



**Government of Tamilnadu**

# **SCIENCE**

## **IV - Standard**

**Untouchability  
Inhuman - Crime**

**Department of School Education**

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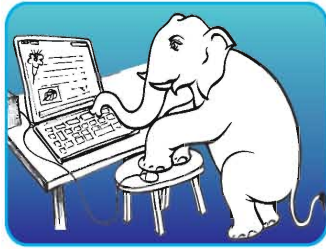
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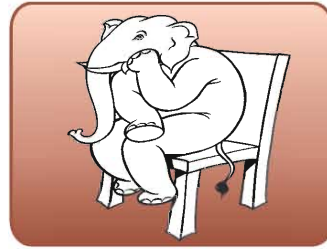
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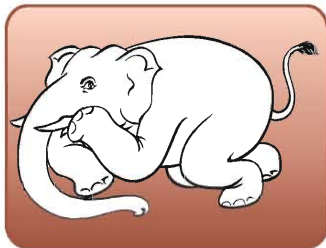
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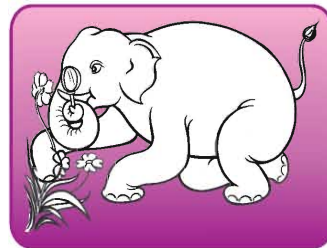
Do You Know ?



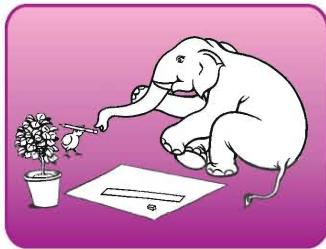
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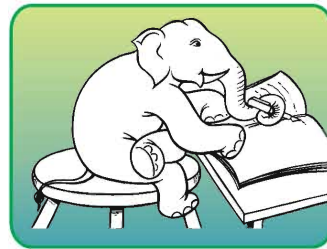
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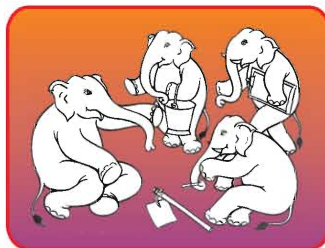
Activity



Project :



Evaluation



For Teachers...

# 1

## FOOD FROM PLANTS



Observe the vegetable garden keenly and answer the following.

Name the various plants in the garden.

---

Name the vegetables that have grown above the ground.

---

Name the vegetables that you like to eat.

---

One morning Mani and his grandfather were in the garden...



Mani asked his grandfather, "While tomato and brinjal grow above the soil, why does the groundnut grow under the ground?" Grandfather answered that the groundnut plant stores its food in the root as groundnuts.

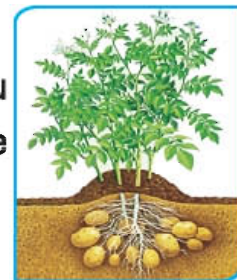
They walked towards their home talking all the way. Mean while...

Mani's father left home to buy all provisions. Mani went along with him.



In the vegetable shop, Mani saw a variety of vegetables. He took one potato and asked "Why is there mud on the potato?"

"Potato grows under the ground; that's why you see mud on the potato", father replied. "Does the potato plant also store its food in the root?"

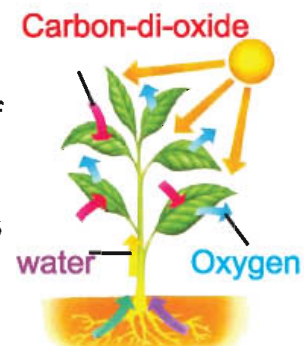


Father answered, "Not in the root, but in the underground stem. Plants store their food in different parts, like root, stem, leaf, flower, fruits and seed,".

Do you know?



Plants prepare their own food with the help of sunlight, water and carbon-di-oxide using chlorophyll present in the leaves. This process is called **photosynthesis**.



## Edible parts of a plant.

From root to fruit....



For example



Food	Parts
Cabbage, Greens, Mint leaves.	Leaves
Sugarcane, Onion, Potato, Ginger, Turmeric.	Stem
Banana flower, Cauliflower.	Flowers
Lady's finger, Bitter gourd, Drumstick.	Unripe fruits
Guava fruit, Banana, Grapes.	Ripe fruits
Beetroot, Carrot, Radish, Tapioca.	Roots



Plants prepare and store their own food.  
Food stored by the plants is useful for man  
and animals.

## Seeds as food

Cereals like rice, wheat, millet, maize, ragi, corn, Pulses like red gram, green gram, black gram and oil seeds like coconut, sesame, groundnut are used as food. All these are obtained from the seeds of the plants.

### Activity



Put  for the edible parts of a plant. Put  for the others.

Plants	Edible parts				
	Root	Stem	Leaf	Flower	Fruit
Banana Tree					
Sugarcane					
Greens					
Carrot					
Orange					

### “Garbage dump” turned into a tomato garden...

As Mani and his father were returning home, they continued to talk about the parts of the plants. Mani gave all the vegetables to his mother.

Mani's mother started to cook the meals. For preparing rasam, she squeezed the tomatoes and threw away the waste into the garbage dump.

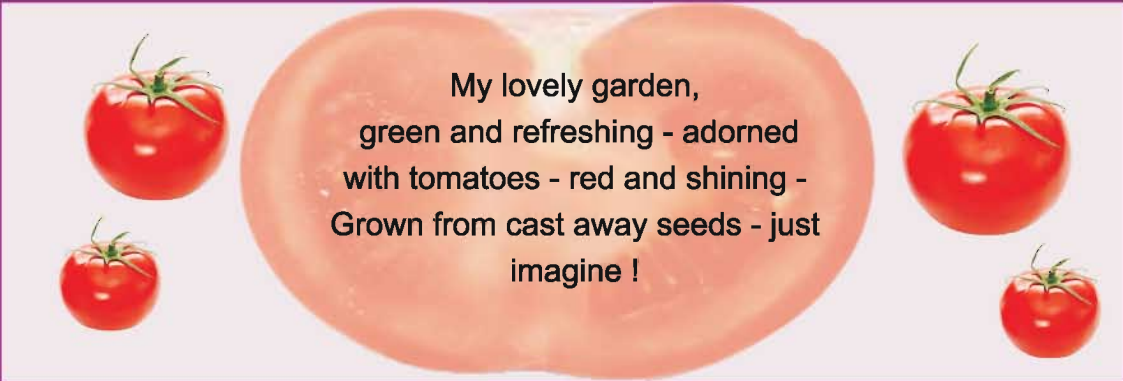
One or two days later, seeds were covered by soil. It rained. What a surprise! Seedlings emerged from the seeds. With the help of water, air, waste manure and sunlight, they grew into beautiful plants.



After some days, they bloomed into yellow flowers. The flowers slowly changed into green fruits and then into red ripe tomato fruits. Mani eagerly plucked some fruits from the plants and ate them. Some tomato seeds fall on the ground. Seeds were scattered and once again, they grew into plants. Thus the garbage dump turned into a tomato garden.

**Mani sang in excitement.**

Complete the song and sing.



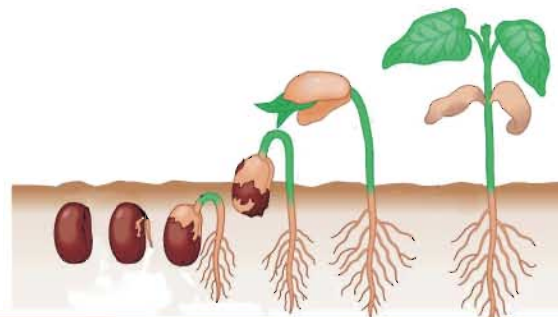
My lovely garden,  
green and refreshing - adorned  
with tomatoes - red and shining -  
Grown from cast away seeds - just  
imagine !

---

---

### Seed germination

- **Germination** is a process by which a plant emerges from the seed.
- **Soil, air, water and sunlight are essential for seed germination.**



#### Activity



Collect different types of dry seeds  
in small polythene packets, stick them in a chart  
paper and write their names.

## Project:



Take four glass tumblers of the same size. Put equal number of bean seeds into them. Keep them in different places as given.



①

Place it in the sunlight. Allow air to enter into it. Don't pour water.



②

Place it in the sunlight. Fill the tumbler with water in such a way that air does not come in contact with the seeds.

②



③

Place the seeds in a wad of cotton. Pour required amount of water. Place it in the sunlight and allow the air to enter into it.

③



④

Pour required amount of water. Cover the tumbler with a black cloth so that sunlight cannot enter into it.

④

What are the factors available to the seeds for germination in the four tumblers?

In the given table put  for the available factors and  for the factors that are not available.

Tumbler	Water	Air	Sunlight
1.			
2.			
3.			
4.			

- Do the seeds in all the tumblers germinate?
- Seeds kept in which tumbler will germinate?
- What are the factors needed for the germination of seeds?

## Activity



Take three types of seeds, like paddy, mustard, pea in three different glass jars. Fill half of the jars with soil till the seeds get covered. Find out for yourself which of the seeds will germinate first with the help of the air, water and sunlight.

## Do you know?



Coffee seeds were from Africa.

Green chilli, potato and tomato were from South America.

Pea and cabbage were from Europe.



Tea Plant



Tea Leaves



Tea



## On a field trip...

After knowing a little about plants, Mani was eager to know more. He hurried to school the next day. In order to make the students learn about the lesson "Plants In society", the teacher took them for a field trip during the first period. Students listed out the names of all the plants around the school.



Coconut tree, Jack fruit tree, Tusk tree, Neem tree, Tamarind tree, peepal tree, Banyan tree, Poria tree, Shoe flower plant, Lady's finger plant, Brinjal plant, Snake gourd climber.

**Medicinal plants:** Tulsi plant, Shambhal, Isocharaill, malabar nut (Aaduthoda).

## Write the plants seen in your area...

1. Medicinal plants \_\_\_\_\_, \_\_\_\_\_
2. Plants used for construction purpose \_\_\_\_\_, \_\_\_\_\_
3. Plants used for festivals \_\_\_\_\_, \_\_\_\_\_

### World Environment Day.

Vanamahotsav (Planting saplings) was celebrated in the school on June 5<sup>th</sup>. The students planted the own saplings, they had brought. Mani, on his part, planted a neem sapling in the school campus and watered it everyday.



June 5<sup>th</sup> is celebrated  
as World Environment Day all over  
the world.



The more trees we plant, the more rain we get !  
The more rain we get, the wealthier we are !!

## Evaluation



(a) True  False

1.	Ginger is the root part of the plant.	<input type="checkbox"/>
2.	Groundnut is the stem part of a plant.	<input type="checkbox"/>
3.	Sunlight is essential for seed germination	<input type="checkbox"/>
4.	Banana leaf is used as food.	<input type="checkbox"/>
5.	Tulsi is a medicinal plant.	<input type="checkbox"/>

(b) Fill in the blanks.

1. In sugarcane \_\_\_\_\_ part is used as food.
2. Plants prepare their own \_\_\_\_\_.
3. In cauliflower \_\_\_\_\_ part is used as food.
4. Grains are the \_\_\_\_\_ part of a plant.
5. In cabbage \_\_\_\_\_ part is used as food.

(c) Match the following.

- |           |             |                          |
|-----------|-------------|--------------------------|
| 1. Root   | Mint leaves | <input type="checkbox"/> |
| 2. Seed   | Beetroot    | <input type="checkbox"/> |
| 3. Stem   | Cauliflower | <input type="checkbox"/> |
| 4. Flower | Sugarcane   | <input type="checkbox"/> |
| 5. Leaf   | Wheat       | <input type="checkbox"/> |

(d) Draw the picture of a banana tree, colour it and write the names of the edible parts.

**(e) Answer the following.**

1. What are the factors needed for seed germination?
2. Write down the names of medicinal plants .
3. Name a few flowers that are used as food.
4. Which plant's roots are used as food?
5. What are the uses of tulsi plants?
6. Name some vegetables that are mostly used for cooking at home?
7. Plants ask , "How will you conserve us as we provide food for all living beings?" What will be your answer to this question?

**(f) Project:**

Divide into groups. Each group must plant a bean seed in a pot filled with garden soil. Place it in the sunlight and pour water daily. The seed will germinate. Measure the height of the seedling after every 5 days and enter the data in the tabular column.

Day	Height	Changes in the plant
5th Day		
10th Day		
15th Day		
20th Day		

**For Teachers...**

Ask the students to observe the changes of seed germination and to draw them in the notebook . Make them to discuss about it in the class.

(g) Write about the food items needed to prepare the following food, the plants from which they are obtained and also which parts of the plant they are, in the table given below.

Food	Food Items	Plants	Part of a plant
Idly	Rice Black gram	Paddy plant Black gram plant	Seed Seed
Sambar			
Poori			
Sweet pongal			



### Do you know?



There is a 500 year old Neermarudhu tree at Eeshanthimangalam near Nagercoil. It is about 150 feet high and has a circumference of 85 feet. Its leaves and barks are used as medicine.

Collect some of the latest information about plants from newspapers and write.

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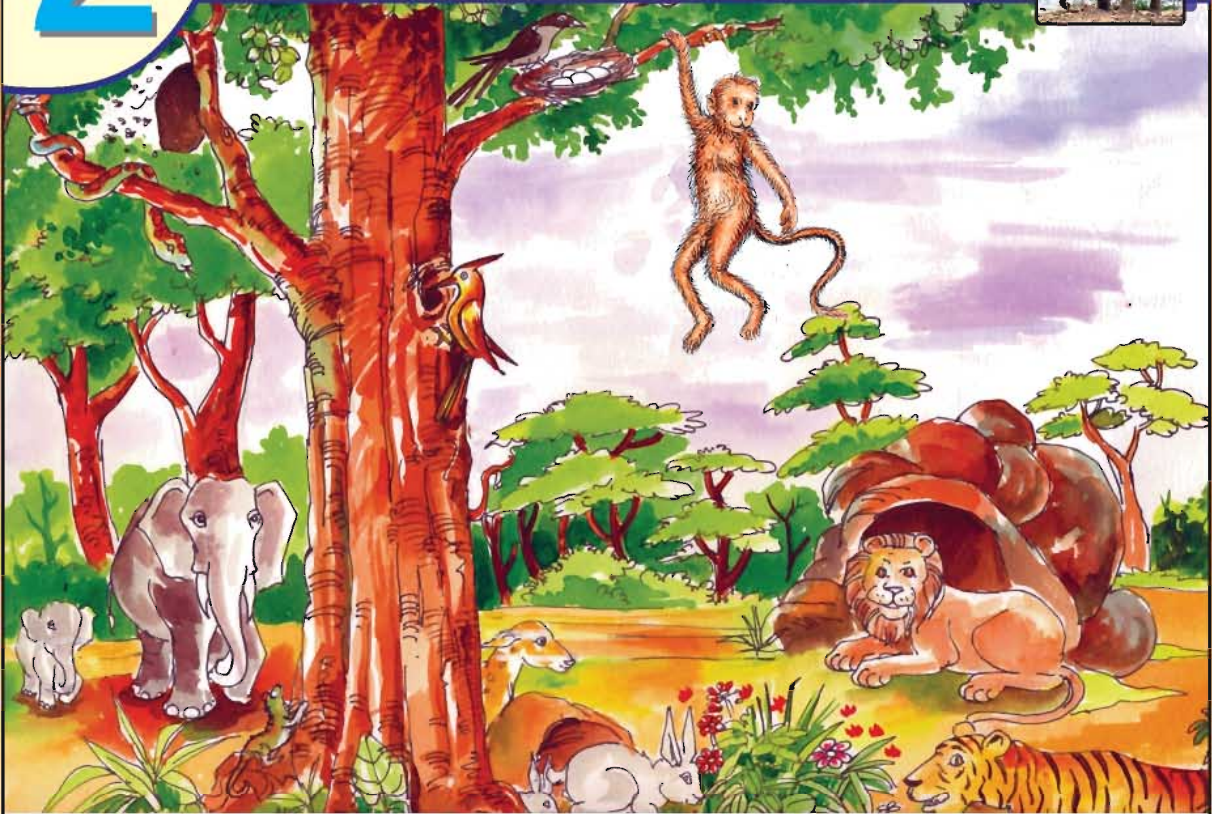
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# 2

## SPECIAL SENSES OF ANIMALS



Observe the picture keenly and answer.

