain fall. ☐
3. We can bathe in shower to save water. ☐
4. It is necessary to collect rain water. ☐

B. Look at the pictures and answer the following.

If we fill them with water,

1. Which will contain less water? ----------
2. Which will contain more water? ----------
3. How could you tell? ----------

Let us Do

Read the table given below. Then put tick (✓) in the column of the sources of water used for various purposes.

Uses of Water	River	Pond	Sea	Stream	Hand Pump	Well	Tap
Cooking							
Drinking							
Bathing							
Gardening							
Washing Clothes							
Washing Vessels							
Washing Domestic Animals							

Always remember everyone should take care and keep the public resources of water clean. It is each one's responsibility to do so.

EVALUATION

A5H1Z7

I. **Choose the correct answer.**

1. Which is the main source of water?

(a) Lake (b) Sea (c) Rain

2. ---------- of the water in the entire Earth is freshwater.

(a) 3% (b) 0.3% (c) 30%

3. By _____ water, we can kill the germs.

(a) boiling (b) cooling (c) filtering

4. Which of these is not true?

(a) Plants and animals need water too (b) We should always waste water
(c) We should use water carefully (d) Water is precious

5. Where does the rain water go after falling on the ground?

1. Seeps into the ground 2. Plants absorb the water
3. Mingles with sea and ocean 4. Mixes with lake and pond

(a) 1 and 2 (b) 1, 3 and 4 (c) 1, 2, 3 and 4

II. Fill in the blanks.

1. Drinking water is known as_____. (pot water / potable water)
2. Water that collects in the low lying areas is called_____. (sea / lake)
3. It is our _____ to keep the public water resources clean. (responsibility / work)
4. The largest source of water on the earth is _____. (river / sea)

III. Circle the odd one.

1. Lake	Hill	Pond	Sea
2. Lily	Lotus	Rose	Water Hyacinth
3. Fish	Horse	Tiger	Cow
4. Bathing	Combing	Swimming	Washing

IV. Write true or false.

1. Living things do not need water.
2. Saving water is our duty.
3. Always close the water tap while brushing teeth.
4. A tank is a large area to store water compared to reservoirs.

V. Answer in one or two sentences.

1. Write any three different sources of water.
2. Write the symptoms of dengue.
3. Write any two diseases that is spread by mosquitoes.

VI. Answer the following.

1. Why is water known as primary source of life?
2. Suggest some ways to save water at home.
3. List out the ways to conserve water bodies.

VII. Think and answer.

1. How will you avoid wastage of water in your school?
2. Write some slogans to save water.

VIII. Project work.

Collect the pictures of different sources of water and make an album.

Unit 3

Plants

Learning Objectives

After learning this lesson, students will be able to

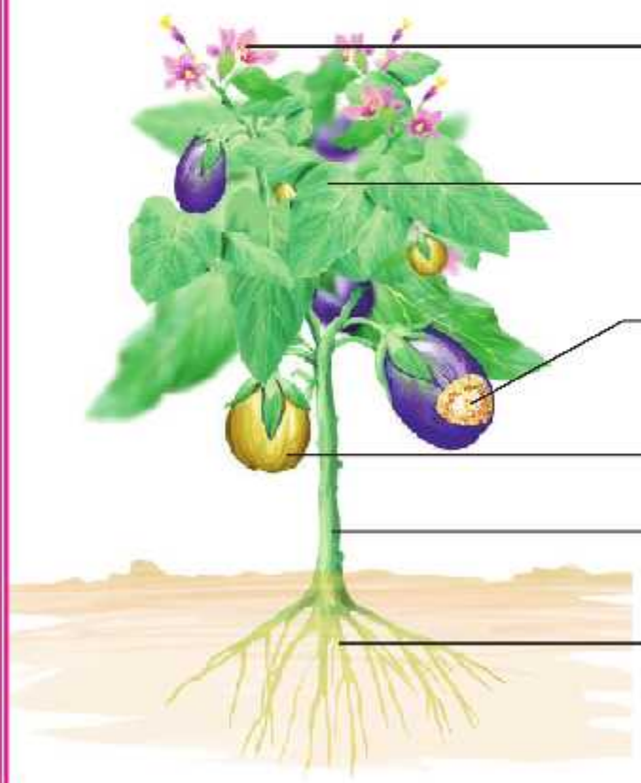
- identify the parts of a plant
- understand the functions of different parts of a plant
- classify plants based on their habitat

P6G9U2

Warm-up

Unscramble the words and label the parts of the plant.