Write the names of animals seen in the picture.

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Compare the external appearance of an elephant and the monkey.

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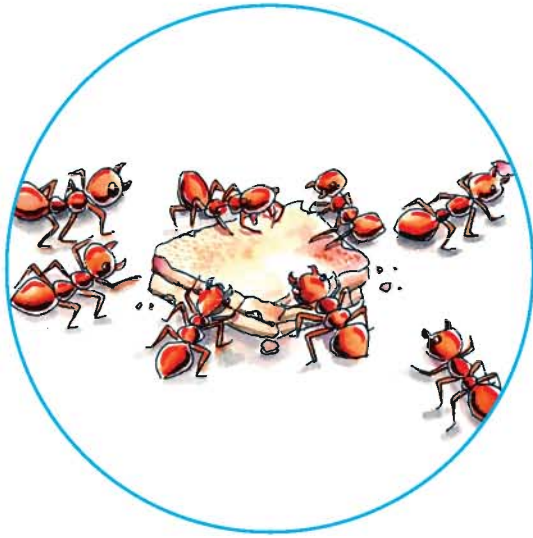
Write something that you know about the lion.

---

---



Have you seen this sort of activities?



Ants gather around a piece of bread that fell down. **How?**

Even if you walk quietly nearby a dog that sleeps, it quickly raises its ears.

**Why?**



When we have food under a tree, what are the animals that come around us?

---

---

---

## Animals and their senses

Like us, animals too have senses - such as sight, hearing, smell, touch and taste. All animals identify their surroundings and habitat through their sense organs. Some animals have highly developed sensory organs which help them to search for food and for self protection.

### Eye Sight of animals!



There are a lot of differences between the way we see an object and the way animals see the same object. Animals' vision differs in colour, distance and clarity of the object that they see.

Birds, like eagle and vulture, can see objects **four times** the distance seen by man.

A chameleon can see two objects simultaneously, one through its left eye and other through its right eye.



Rabbit can see all the objects around it without turning its head.



Which bird has eyes on the face like the human beings?

---

Write the names of the birds which have eyes on the side of their heads.

---

Do you know?



During night time the eye sight of a tiger is six times greater than that of the man.

The roaring sound of a tiger could be heard upto three kilometers away.

The tiger can turn its ears in all possible directions. It is talented in hearing the sound of the swaying of leaves and the sound of animals walking on the grass and can also differentiate them.

It can feel the vibration in the air through its whiskers. By this, it finds its prey and walks about at night.



Can animals see colours?

Animals cannot see most of the colours as we see them.

Oxen can see all the colour objects in black and white only. It is the same for crocodiles also.

Honeybees cannot see red colour.

## Activity



Don't the animals in the picture look funny?

- An artist has drawn the ears differently!
- Identify the ears with their animals.

## Do you know?



Can you see the ears of  
animals given in the picture?  
Do they have ears?



## What noise is that ?

Animals can hear through ears. For some of the animals, the ear lobe is present externally like it is for us. But for birds and reptiles, ears cannot be seen. They do not have ear lobes; instead, they have small holes.

### Activity



Among the animals you have seen, write down the name of any three animals with external ear and three with internal ear.

Animals with <b>external</b> ear.	Animals with <b>internal</b> ear.
_____	_____
_____	_____
_____	_____

## Hearing sensation

- Hearing capacity of a dog is **40 times** greater than ours. It is **90 times** greater for rats.
- The bat can know an object which is at a distance of **18 feet** through its ears.
- The elephant can feel the **vibration** through its trunk.



- Hearing sensation is more for animals like **elephant, deer, monkey, rabbit, dog and bat.**

### Activity



Write the name of any six animals that have ears bigger than yours.

\_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_

\_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_

### Think it over!



Tsunami occurred on **December 26, 2004**. Many people lost their lives in this disaster. How did some animals manage to escape from that place without any harm?

### Do you know?



- ★ Animals like monkey, ant and dog are capable of knowing about the occurrence of earthquake before the event.

### Smelling sense of animals.

Do you know the animals which have greater sniffing capacity?

Butterfly, mosquito, ant, dog and honeybee.



### Smelling sense of a dog

- ★ Smelling sense of a dog is one lakh times greater than that of the man.
- ★ Dog knows its territory with its sense of smell.
- ★ Dog can sense explosives through its smelling sensation.



German Shepherd

How is the sensation of dogs useful to us?

Mosquitoes can locate human beings by odour and temperature of the body by using their sense of smell.

Which are the objects we can identify by using smelling sensation only?

\_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_ .

Smells which I like	Smells which I do not like
_____ _____	_____ _____

Do you know?



- ★ The snake smells through its tongue.  
It does not have ears.



### Sense of taste

We sense taste such as sweet, bitter, etc., with the tongue. Which are the organs used by animals to sense taste?

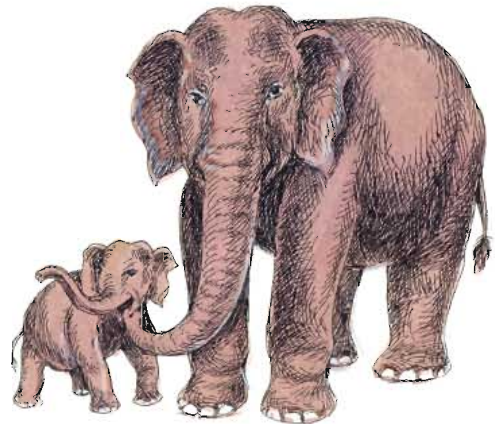
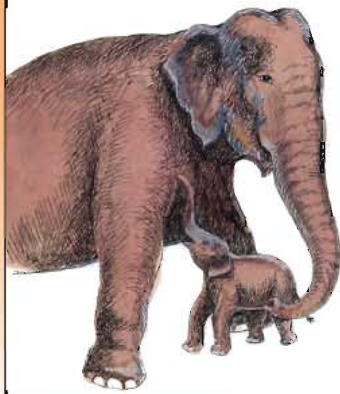
- ★ Butterflies sense taste with the help of their legs.
- ★ Honeybees sense taste with the help of their jaws, forelimbs and antenna.
- ★ An earthworms sense taste through their whole body.

## Sense of touch

- \* We feel the sense of touch through skin. But the cat can feel it through whiskers.

## Care of young ones.

New born baby elephant cannot see anything for some time. Elephant family leads that young one by means of the sense of touch.



Hence animals not only protect themselves but also take care of their young ones using their special sensory powers.

### How long do animals take care of their young ones?

- \* Goat - one year.
- \* Lion - three years.
- \* Gorilla - 4 to 5 years.
- \* Birds - some weeks.



### Birds protection



Birds train their young ones to fly and to search for food. Parental care in birds is shared equally by the male and female birds.

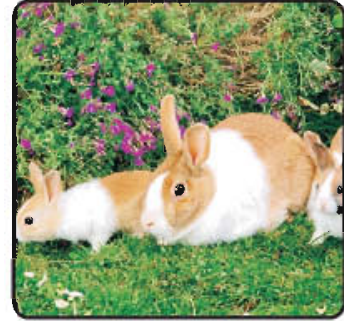


Female birds protect their young ones by keeping them in nests. Male birds get food for them.

Reptiles do not show much care in nursing their young ones. But crocodiles keep their young ones in their jaws and nurse them.

In the **rabbit** family young ones are taken care of only by the mother rabbit.

Mother rabbit is very cautious. When its young ones are under attack, the mother rabbits bravely defends them without bothering about its own life.



### Young one in the pouch...



Newly born kangaroo is rose in colour. They are very small in size, around 3 cm. Immediately after its birth, it climbs slowly and reaches its mother's pouch. It grows there for the next six months.

**Do you know?**



**Kangaroo grows up to six feet.**

**Jumps upto 15 feet.**

**It hops and run very fast.**



## Animal Communities

Animals, by nature, live in communities as we do. Animals like elephants, deer, bison and monkeys live in communities. They will share the food and water in the place where they live. Moreover in order to select their home, to protect their race, they live together.



### Activities of animals in communities.

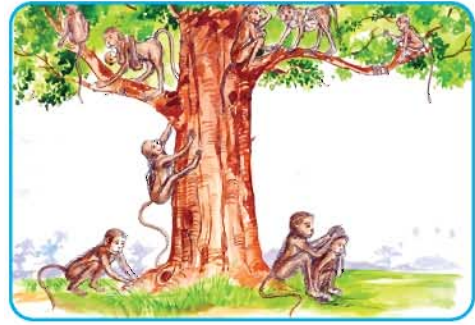
- Selection or making of shelter.
- Search for food
- Caring and protecting their race.



## Tree to tree.

In general the monkey lives on trees. Every night it changes its place in trees. Mother monkeys take care of their young ones.

The young ones stay with their mother upto six years and learn all the skills from the mother.



### Do you know?



- \* Elephants can hear and sense the ultra sounds which cannot be heard by man. It can find out the animals that come on the way with the help of these sounds.
- \* Elephants sleep by standing.

Weight of a three month old elephant is 200 kilogram.

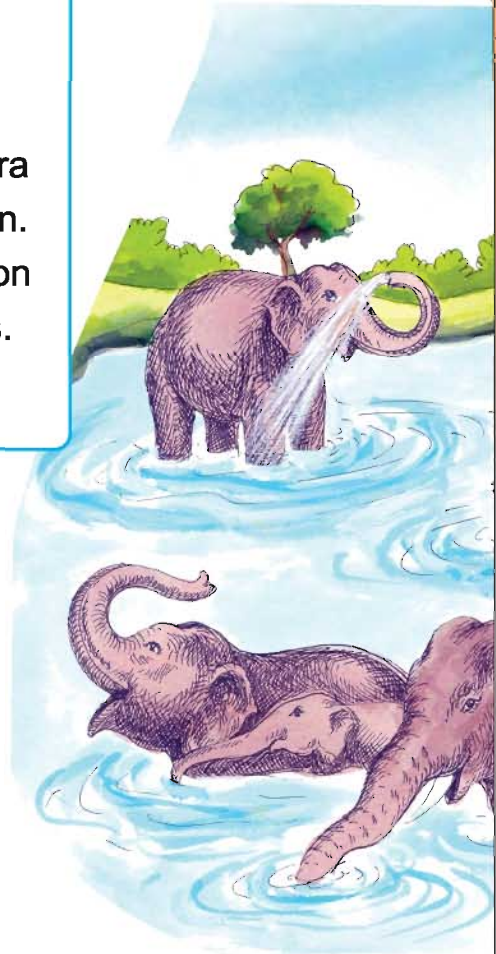
What is your weight?

How many of your friends like you must join together to get the weight of a three month old elephant's weight?

Write the names of animals which live in communities.

---

---



Do you like to live in a joint family?

---

What are the benefits you get when you live in joint family?

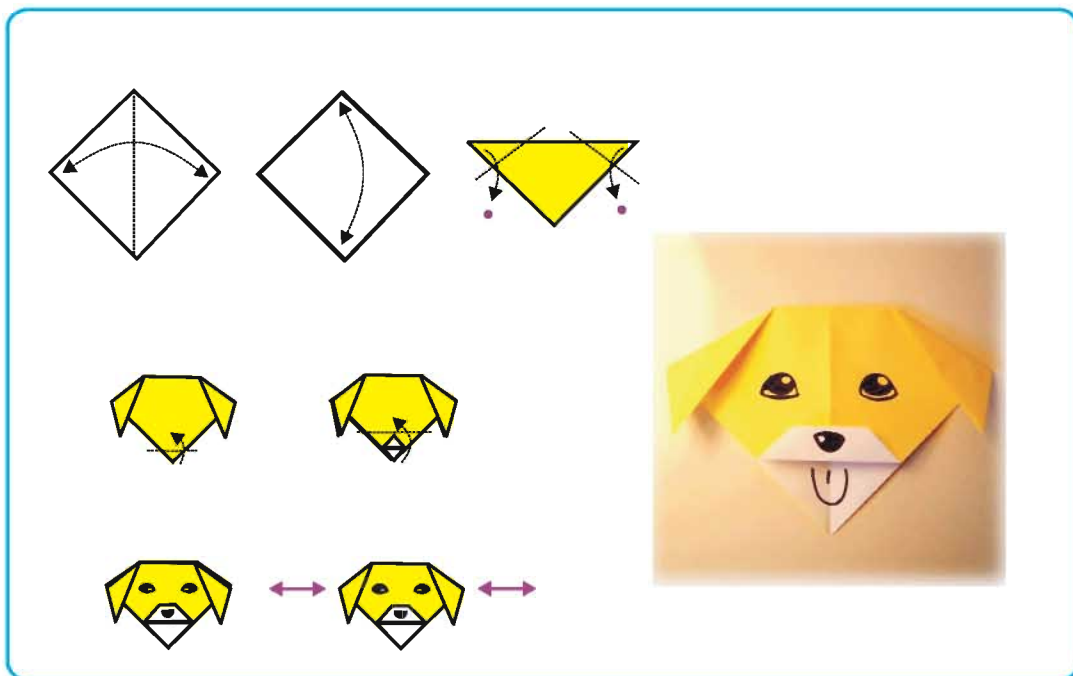
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What qualities can be developed when we involve in group activities?

---

**Activity** 

Take a one sided colour paper. Fold the paper as shown in the picture and get the shape of a dog. Draw eyes, nose and tongue in that. Pull the dog's ears sideways and play.



## Evaluation



### (a) Fill in the blanks.

1. \_\_\_\_\_ bird can see the objects four times the distance seen by man.
2. Oxen can see all the objects in \_\_\_\_\_ colour.
3. Garden lizard has \_\_\_\_\_ ears.
4. Crocodiles keep their young ones in their \_\_\_\_\_ and nurse them.
5. Goats take care of their young ones for \_\_\_\_\_ years.

### (b) Write about the parental care of the following animals.

- a) Cat            b) Hen

### (c) Answer in one or two sentences.

1. What are senses?
2. Write the name of animals which have sense of smell in a significant way.
3. How do elephants take care of their young ones?

### (d) Identify the animals hidden in the given picture and colour them differently.



# 3

## INSECTS



Identify the insects in the picture and write down their names.

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Write down the places where you can find more insects.

---

Write down the names of insects that are common in your area.

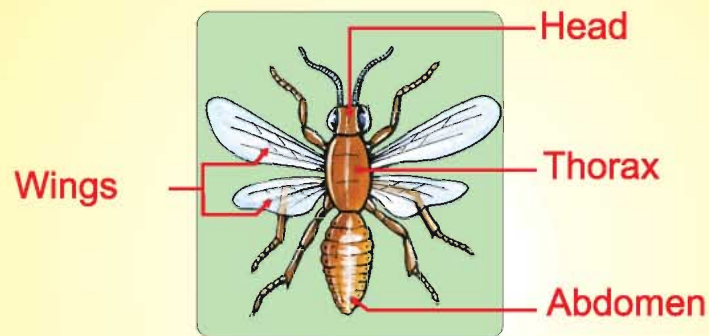
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We can see insects in the places like house, garden, river, and pond. There are about 10,00,000 insects in the world.

### Structure of an insect

Insects are of different types. All insects have similar body structure. In general, the body of an insect is divided into three parts namely head, thorax and abdomen. All insects have six legs. Antennae are seen on the head. Insects have two pairs of wings to fly.



Are you eager to know about the insects around us, their food and habitat? Ananthi was looking at her neighbour Anisha's album about "Different types of insects". Shall we also take a look?



## Different types of insects

### Dragon Fly

**Structure** : Dragon flies have four wings and they can fly forward and backward.

**Food** : Small insects

**Other Facts** : It depends on mosquitoes for food. They fly without moving away from one place. There are about 30,000 lenses in the eye of Dragon fly.



### Flea

**Structure** : It has no wings. Small in size - up to four millimeters.

**Food** : It sucks blood from animals.

**Other Facts** : It lays nearly 25 eggs per day on animal body. It lives for two to three months. It lives on the body of cat and dogs.





## Different types of insects

### Bedbug

**Structure** : It has no wings. It has a flat body and is oval in shape.

**Food** : It sucks blood from man and animals.

**Other Facts** : When it bites human beings, its saliva enters into the body which swells.



It lives for four to six months. It may be seen in pillows, beds and wooden chairs.

### Silver Fish

**Structure** : It is a white coloured, fish shaped insect  
It has no wings.  
It has a long antennae.

**Food** : It feeds on starch in starched clothes and paste used in book bindings and paper.

**Other Facts** : It has 11 segments in the abdomen.  
It lives for about 9 months. It lives in old books, behind the mirror and in clothes.



## Different types of insects



### Drosophila (Fruit Fly)

**Structure** : One pair of fore wings with a few veins. It has sucking type of mouth parts.

**Food** : Fruits.

**Other Facts** : It is proved to be an ideal tool for genetic research. It lives inside the fruits.



### Moth

**Structure** : Moth has four wings. Usually comes out at night towards light.

**Food** : Green leaves, small insects and nectar from flowers.

**Other Facts** : They fly at night. They usually do not have bright coloured wings like butterflies. It is seen in forests, gardens, meadows.



## Activity



Anisha did not write the details about the insects given below. You write



### Ladybug Beetle



Structure :

Food :

Other Facts :



### Wasp



Structure :

Food :

Other Facts :

## Nocturnal insects

### Firefly

Firefly has the capacity to produce light. It is amazing to see such insects. When two type of chemicals substances from their body mixes with the air, it produces light. Female Fireflies give the maximum light. They feed upon the larva of snail by making them inactive. The light produced by 40 fireflies is equivalent to the light given by one candle.



### May fly

We can see these insects at night during the rainy season. Its life span is one day.



### Cockroach



This is an insect which moves for the sake of food at night. They are found in places like Kitchen, toilet, etc., it can survive without food for nearly one month. It can sense smell through its antennae and mouth. It runs very fast.

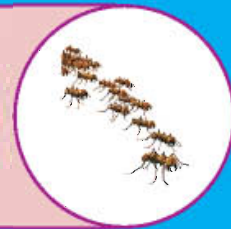
We cannot see all the insects at all times. Have you seen bat, owl flying during night time? Likewise, insects such as Firefly, May fly, Cockroach are seen at night. They are called nocturnal insects. They come out only during night in search of prey.

## Life of Ants

Geetha kept the peanut candy which her father had given her in a plate, and went out to play. When returned she saw the peanut candy surrounded by ants. She observed that keenly. How come so many ants came so fast! It came to her mind that ants have more sense of smell. Geetha was eager to know more about the ants, and she watched a compact disc in the computer about ants.

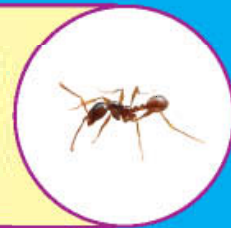


Ants live together in colonies. In their family they have queen ants, worker ants and male ants.



Queen ant is large in size. It flies with the help of the wings. It lays eggs.

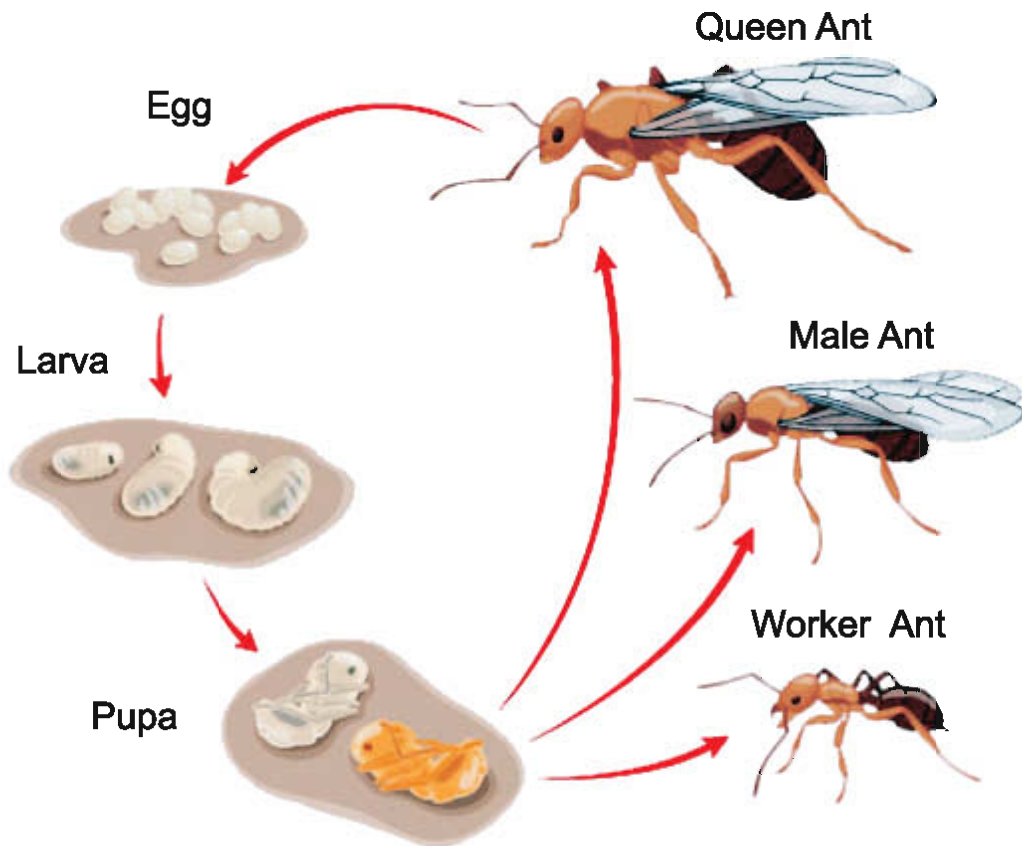
Worker ant performs duties like collecting food, defending the colony and enlarging the nest.



Male ant has small wings. It lives for a short time.

## Life cycle of an ant

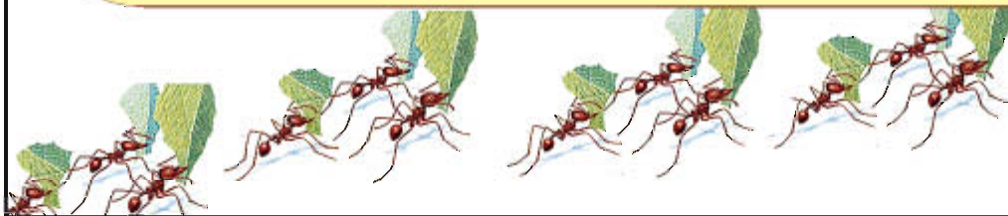
Life cycle of an ant consists of four stages. They are egg, larva, pupa and adult.



Think it over!



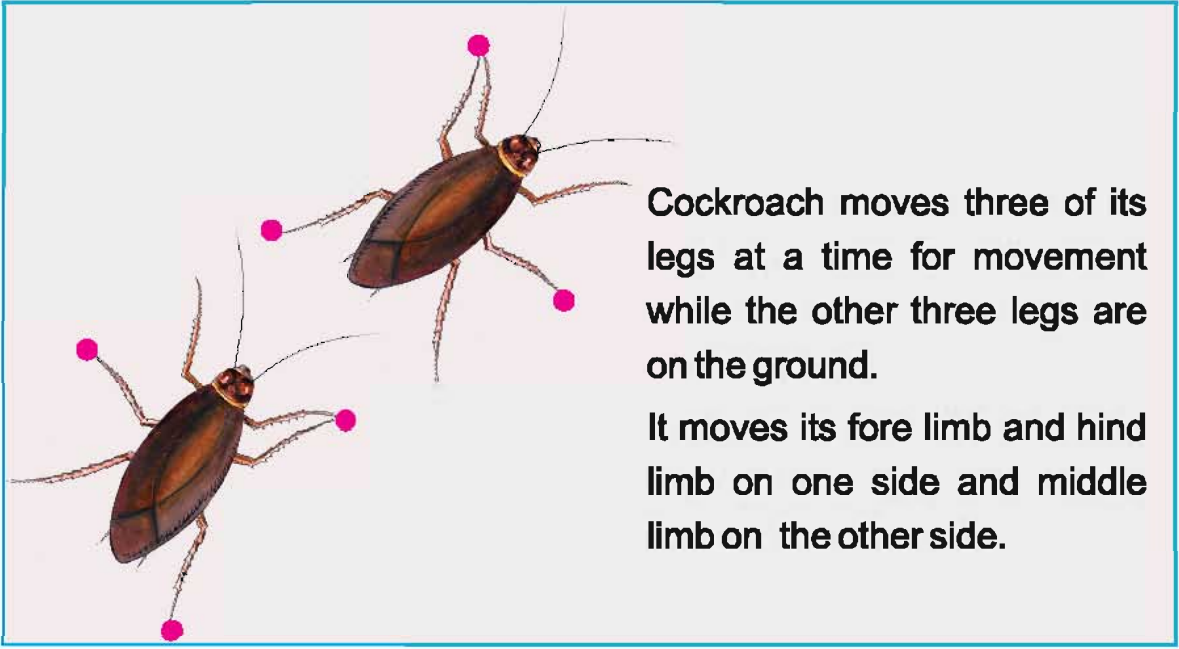
Let us also work together actively like ants and live in united with love.



## Activity



Observe the leg movement of a Cockroach as it moves. Likewise find out the movement of the other insects.



Cockroach moves three of its legs at a time for movement while the other three legs are on the ground.

It moves its fore limb and hind limb on one side and middle limb on the other side.

## Evaluation



(a) Find out and write whether the given ant is queen, male or worker ant.



\_\_\_\_\_

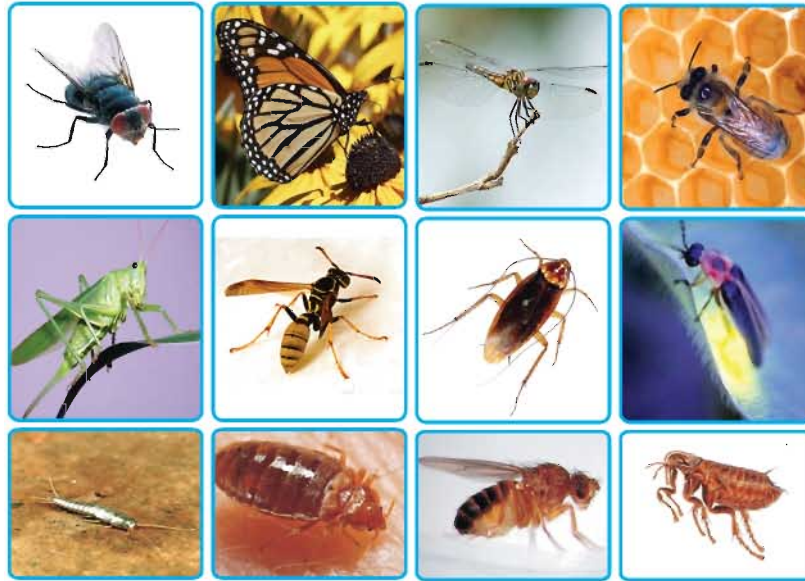
(b) Write a few lines about the ants given below:

Queen ant : \_\_\_\_\_

Worker ant : \_\_\_\_\_

Male ant : \_\_\_\_\_

(c) Answer the following questions by seeing the given pictures.