(ETSM, TORO, ELFA, FURTI, LOFEWR , SDEE)



I. Plants are nature's gift

A plant has many parts. Each part has a set of function to do.

The basic parts of a plant are root, stem, leaf, flower, fruit and seed.

Let us learn about various parts of the plant, their structure and function.

Root

The root is a part of the plant that usually grows under the soil. Roots can be of different shapes and sizes. It grows away from sunlight into the soil. They are of two main types: tap root and fibrous root.

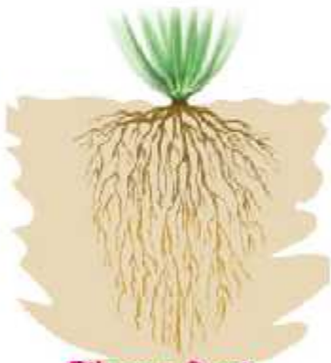
Taproot

Taproot

Taproot has one main, thick root. It grows from the radicle and goes deep into the soil. Many small thin roots grow out from the main root. Plants such as **carrot, beetroot, turnip, mango and neem** have taproots.

Fibrous Root

A fibrous root consists of many thin roots of different sizes. They grow from the base of the stem and all of them are bunched together. They do not go deep into the soil. Plants such as **grass, paddy, wheat and onion** have fibrous roots.



Fibrous Root

Functions of Root

Fixation: Root fixes the plant firmly to the soil. Without the roots, a plant would fall on the ground.

Absorption: Roots absorb water and minerals required for the plant from the soil.

Storage of food: In some plants, roots store food. **E.g.,** Carrot, Radish, Beetroot.

Difference between taproot and fibrous root

Taproot	Fibrous root
Thick main root that goes deep into the soil.	No main root and the roots do not go deep into the soil.
Side roots are developed from the main root.	Roots are developed from the base of the stem.
Looks like a long tap E.g., Tamarind, Guava.	Looks like a bunch. E.g., Corn, Sugarcane.

Do you know?

Avecinnia plants have roots above the ground.

Let us Do

Take two small potted plants. Cut the root of one of the plants and fix it in the pot. Now water the plants for two to three days. You will observe that the plant without roots will wilt and die. In the absence of roots, plants die.

This acivity proves that the function of the roots is to absorb _____ and _____ from the soil.

Let us Do

Take two coconut shells. Fill them with soil. Sow green gram in one and paddy in another. Keep them under sunlight and water them. After a week observe the features of roots.

Let us Write

True or false.

1. The roots grow into the soil.
2. Fibrous root has a main root.
3. Root absorbs water from soil.
4. Potato stores food in its root.
5. Grass has fibrous roots.

II. Stem

The stem is the main part of the shoot system. It grows towards the sunlight. It looks green when it is young. Branches, leaves, buds, flowers and fruits grow from the stem.

Coriander

Banyan Tree

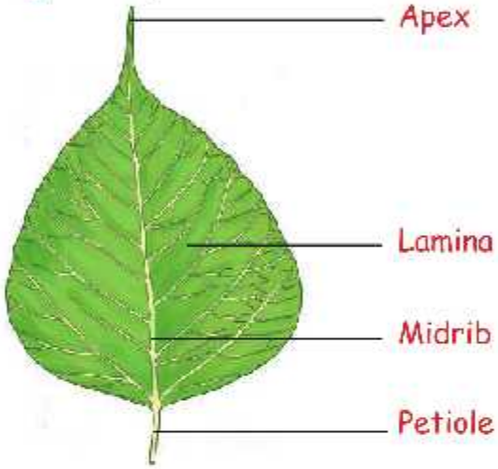
Herbs such as **coriander and mint** have a thin and **weak stem. Trees** such as **peepal** and **banyan have very strong and thick stem called trunk.** As trees grow older, their trunks grow wider.