1. Name the insects that are useful to us.

\_\_\_\_\_

2. Name the insects that are harmful to us.

\_\_\_\_\_

3. What are nocturnal insects?

\_\_\_\_\_

4. Name an insect which cannot fly much distance though it has wings.

\_\_\_\_\_

5. Which insect can jump faster than others?

\_\_\_\_\_

**Project:**



**Make an album by collecting the pictures and details of the insects.**

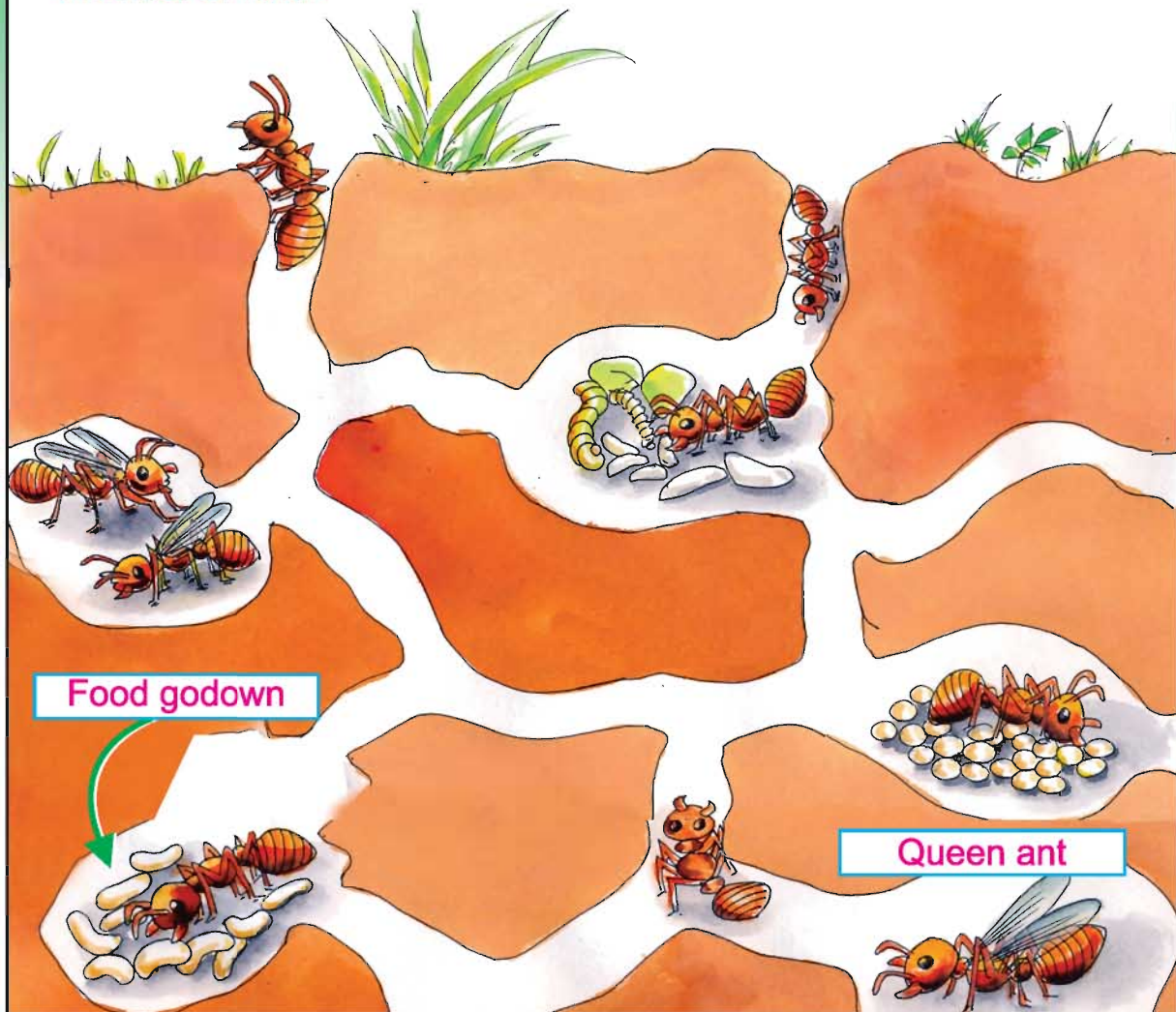


## Do you know?



1. Ants can lift weight 20 times greater than its own weight.
2. Ants sense smell through antennae.
3. The length of ants will be from 2 mm to 7 mm.
4. Some ants sleep for 7 hours a day.
5. When worker ant comes to know about the place of food, it produces a particular smell, there by other ants will come to know about that place easily.

## Habitat of ants



# 4

## SOLAR FAMILY



It is Science festival in Mohan's school.

One astronaut took part in that gathering.

Mohan shared all the information given by the astronaut through a letter to his friend.



Chennai,  
-----

Dear friend....!

How are you? Here I am fine. How is your studies going on? One astronaut came as the chief guest for our school science festival. I felt proud, for he is an Indian. He started sharing his experiences. He said that his space journey was a memorable one.

For all the questions that we asked about the solar system, he gave us clear answers through a slide show. Moreover, he looked at us and said, "You are the leaders of the future. So study well, and become great persons in the future." A thought rose in my mind that I too must work hard and become a great astronaut like him.

I am sending all the information along with this letter. Kindly share this with your friends.

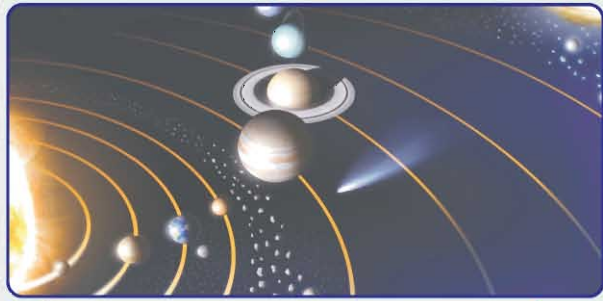
With regards,

Yours lovingly,

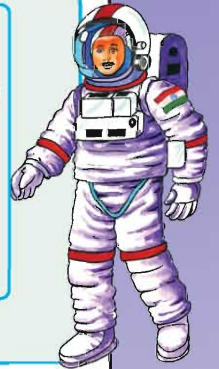
B. Ragul,  
20, Ganapathy Nagar,  
Velankanni-2.

K. Mohan

We can see numerous stars in a clear sky at night. The sun we see every day is also a star. It is also the nearest star to the earth. Planets revolve around the sun at different distances in different orbits. This is called **solar system**.



There are eight planets and more dwarf planets in the solar system. Pluto is one among the dwarf planets.



**Mercury** is the smallest and the nearest planet to the sun. It revolves very fast around the sun.

**Venus** is the second planet. It is very hot. It is the brightest planet. This is visible to our naked eyes from the earth. It moves from east to west. Hence in this planet sun rises in the west and sets in the east.



Third planet is the **Earth** where we live. It has air and water. It supports life. It is our responsibility to protect our earth from pollution.



**Mars** is the fourth planet. It is red in colour. Its mass is half of the earth's mass.

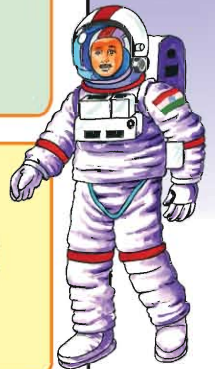
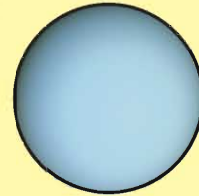


**Jupiter** is the fifth planet. It is the largest planet in the solar system. It has great red spots in it. It is a large gaseous planet.

**Saturn** is the sixth planet. There are big rings around it. It will be very fascinating to see such rings which are yellow in colour.



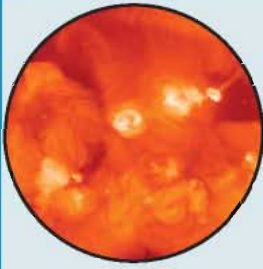
**Uranus** is the seventh planet. It is made up of gases. It also contains rings. It is the coldest planet.



**Neptune** is the eighth planet. It is bluish green in colour surrounded by clouds.



Upto 2006, **Pluto** was considered as the ninth planet. Since it does not have the properties of a planet, now it is regarded as a dwarf planet.



Sun is a ball of fire. It is very hot. Living organisms cannot exist on the earth without Sun.

### Activity



In the given astronaut's picture, stick your photographic face and enjoy seeing you as an astronaut.

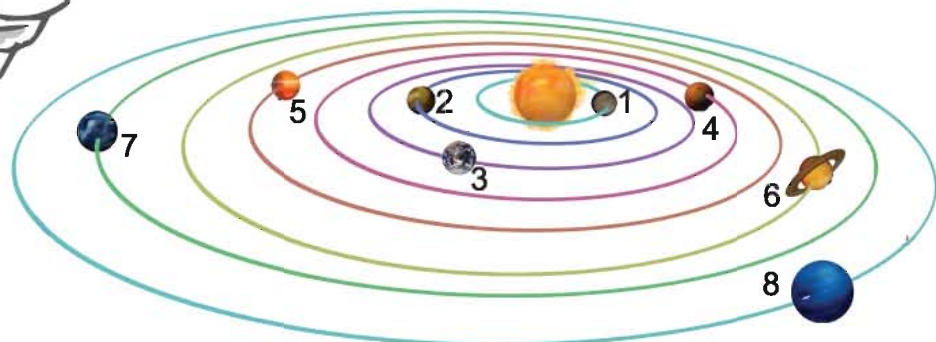
### Do you know?



The planet Pluto which was removed from the solar system was named by a girl called Venachia in 1930. At that time she was 11 years old.

Venachia is of \_\_\_\_\_ age now.

### Solar System

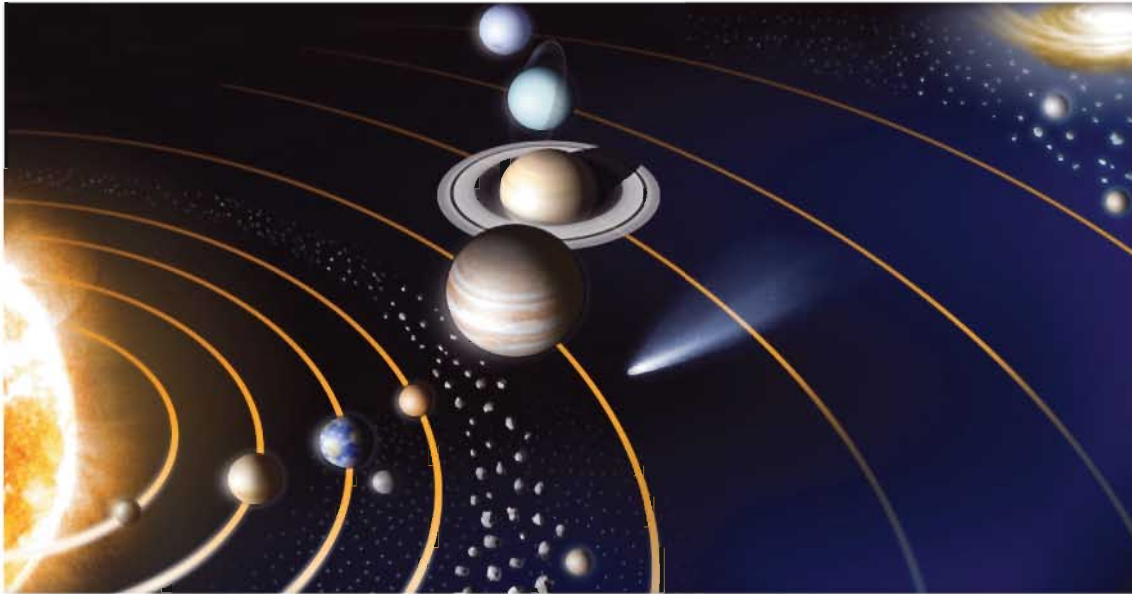


1. Mercury
2. Venus
3. Earth
4. Mars
5. Jupiter
6. Saturn
7. Uranus
8. Neptune

## Activity



Look at the picture and find out the position of the planets and write



**Mercury** is the nearest planet to the Sun.

4th Planet \_\_\_\_\_ 5th Planet \_\_\_\_\_

7th Planet \_\_\_\_\_ 2nd Planet \_\_\_\_\_

3rd Planet \_\_\_\_\_ 8th Planet \_\_\_\_\_

6th Planet \_\_\_\_\_

### Do you know?



We can see planets such as Venus, Mars, Mercury, Jupiter and Saturn through our naked eye. Whenever such planet could be seen in the sky, it will be published in the news papers. With the help of the elders try to see the planets.

## Night sky

Normally what all can be seen in the night sky?

- ★ Name the instrument used by the child to observe sky.



- ★ What all can be seen in the night sky?

**Moon, Stars, Planets and meteors can be seen.**

From ancient time man was fascinated by the night sky. It is a fabulous scene which would impress the poet to compose poems about stars and moon. Sailors, by following the position of moon, stars, planets and sun found the directions properly. Farmers have understood the phenomenon of seasons. As a result, they raise crops suitable to the season.

One can see some substances that give light and appears to fall towards the earth . What are they?



There are a number of asteroids in space. Sometimes they come towards the earth. As they come downward, it catches fire due to friction with the atmosphere. Such **asteroids** are called meteors.

**Do you know?**

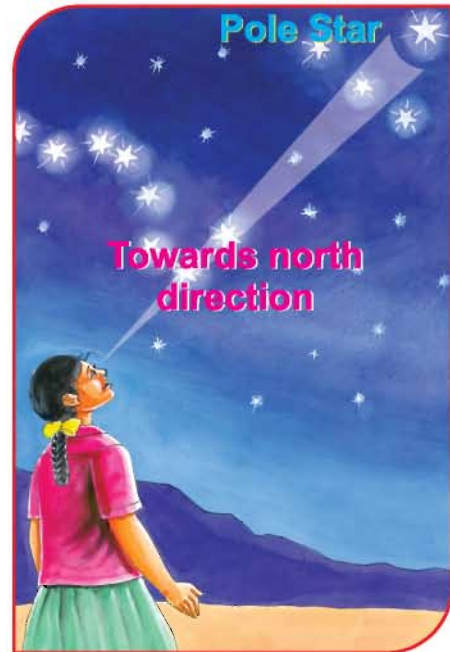


**Halley comet appears once in 75 to 76 years . Last time it appeared in 1986 and again it will appear in 2061 .It was discovered by Edmund Halley. It can be seen revolving round the Sun by our naked eyes.**

## Pole star

The brightest star that can be seen through our naked eye is the **pole star**. It can be seen in the northern direction.

The speciality of this pole star is that it remains in one particular position while other stars appear to change their position every day. Due to this property, it is used as a guide by the sailors.



Do stars have tail?

**Comets** also exist in the solar system. They are made up of gases. When it comes closer to the Sun the gases expand and appear like a tail. It will always be in the **opposite to the direction** to the Sun.





## Evaluation

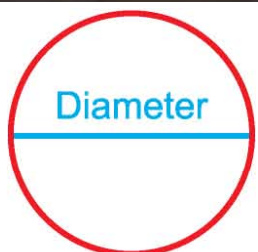
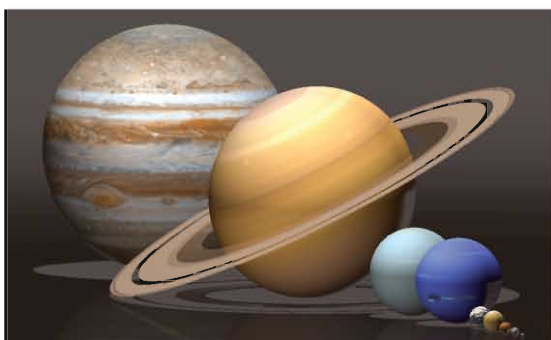


(a) Keenly observe the picture and answer the following.



1. Write the names of the planets in the solar system.
2. Which is the nearest planet to the sun?
3. Name the largest planet in the solar system.
4. Name the smallest planet in the solar system.

(b) Look at the table given below and answer the following.



Name of the planets	Diametre of the planets (Km.)
Mercury	4828
Venus	12104
Earth	12756
Mars	6787
Jupiter	142796
Saturn	120660
Uranus	51118
Neptune	48600

1. Which planet has the largest diameter ?
2. Which planet has the shortest diameter?
3. What is the diameter of the earth?

**(c) Fill in the blanks with appropriate words.**

1. There are \_\_\_\_\_ (8/9) planets In the solar system
2. Sun is a ball of \_\_\_\_\_ ( Fire / Ice )
3. Living organisms exist in the \_\_\_\_\_ ( Uranus / earth )
4. The eighth planet In the solar system is \_\_\_\_\_ ( Neptune / Mercury)

**(d) Match the following.**

- |            |                |                          |
|------------|----------------|--------------------------|
| 1. Jupiter | Fifth planet   | <input type="checkbox"/> |
| 2. Pluto   | Nearest planet | <input type="checkbox"/> |
| 3. Saturn  | Largest planet | <input type="checkbox"/> |
| 4. Mercury | Life exists    | <input type="checkbox"/> |
| 5. Earth   | Dwarf planet   | <input type="checkbox"/> |

**(e) Write in brief.**

1. What is the solar system?
2. What is a comet?
3. Write short note on meteors
4. Write about venus
5. Write about polestar

**Do you know?**

Asia's largest telescope is in Tamilnadu. It is situated at Kavalur in Javathu Mountain in Thrivannamalai District. It is named as Vainubabu. Its diameter is 2.3 meter. It was designed and made in India in 1986 and a small planet was observed through this telescope in 1988. This planet is named 4130 Ramanujar.

## Do you know?



Manmade satellites are sent to revolve around the earth. India's satellite is Indian National Satellite (INSAT). Since 1983, many satellites have been sent for communication and for environmental research purposes. In the year 2000, INSAT 3-B satellite was sent for the use of mobile phone. In 2004, satellite EDUSAT was sent for the students education. In 2007, INSAT 4CR was sent for DTH telecommunication and it is still in operation.



(INSAT) 3B



















INSAT 4-CR



# 5

## WATER



SUN	MON	TUE	WED	THU	FRI	SAT
			 1	2	3	 4
5	6	 7	 8	 9	10	11
12	 13	 14	 15	 16	17	18
 19	 20	 21	 22	 23	24	25
26	 27	28	 29	30		

1. How many days did it not rain as per this calendar?
2. How many days did it rain as per this calendar?
3. How many days did it rain heavily?
4. From 13<sup>th</sup> for \_\_\_\_\_ days, it rained continuously.
5. What are the effects of continuous rain?
  - Flood
  - Falling of trees
  - Land slides

Where will the rain water flow when it rains continuously?

## Water! Water!

The excess rain water during rainy season is stored in natural ponds, lakes and canals. It is also stored in dams that are built across rivers. This kind of stored water can be utilized to check water shortage during the time of drought. Rain water can be stored for drinking purpose by constructing rain water harvesting pits. By this method, ground water level is conserved.

We can collect and conserve rain water from the roofs of all types of houses through proper rain water harvesting tanks.

Thus we can bring down the level of water shortage.



### Do you know?



A few centuries ago Karikal Chozhan constructed Kallanai across the river Cauvery to conserve water.

## Activity



### Rain Gauge

**Requirements** : Cylindrical glass vessel, funnel, scale and thread.

**Procedure** : Place the funnel in the glass vessel. Keep the scale outside the vessel and tie it in such a way that '0' cm of the scale is at the bottom. Keep this set up in the open ground. Measure the amount of rain that fell for the whole day using the scale. The amount of rain for the whole day is \_\_\_\_\_ cm.

Use this rain gauge and measure the amount of rain for a week and tabulate them.

Days	Amount of rain in cm
1	
2	
3	
4	
5	
6	
7	

### Rain Gauge

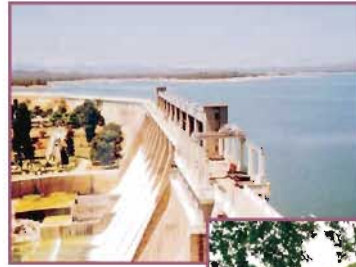


Find out from the newspaper and write what was the average rainfall last year in your district.

## Activity



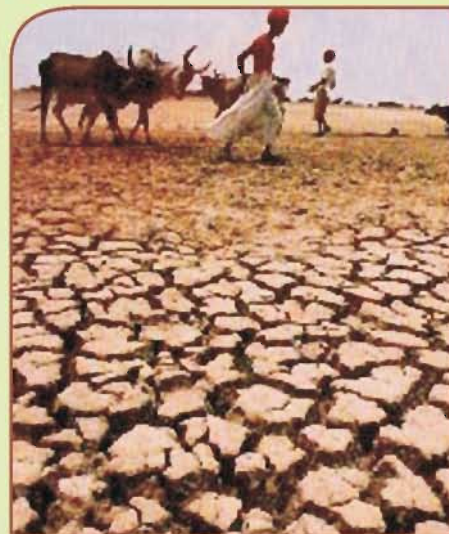
- What are the methods followed to conserve water in your area?
- How do you conserve rain water in your house?



## Water Scarcity

We do not get rain in all the months of a year. Whenever there is no rain it will be rather sunny. Which months of the year will there be high temperature and warmth at your place?

Climatic conditions will not be the same throughout the year. During summer, as the temperature increases, the level of water from water resources such as river, pond, well and ground water table decreases. People of various parts of the country suffer from scarcity of water.



## What will happen during the time of drought?

- Drying up of cultivable lands.
- Drying up of water resources.
- Scarcity of water.

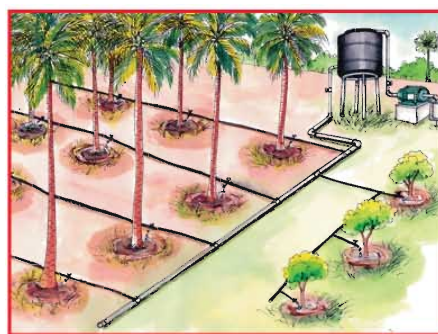
## Water scarcity in our day-to-day life.

Due to the drying up of drinking water resources, we see people

- Buying drinking water.
- Waiting in long queue to get the drinking water.
- Bringing drinking water from far away places.
- Forest animals enter the residential areas in search of water.

## To use water economically

- Letting used water into the garden.
- We can water the plants using drip irrigation method.
- We can water the garden plants using watering can.



Drip irrigation method

Project:



Enter the quantity of water used in day-to-day life in the given table.

Usage	For one day ( in litre )
Drinking	
Cooking	
To take bath, wash face, hands, legs.	
Washing vessels, clothes.	
<b>Total amount of water</b>	

Discuss in group whether water usage in your house is less in quantity, right quantity or more quantity.



Project:



Look at the picture and write in ascending order the amount of water required to do the above activities.

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## CONSERVATION OF WATER

The need for water increases day by day. At the same time, the level of water in water resources are decreasing. In this situation, we must use water wisely.

Drinking contaminated water causes diseases like Cholera, Jaundice, Typhoid, etc. By drinking purified water, we can avoid diseases.

We must preserve drinking water from getting polluted.



### How can we get purified / protected water?

1. We must drink water which is purified using certain amount of chlorine.
2. It is essential to drink water which is boiled and filtered.
3. Germs get destroyed by boiling the water. Drinking water vessels must be cleaned often.
4. Drinking water must always be closed with a lid.

### Find out and write.

1. How many drinking water taps are there in your school?
2. Where does the stagnant water under the tap go?

Water is not seen in planets other than the Earth. So there is no life in other planets. So we should not waste water which is a very precious resource.

**SAVE WATER !**

**SAVE EARTH !**

## Evaluation



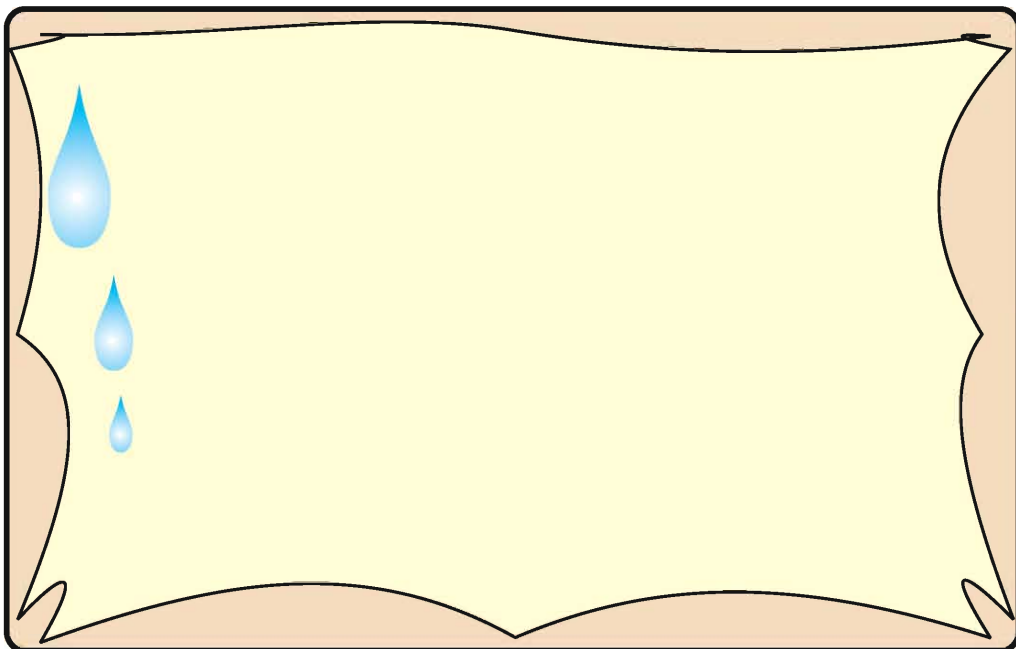
### (a) True or False.

1. There will be drought if it rains heavily.
2. Water resources are decreasing day by day.
3. Chlorine is used for purifying the drinking water.
4. We should not wash very often the vessels in which we store drinking water.
5. Deforestation increases the rain.

### (b) Answer the following.

1. Name the diseases caused by drinking contaminated water.
2. What are the hazards of flood?
3. From where do you get drinking water?
4. What are the methods you follow to purify the drinking water?
5. What are the advantages of saving rain water?

### (c) Write the methods to be followed in order to use water economically at home and in school.





### A Melody in the breeze..

Air is a mixture - a gaseous mixture!  
It's indeed easy to find its measure!!

Oxygen, our friend, supports life on earth,  
And Nitrogen fertilizes the earth.

Carbon di oxide makes soft drinks fizzle!  
while inert gases have been a puzzle!!

Water vapour from sea, river and steam,  
And the hot, violent, angry whistling steam,

Into the cool air, they rise so slowly!  
Merge as thick, soft clouds drifting so gently!!

Look! How softly they come down aglitter  
To fill the earth with life - giving water!!

Like a widely spread blanket in the sky,  
The clouds guard us from the heat from on high.

Ceaseless atomic rays and cosmic dust  
Assail our earth like an unwelcome guest.

Our dear pal ozone - oxygen, again -  
Puts up a valiant defence in vain.

For man pollutes the air, makes little holes  
In the umbrella meant to save our souls!!

To save this gracious earth, our own mother,  
We've got to act now, dear sister, brother!

## Shall we enjoy the breeze!

Do you like to play by making a paper fan?

When does the fan rotate faster?



Have you seen clothes sway along the cords ?

Why do trees, herbs and climbers sway?



Which are the months suitable to fly kites and why?

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There is air around us. We cannot see air, but we can feel it. Air does not have colour or odour. Living organisms need air to breathe.

### Water vapour in air.

Water vapour comes out while cooking. Have you seen it? The water vapour that comes out mixes with the air. What else is present in the air?



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## Activity

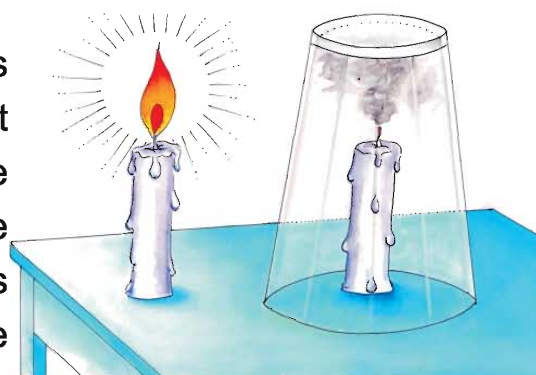
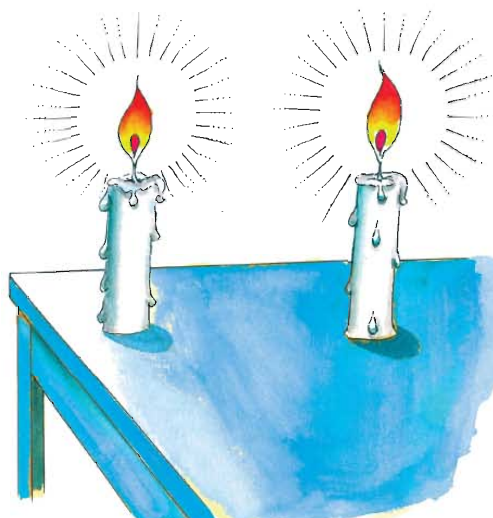


### Life giving Air-Oxygen

Light two candles as shown in the picture. Keep one candle closed by a glass tumbler. What happens?

The candle which is kept closed is put out after a little while. But the one which is not closed, burns continuously, isn't it so?

Oxygen present in the air supports burning of materials. **Oxygen** present inside the tumbler is used up by the candle and hence it is put out. But the candle that is kept outside, still burns by taking the oxygen present in the air.

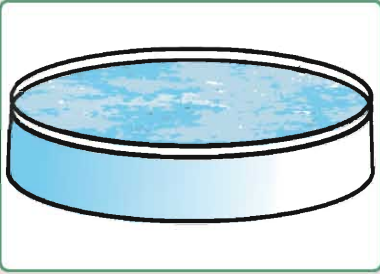


**From this experiment we know that...**

Oxygen is present in the Air.  
The burning of materials require Oxygen

Oxygen present in the air is needed for the respiration of man, animals and plants.

Is oxygen alone present in the Air?



### Activity



Take lime water in a wide mouthed vessel. Keep it outside in the atmospheric air. Observe keenly for some time.

A white layer forms on the surface of lime water. Doesn't it? Do you know what turns lime water milky? The carbon dioxide that is present in the air turns lime water milky.

### Do you know?



Have you seen gas bubbles coming out from the air tight cool drink bottles while opening? It is nothing but the carbon dioxide which is present in the cool drinks.

carbon dioxide is needed for the plants to prepare food.

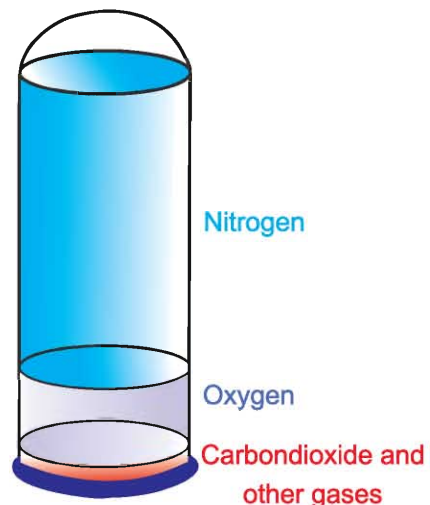
### Think it over!



Avoid drinking cool drinks that contain carbon-dioxide which is harmful to health.

Do you know which gas is mixed in the air in more quantity than oxygen and carbon-dioxide?