Functions of the Stem

- It **supports** the whole plant.
- It **transports** food from leaf and water from root to various parts of the plant.
- Some stems **store excess food** in them. E.g., Potato, Onion.

Leaves

Leaves originate from the surface of the stem. It is flat, thin and green. Leaves of different plants have different shapes, sizes and colours. Some leaves have even a specific smell.



Functions of Leaf

- Leaf prepares food for the plant with the help of water, carbon dioxide and in the presence of sunlight and chlorophyll. This process is called photo synthesis. Hence, it is called the food factory of the plant.
- The loss of water in the form of gas (water vapour) happens through the tiny pores in the leaves. This process is called transpiration. It gives cooling effect to the plant.
- Leaves of some plants are edible and rich in nutrients. E.g., Greens, Cabbage.

Let us Play

Collect the leaves of coriander, mint, eucalyptus, tamarind, amla, neem and tulsi.

Select two students and cover their eyes with a handkerchief. Give one leaf to each of them. and ask them to identify the leaf by touching or and the other by smelling it. Find out who identifies more leaves.

Which method is easier to identify?

Touching or smelling? ---------- .

Let us Do

Collect the leaves of different kinds of plants.

1. Arrange the leaves from small to big.
2. Group the leaves based on its colour.

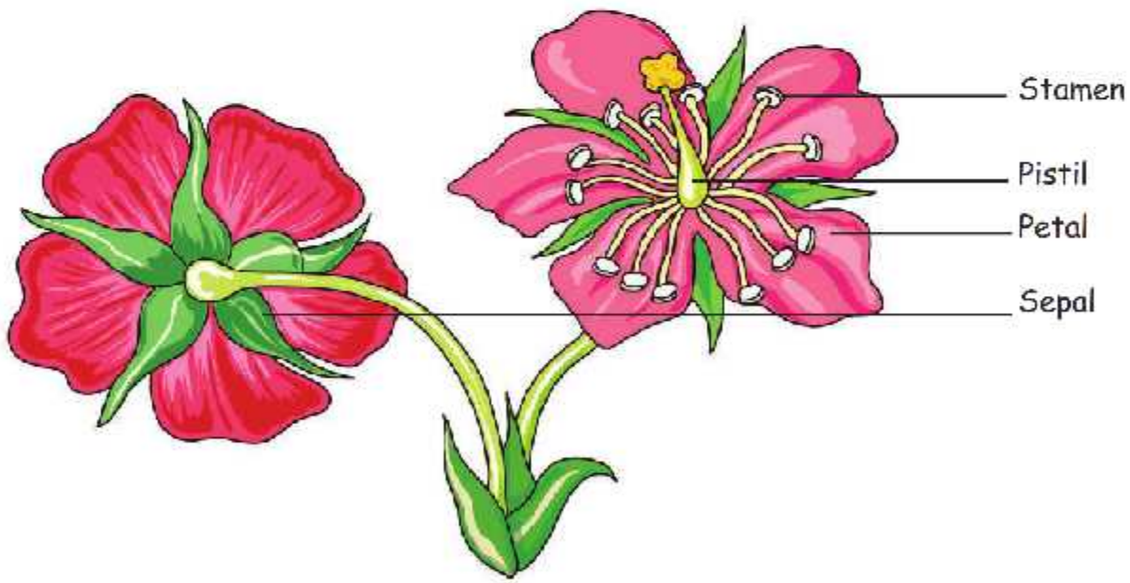
Let us Write

Fill in the blanks.

1. _____ grows towards the sunlight.
2. Leaves originate from the _____.
3. Green part of the plant that makes food is called _____.
4. _____ gives support to the whole plant.
5. Water from soil is absorbed by the _____ of the plant.

III. Flowers

Flowers are the most beautiful part of the plant. They are of different shapes, size, colours and fragrance. A flower develops from the bud. The soft and brightly colored part of a flower is called petal. The green part that lies under the petal and supports it is called sepal. The middle of the flower has two parts called the stamen and pistil.