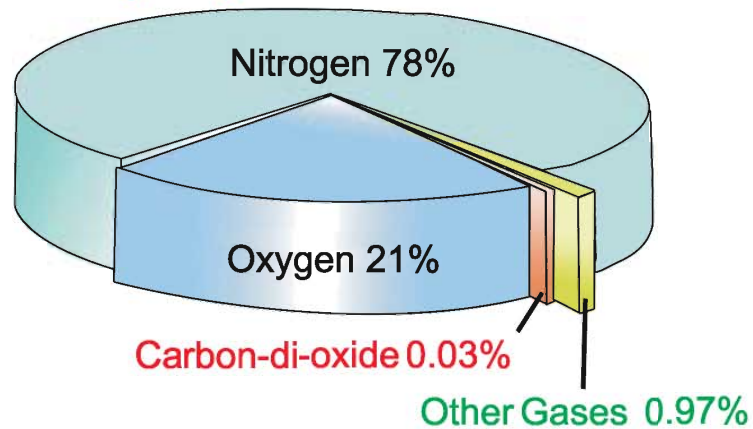
Among the gases present in the air four-fifth of the air consists of Nitrogen. It is necessary for the growth of plants. This requirement is fulfilled by the nitrogen that is in the air. Nitrogen does not support burning.



## Air is a mixture

Gases like nitrogen, oxygen, carbon-di-oxide, water vapour and dust particles are mixed in the air.

Look at the percentage of gases in the air



Think and write



When we breathe in and breathe out, the percentage of the gases present in the air is given in the table.

Gases	Inspiration	Expiration
Oxygen	21%	18%
Carbon-di-oxide	0.03%	3%
Nitrogen	78%	78%
Water vapour	trace	more

- Which gas is in less percentage during expiration?

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- Which gas is in more percentage during expiration? why?

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## Blanket that covers the earth

Due to the gravitational force of the Earth, there is a blanket of air about 1000 km thick around the earth. This is called the atmosphere. This atmosphere helps the living organisms to live, by providing the suitable temperature on the Earth.

Think it over!



Plants do not grow in the soil found on the Moon's surface. But if the same soil is brought to the Earth, seeds are sown and watered, plants would grow. Why? Astronauts fixed a tin flag on the Moon but not the flag made of cloth. Why?



Do you know?



**Poison mixed in the air:**

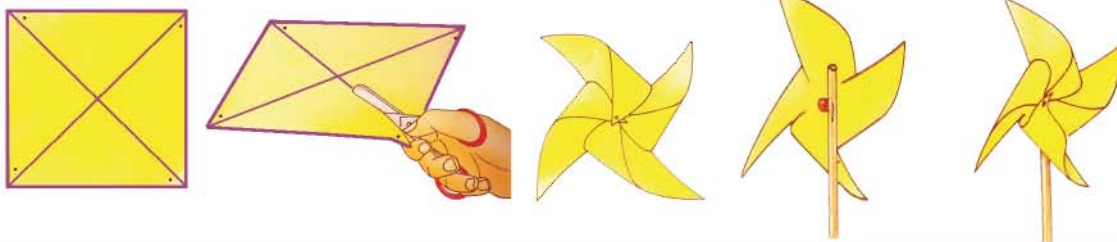
In 1984, at Bhopal, the capital city of Madhya Pradesh, there was a leakage of methyl isocyanide gas from a factory which resulted in the death of thousands of people.

**Could this happen again?**

Activity



Look at the picture and try to make a paper fan.



## Evaluation



### (a) Fill in the blanks.

1. Air is a \_\_\_\_\_.
2. While breathing, man gives out \_\_\_\_\_ gas.
3. The percentage of oxygen in the air is \_\_\_\_\_.
4. The atmosphere provides suitable \_\_\_\_\_.
5. The \_\_\_\_\_ gas is present in soft drinks.
6. Burning of materials require \_\_\_\_\_.
7. Boiling of water resulted in the formation of \_\_\_\_\_.
8. \_\_\_\_\_ is the City in Madhya Pradesh, which was affected by poisonous gas in 1984.
9. \_\_\_\_\_ is needed for the growth of plants.
10. While breathing, the percentage of the \_\_\_\_\_ gas remains the same.

### (b) Match the following:

- |                  |   |                |                          |
|------------------|---|----------------|--------------------------|
| 1. Breathing     | - | Nitrogen       | <input type="checkbox"/> |
| 2. Lime water    | - | Water vapour   | <input type="checkbox"/> |
| 3. More in air   | - | Carbon dioxide | <input type="checkbox"/> |
| 4. Boiling water | - | Oxygen         | <input type="checkbox"/> |

### (c) Think and answer.

1. Mention the constituents of air.
2. How is nitrogen useful?
3. Mention two uses of oxygen.
4. What is called inspiration?
5. What are the incidents by which we can find out that air is blowing?

Think it over!



How does the balloon used for advertisement fly high in the air?

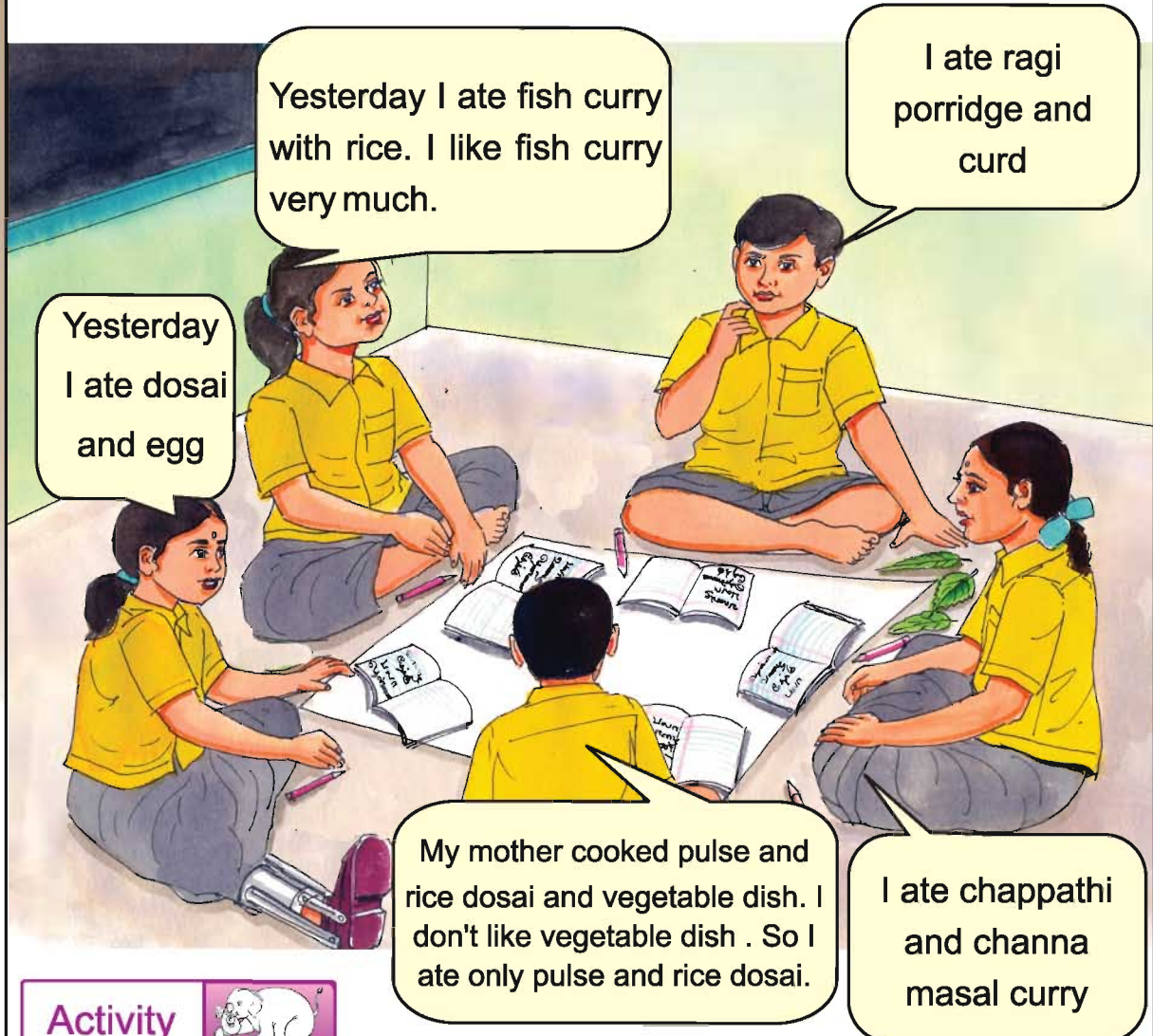
# 7

## FOOD



There was a discussion in the class room on the topic "What did you eat yesterday?"

In the discussion, the students said the following.



**Activity** 

Write about what you ate yesterday.

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Basic needs of our life are **food, clothing** and **shelter**. The most important among these is food. All living things need food.

### Splendour of food.

- Food gives us energy to work.
- Food Promotes for growth.
- Food gives us immunity.

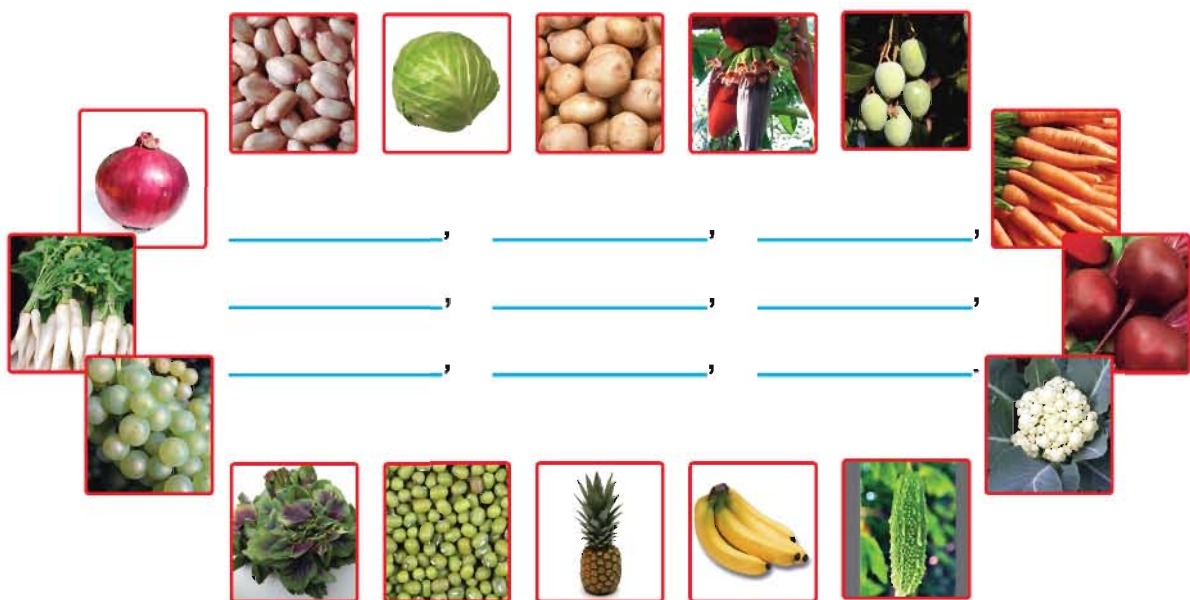
Food substances are classified into two categories. They are **raw food** and **cooked food**.

### RAW FOOD

When we eat raw fruits, vegetables and tubers, body will get complete nutrients and our immunity increases.

Think it over! 

From the pictures, write the food that can be eaten raw:



\_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_

\_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_

\_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_

## Activity



### Preparation of fruit salad

Take banana, papaya, apple, grapes and pine apple in a vessel. Wash them and cut into small pieces. Add sugar and taste it.



### Vegetable Juice

Make juices of carrot, beetroot and cucumber. Add little lime juice, sugar and taste it. Superb taste!

### Sprouted grains

Take a little quantity of bengal gram or green gram and wash thoroughly. Soak it in water in the morning. Tie it in a clean wet cloth in the evening. The next day you will find that the grains have sprouted. We can eat them raw or cook them in steam. It contains more protein.



## COOKED FOOD

Can we eat all food substances raw? No, we cannot. A few foods can be eaten by cooked only.

When cooked..

- Food gets digested easily.
- Add taste and aroma, germs are killed.
- Food becomes soft.



### For Teachers...



Ask each one of the students to bring vegetables, fruits and grains which are easily available at home and to cook them in groups.

## METHODS OF COOKING

Are we cooking all the food in the same way? We cook each food differently.



Cooking in steam



Deep Fry



Roasting



Frying



Cooking in water

### Activity



Enter in the table, the methods of cooking for the following food items.

Rice, chapathi, poori, tuber, Thick dosai, murukku, lady's finger, beet root, papad, carrort, spiced pulses, puttu, greens, idly, banana's stem, idiaappam, dosai, vadagam, kozhukattai, parota, porridge, adhirasam and paniaram.

Cooking in water	Cooking in steam	Roasting	Frying	Deep Frying

## VARIETIES OF UTENSILS

Observe the cooking utensils at your house. Are they all of the same size and shape? No. Why? According to the method of cooking, the size and shape of the utensils used for cooking will vary.

First whistle  
Next meal  
Name the utensils  
\_\_\_\_\_

List the utensils used for cooking at your house.

---



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Earlier, earthen pots were used for cooking. Later utensils made of iron, brass, stainless steel and aluminium came into existence.



Now-a-days Pressure cookers are being used to reduce fuel consumption and to preserve nutrients.

Activity

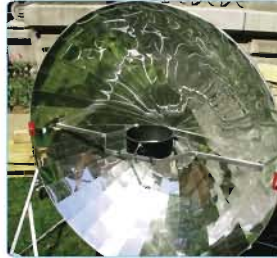


What? How? Which?

Food item	Method of cooking	Utensils used
Idly		
Poori		
Dosai		
Rice		

### Modern utensils are used for fast cooking

It includes, Induction stove, electric cooker, solar cooker and microwave oven.



### Healthy food

For a healthy body, nutritious and hygienic food is necessary. So it is necessary to protect the food from spoilage.

- We must wash vegetables, fruits and greens before using them.
- Food materials must be covered in order to protect them from dust and insects.
- It is better to eat the cooked food when it is warm.

### Foods required for sick people

For a healthy life, fresh air, clean water and nutritious food are necessary. Lack of any one of these may cause diseases. When we are sick, we cannot eat all types of food, can we?

#### When we are sick

- Eat food that gets digested easily.
- Liquid food such as porridge, fruit juice and tender coconut are good to drink.
- Eat food that contains less fat.
- Avoid eating pungent food.
- Avoid eating food fried in oil.



## Activity



What sort of foods are to be avoided when sick?

What sort of foods can be eaten? Write in the Tabular column.

Bread, meat, milk,  
Parotta, Briyani, Fish fry,  
Porridge, Energy drinks,  
Herbal decoction, Bajji.

To be avoided	To be eaten

### Grocery is here

1. Rice, moongdal
2. Bengal gram
3. Vermicilli
4. Rice, green gram
5. Wheat

### Where is food?

- Pongal
- Payasam (Gheer)
- Idli
- Chappati
- Vadai

Fill in the boxes with proper number

## Evaluation



### (a) Fill in the blanks.

1. Food is needed for good \_\_\_\_\_.
2. We get immunity from \_\_\_\_\_.
3. By \_\_\_\_\_, the aroma and taste of food is increased.
4. \_\_\_\_\_ is used for cooking with less fuel consumption and preserve the nutrients.
5. We should \_\_\_\_\_ the cooked food.