Functions of the flower

- It develops into fruit.
- It helps plant to reproduce.

Fruits and Seeds

Fruit is the fleshy part of the plant. The fruits are developed from the flowers. Most fruits have seeds.

- Some fruits have only one seed. E.g., Apricot, Mango, Coconut and Peach.
- Some fruits have many seeds. E.g., Papaya, Watermelon and Orange.
- Some are seedless. E.g., Pineapple and Banana.

Apricot

Papaya

Pineapple

New plants are grown from seeds.

Think and Write

1. List out the fruits that do not have seeds. ----------.
2. Write down the names of the fruit trees that you have never seen, but have tasted their fruits. ----------.

Let us Do

Connect the leaf with its fruit.

1. 
2. 
3. 
4. 

IV. Plants and their habitat

E6W2X1

Plants grow almost everywhere on Earth i.e. on land (terrestrial plants) and in water (aquatic plants). The plants adapt to their surroundings and hence have special characteristics based on their habitat.

The natural home of a plant is called its habitat. Plants make suitable adjustment with their surroundings to meet their requirements. This is known as adaptation.

Terrestrial or Land Plants

The plants that grow on the land are of different habitats such as deserts, plains, mountains and forests. Let us learn about the adaptation of different land plants.

Plants in Desert

These plants grow in hot, dry and sandy places. Deserts get very less rainfall and experience high temperature. Hence, there is scarcity of water. Let us see how these plants have adapted to this habitat.

- Leaves are changed to spines to reduce the loss of water.
- The stem is green and fleshy. They store water and produce food.
- These plants have a long root that goes deep into the soil.

E .g., Opuntia, Date Palm and Aloe vera.

Opuntia

Date Palm

Aloe vera

Plants on Mountain

These plants grow in cold and freezing places. There is a cool weather in mountain. Let us see how these plants have adapted to this habitat.

- These trees are conical in shape. This shape allows snow to slide from the trees easily.
- Needle like leaves help them to survive in cold conditions like snow.
- These trees do not shed leaves.
- They have cones instead of flowers. These cones protect the seeds during harsh winter. E.g., Pine tree.


Pine tree

Plants in Plains

- Plants in plains need to adapt to both dry conditions and extreme temperatures.
- They grow in warmer climate and usually shed their leaves in winter to protect themselves from cold.
- They have flat and broad leaves.
- They have thick and woody stem. E.g., Mango, Banyan, Teak.


Mango


Banyan


Teak

Banyan, Peepal and Tamarind trees live more than hundred years.

Plants in Coastal Areas

- They are tall and mostly straight.
- The leaves are called frond.
- The frond look like feathers meant for protection from wind.
- These plants tolerant to saline (salt) water. E.g., Coconut tree.


Coconut tree

Let us Connect

Match the plants with their living places.

Deserts

Mountains

Plains

Coastal areas

Let us Try

A. Select the 'INCORRECT' statement from the following.

1. Desert plants grow in hot, dry and sandy places.
2. Plants in coastal areas tolerant to saline water.
3. Mountain plants have needle like leaves.
4. Teak is an example of desert plant.

B. Tick (✓) the odd one.

1. Teak	Tamarind	Mango	Opuntia
2. Opuntia	Aloe vera	Pine	Date palm

C. Circle the places which are land habitats.

Forest	Pond	Mountain	River
Tree	Ocean	Desert	Cave

V. Plants in Water

The plants that grow in water bodies like ponds and lakes are called water plants or aquatic plants. They are classified into following types.

1. Free floating plants
2. Fixed rooted plants
3. Submerged plants

Free Floating Plants

- These are found on the surface of the water.
- They freely float with the help of spongy body filled with air.
- They have poorly developed roots.

E.g., Water hyacinth (Agaya thamarai), Pistia.

Water hyacinth

Pistia

Fixed Rooted Plants

- These plants have root that are fixed in the bottom of the water bodies.
- These plants have air tubes in their stem to help them float.
- Their leaves are broad and coated with wax to make them water proof. E.g., Water lily, Lotus.

Water lily

Lotus

Submerged Plants

- These plants are completely submerged in the water.

Hydrilla

- Their stem is thin and leaves are very small.
- There is no opening on the leaf surface.
- They breathe through stem.
  E.g., Vallisneria, Hydrilla.

Vallisneria

Let us Try

A. Mark 'L" for land plants and 'W' for water plants.

Neem tree	Lotus	Opuntia	Vallisneriya
☐	☐	☐	☐

Water hyacinth	Date palm	Hydrilla	Lily
☐	☐	☐	☐

B. Colour the Water hyacinth plant.

C. Write true or false.

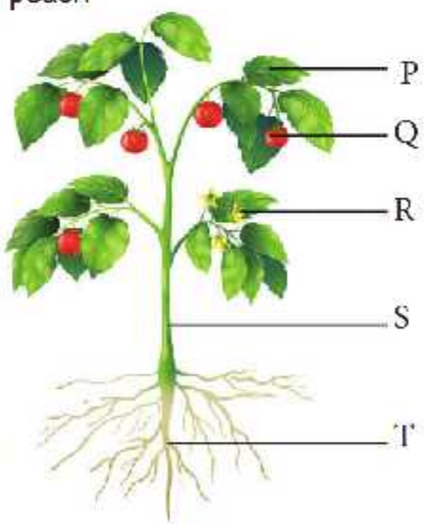
1. Fixed rooted plants are present in water bodies.
2. Leaves of lotus are submerged in the water.
3. Lotus plants are found in many ponds.
4. Water hyacinth freely float with the help of spongy body filled with air.

EVALUATION

E8Z5B7

I. Choose the correct answer.

1. The function of leaf is to
   (a) Give Support (b) Fix the plant firmly
   (c) Produce food (d) None of the above
2. An example for taproot is _____.
   (a) Paddy (b) Grass (c) Mango (d) Ragi
3. _____ supports the plant.
   (a) Root (b) Leaf (c) Flower (d) Stem
4. Most plants grow from the _____.
   (a) root (b) leaf (c) flower (d) seed
5. Roots are poorly developed in _____.
   (a) agaya thamarai (b) neem (c) teak (d) date palm
6. If part X will be absent in a plant, new plants will not be produced. X is _____.
   (a) stem (b) root (c) flower (d) leaves
7. The plant is adapted to grow in deserts as it has _____.
   (a) fleshy stem (b) needle like roots
   (c) leaves changed to spine (d) both a and c
8. An example of many seeded fruit is _____.
   (a) pomegranate (b) mango (c) apricot (d) peach
9. Which of the following plant parts take part in absorption of water and exchange of gases respectively?
   (a) P and R
   (b) R and S
   (c) S and Q
   (d) T and P



II. Find the odd one.

1. Carrot	Radish	Tomato	Beetroot
2. Cabbage	Greens	Turmeric	Spinach
3. Neem	Aloe vera	Datepalm	Opuntia
4. Coconut	Mango	Apricot	Orange
5. Hydrilla	Opuntia	Water hyacinth	Vallisneria

III. Short answers.

1. Name the parts of a plant.
2. Name the types of roots.
3. Write any two functions of the leaves.
4. Write the parts of a flower.
5. Name the types of plants based on their habitat.
6. Write any two adaptations of desert plants.
7. Write the names of some water plants.

IV. Answer the following questions.

1. Write any two functions of each:
   (a) Stem _____ , _____.
   (b) Root _____, _____.
   (c) Flower _____, _____.
2. Why is leaf called food factory of the plant?
3. Differentiate between taproot and fibrous root.
4. Give two examples of:
   (a) Fruit having only one seed
   (b) Fruit having many seeds
5. Name two free floating plants.
6. Look at the picture of a water lily.
   (a) Which parts of the plant can you see?
   (b) Where are the plant's roots and stem?

V. Project

Collect the information about vegetables that were cooked in your friends houses for the last two days. Fill the table with the particulars.

Sl. No	Name of the friend	Name of the vegetable cooked

From the table, answer the following questions.

(a) In how many houses did they cook leafy vegetables? ----------

(b) Which vegetable is cooked the most? ----------