### (b) True or False.

1. Food is not useful for the growth of body.
2. By taking food, we are losing energy.
3. While cooking, germs in the food are destroyed.
4. Cooking in steam is a method of cooking.
5. When we are sick, we should eat food containing more cholesterol.

### (c) Match the following.

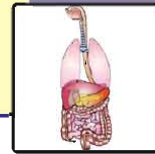
- |              |   |                  |                          |
|--------------|---|------------------|--------------------------|
| 1. Idly      | – | Cooking in water | <input type="checkbox"/> |
| 2. Appalam   | – | Fry              | <input type="checkbox"/> |
| 3. Chappathi | – | Deep Frying      | <input type="checkbox"/> |
| 4. Rice      | – | Roasting         | <input type="checkbox"/> |
| 5. Groundnut | – | Cooking in steam | <input type="checkbox"/> |

### (d) Answer the following.

1. What are the uses of food?
2. Mention two types of food.
3. Name two food items that can be eaten raw.
4. What is the use of cooking in pressure cooker?
5. Write the name of vegetables and fruits that you like to eat?

# 8

## HUMAN BODY



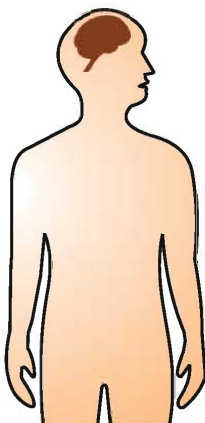
Our body is a wonderful machine. There are various organs present in our body. Eyes, ears, nose, hands and legs are seen outside the body. They are used for various activities.

Organs of the body	Functions
Eyes	To see
Ears	
Nose	
Hands	
Legs	

Organs like brain, heart, lungs, kidneys and liver are inside the body. These are called internal organs. They perform various functions.

### BRAIN

Brain is used for thinking, imagining, storing information in memory. Brain is an important organ and it is protected in the head by the skull

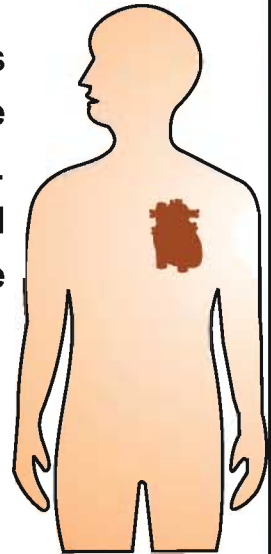


Human brain weighs about 1.36 kg. Standing, walking, running, singing, writing, speaking etc., are controlled by the brain.

## HEART



Our heart is made of muscles. It is located in between the lungs in the chest. Human heart has four chambers. The two upper chambers are called auricles and the two lower chambers are called ventricles.

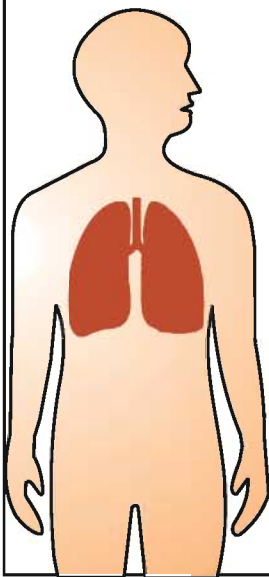


Heart sends oxygenated blood to all parts of the body.

The size of your heart is the size of your fist.

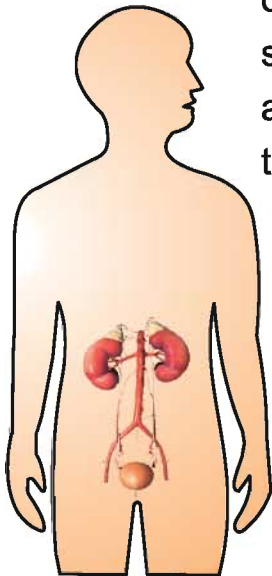
## LUNGS

There are a pair of soft foam like lungs within our thoracic cavity. It consists of thousands of air sacs called alveoli. During respiration exchange of gas takes place in alveoli.

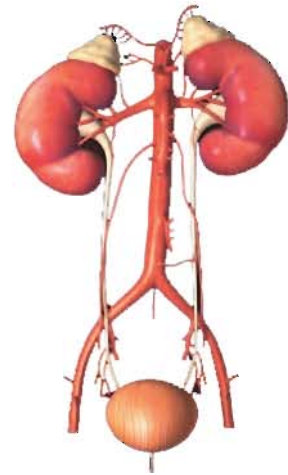


A healthy man respire about 12 to 15 times per minute. More amount of oxygen is needed for the function of muscles. Respiration takes place continuously during day and night.

## KIDNEY



Two bean shaped and pale red coloured, kidneys are present in our body. They are located on either side of the spinal cord in the abdominal region. Their function is to excrete waste from the blood in the form of urine.



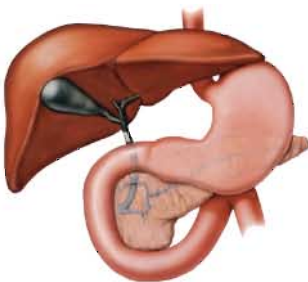
The amount of urine excreted from the human body per day is about **1.5 to 2 litres**.

## STOMACH

Stomach is a 'J' shaped organ found after the food pipe. It is found in the left side of our body. This organ helps in the digestion of food.



## LIVER



Liver is the largest internal organ of our body. Liver is one of the organs of the digestive system. It is dark reddish in colour. It lies above the stomach. It secretes bile. Bile helps in the digestion of fat.

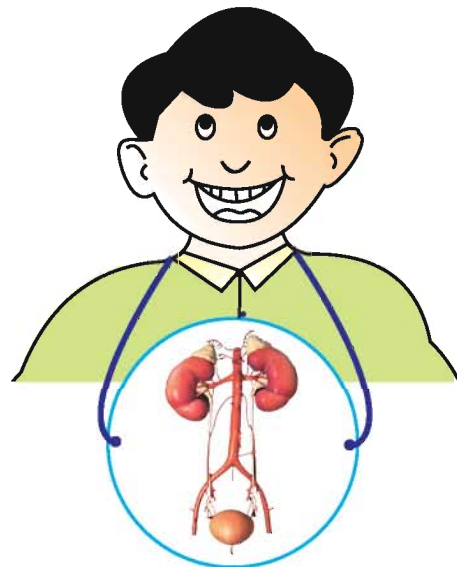
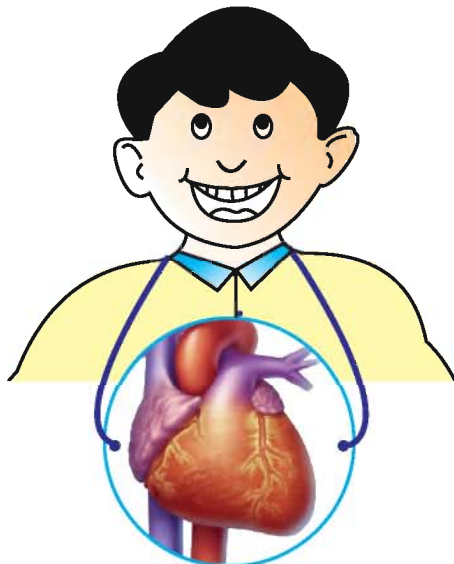
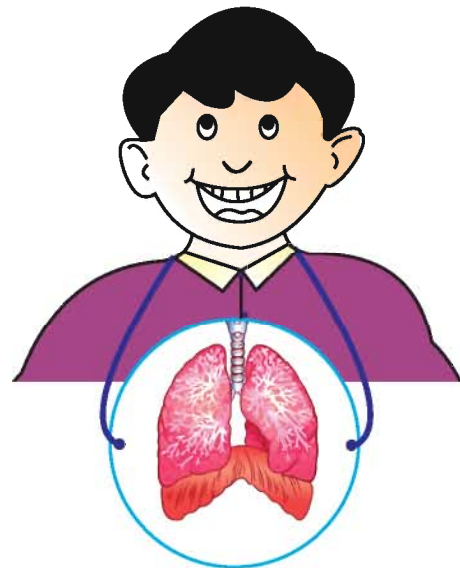
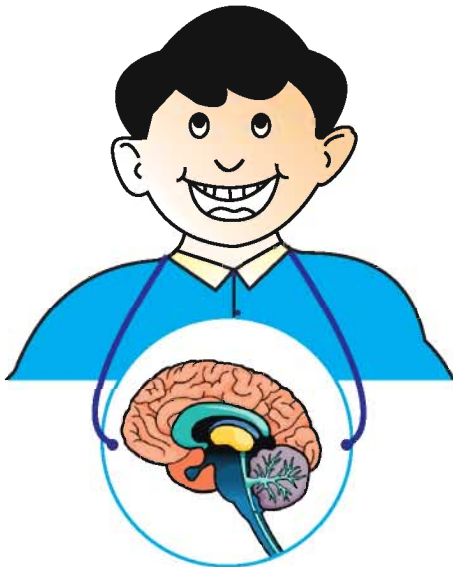
Liver of an adult man weighs about **1.5 kg**.

Since the internal organs coordinate and function properly we are able to lead a healthy life. These organs keep us healthy by working without rest even when we are asleep. We should take care of them.

### Activity



Hang the pictures of the internal organ around your neck. Imagine that you are that organ and enact it.

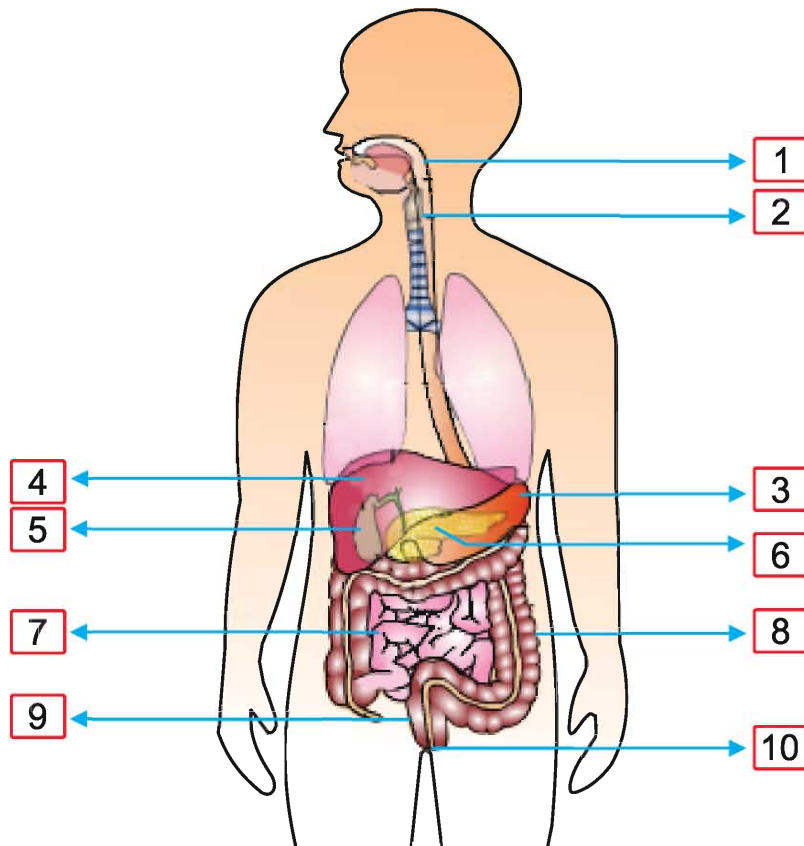


## DIGESTIVE SYSTEM

Our body cannot absorb the food as what we eat. The digestive system helps in breaking the food into simple ones. The process of breaking down food to simple and easily soluble one is called digestion.

Disgested food mixes with the blood stream and gets stored in the muscles and liver. Energy for the body growth is obtained from food.

Disgestive system consists of the following parts.



- |                    |                    |             |
|--------------------|--------------------|-------------|
| 1. Mouth           | 2. Food pipe       | 3. Stomach  |
| 4. Liver           | 5. Gall bladder    | 6. Pancreas |
| 7. Small intestine | 8. Large intestine | 9. Rectum   |
|                    | 10. Anus           |             |

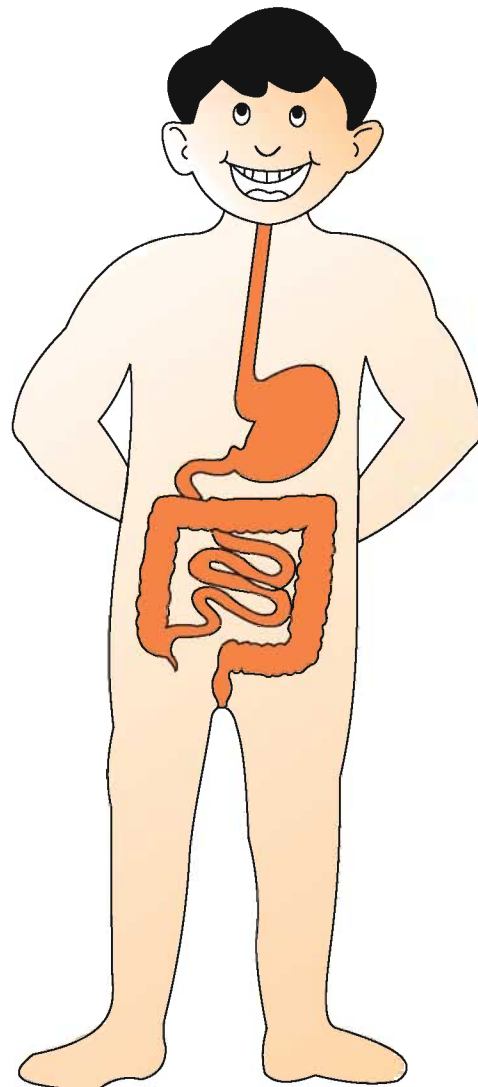
## PROCESS OF DIGESTION

Digestion starts from the mouth. Teeth grind the food we eat. There are three pairs of salivary glands. Saliva secreted from these glands mixes with the food and makes the digestion easier.

Partially digested food is sent through the food pipe to the stomach. When the muscles of the stomach contract and relax, the food in the stomach will get churned and the glands in the wall of the stomach secrete digestive juices and hydrochloric acid to make the food digestible.

Digestion takes place in the first part of the small intestine. The digestible food passes through the small intestine, mixes with the bile juice, pancreatic juice and enzymes secreted in the small intestine there by digestive process comes to an end.

Villi absorb the digested food as it passes through the small intestine. The absorbed food is converted to nutrients and transported to various parts of the body through blood.





Undigested waste products are excreted at the end of the digestive system through large intestine, rectum and anus.

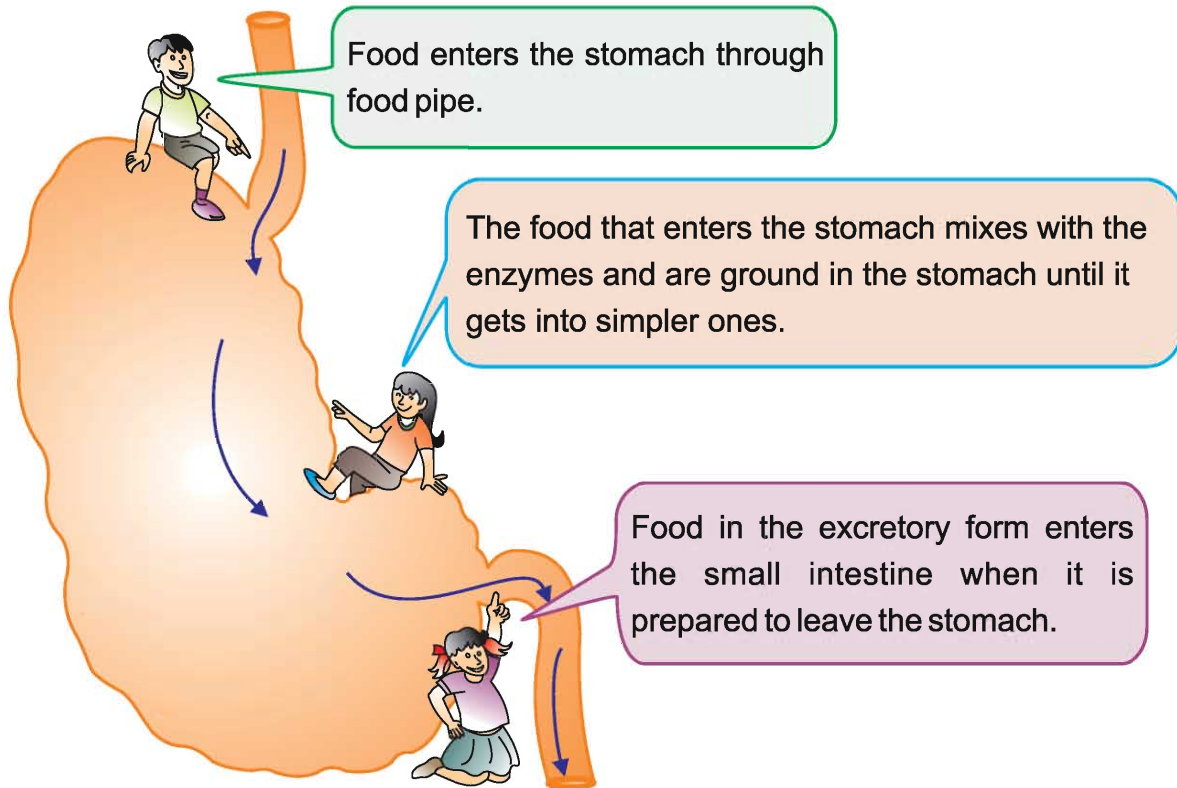
We should eat food rich in fibre such as fruits, greens and Vegetables for better excretion.

Do you know?



Drink around 2.5 litres of water daily.

### Digestive Park



This is small intestine. Here, enzymes are added to the digested food substance.

The food substance is converted into smaller particles and get mixed with the blood.

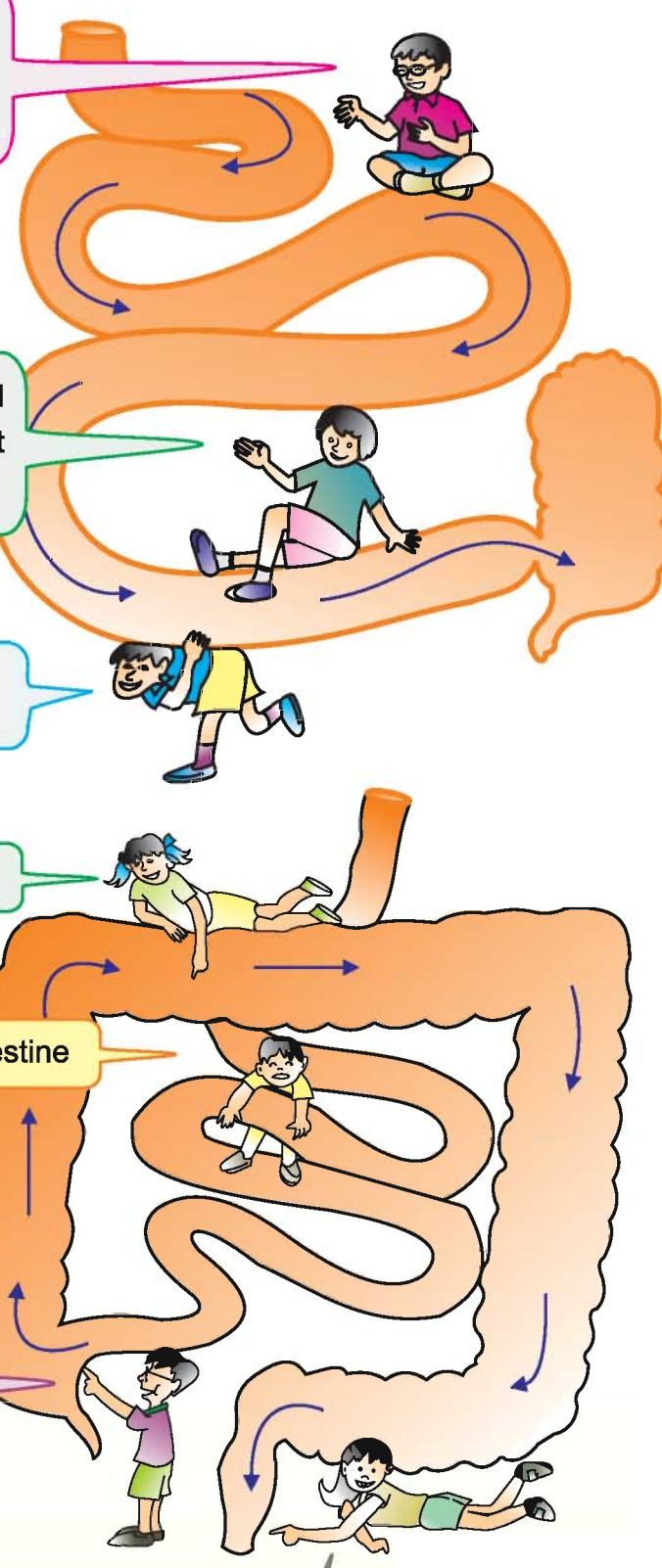
Here digestion gets completed.

This is large intestine

This is small intestine

Undigested food passes into large intestine.

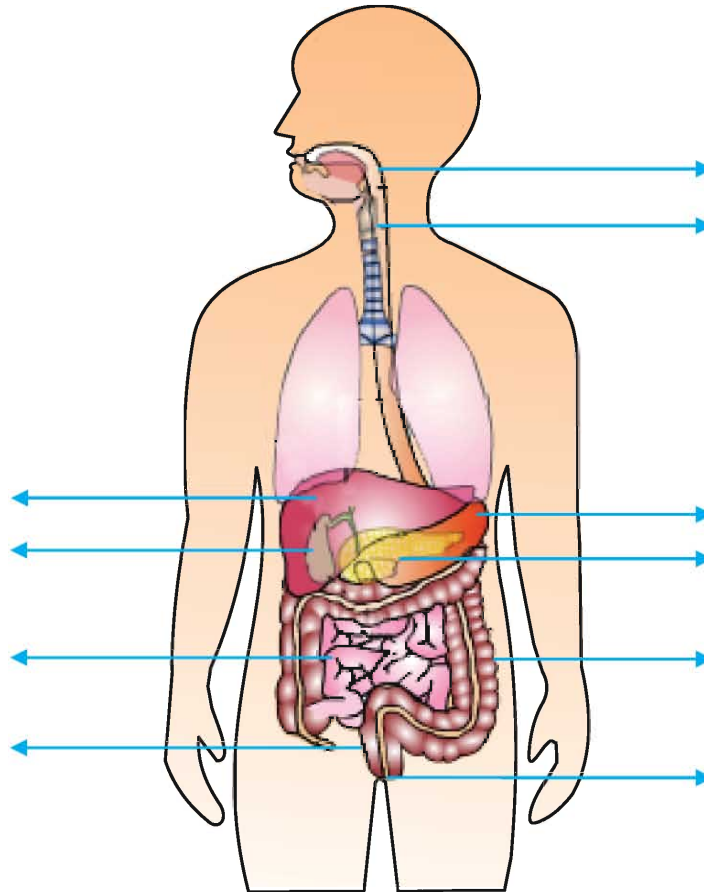
Undigested food is excreted through anus.



## Evaluation



(a) Identify the various parts of the digestive system and name them.



(b) Fill in the blanks.

1. Chambers of the heart are \_\_\_\_\_ and \_\_\_\_\_.
2. Liver is \_\_\_\_\_ in colour.
3. Kidney is \_\_\_\_\_ shaped.
4. Man has \_\_\_\_\_ lungs.
5. Brain of man weighs \_\_\_\_\_ kg.

**(c) Match the following.**

- |            |   |                         |                          |
|------------|---|-------------------------|--------------------------|
| 1. Heart   | - | breathing               | <input type="checkbox"/> |
| 2. Kidney  | - | simpler food substances | <input type="checkbox"/> |
| 3. Lungs   | - | bile juice              | <input type="checkbox"/> |
| 4. Stomach | - | four chambers           | <input type="checkbox"/> |
| 5. Liver   | - | excretion               | <input type="checkbox"/> |

**(d) Answer the following.**

1. What are internal organs?
2. Name some internal organs in the human body.
3. What are the functions of brain?
4. What is the function of kidney?
5. How does breathing takes place in man?
6. What is called digestion?

**(e) Who am I ?**

1. I sound lubb ... dub. \_\_\_\_\_
2. I expand when I take in ... and contract when eliminate. \_\_\_\_\_
3. I will make you think and work. \_\_\_\_\_
4. I excrete waste. \_\_\_\_\_
5. I digest the food. \_\_\_\_\_

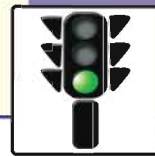
**Activity****Let us make a model of lungs.**

Make a model of lungs using plastic bottle Y shaped tube, two balloons of the same size and one big balloon are fixed to the bottom of the bottle. Pull the balloon at bottom of the bottle downwards. What changes will take place to the balloons inside the bottle?



# 9

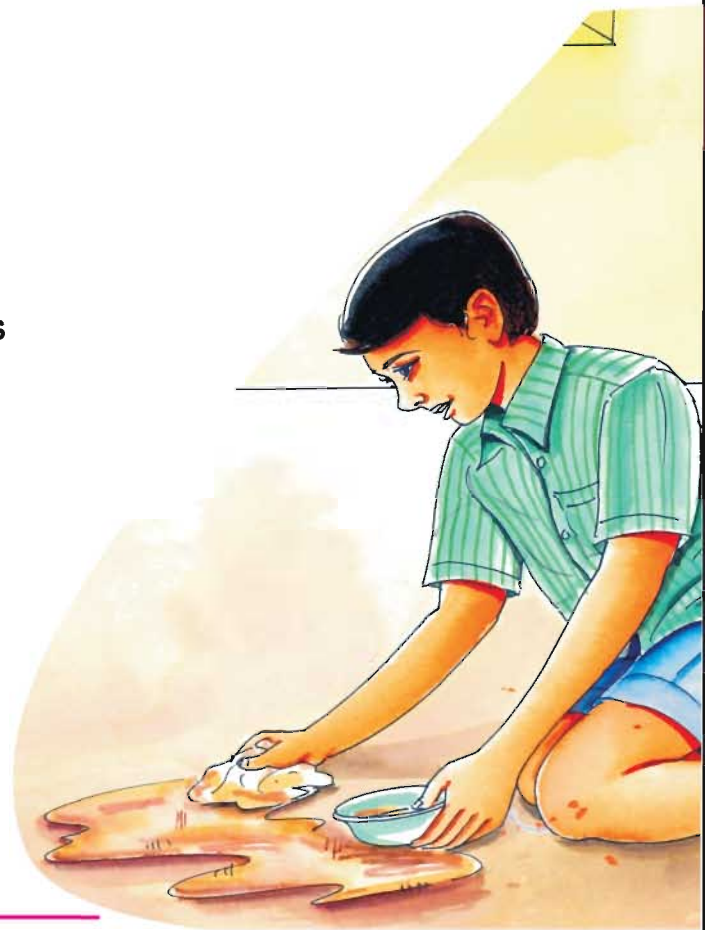
## PERSONAL SAFETY



We read about many accidents in newspapers. Most of the accidents take place due to carelessness. We can avoid such accidents and deaths by following some simple safety rules.

### SAFETY AT HOME

- Do not throw toys, slippers and other things everywhere.
- Keep them in their proper places.
- Clean the water, oil and other liquids spilt on the floor.



#### For Teachers...



Make students to write additional information about the safety rules to be followed at home, road, school and in public places.

### If you smell leakage of cooking gas

- Open the kitchen windows.
- Do not use the electrical switches.
- Close the regulators of the gas cylinders.



### While handling electric appliances

- Do not touch the electrical appliances with wet hands.
- Avoid using electrical appliances with ruptured insulations.
- Avoid using cell phone while it is being charged.



●

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### To avoid being poisoned

- Keep paints, insecticides and medicines away from the reach of children.
- Do not take any medicine without consulting the doctor.
- Do not eat decayed and spoiled food.



●

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## ROAD SAFETY

Most of the accidents take place due to carelessness and inefficiency of the drivers. Strictly follow traffic rules while walking and crossing the roads.

### Road rules

- Must walk only on the platform.
- Do not play on the road.
- Before crossing, look on both sides of the road in turn for any vehicles .
- Do not cross in the space between the parked vehicles.



## Activity



Identify the sign and write its explanation.

Do not park vehicles, railway crossing, hospital, do not horn, turn left, stop, go slow, turn right, listen, go, narrow path.



\_\_\_\_\_



\_\_\_\_\_



\_\_\_\_\_



\_\_\_\_\_



\_\_\_\_\_



\_\_\_\_\_



\_\_\_\_\_



\_\_\_\_\_



\_\_\_\_\_



\_\_\_\_\_



\_\_\_\_\_



## SAFETY AT SCHOOL

Children may fall down and get injured while playing in the play ground.

### To avoid that

- Do not play with sharp tools.
- Do not ignore the games rules.
- Do not involve in rough games.



## SAFETY AT PUBLIC PLACES

- Handle crackers with the help of elders.
- Do not go to the deep waters.
- To avoid stampede, follow the queue system.

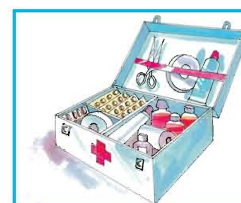
### First Aid

- First control bleeding from an injury and then take the injured to the hospital.
- If a fracture happens, avoid further movements and tie a support to the fractured part. Then go to the hospital.
- Do not approach a non medical practitioner.

- Crawl and come out of the place of a fire accident.
- Pour cold water on the fire injury.
- In case of fire accident happens necessary measures should be taken to avoid further spreading of fire in that area.
- Tie tightly just above the place of bites of poisonous insects like scorpion and consult the doctor immediately.

## First Aid Box

It is very important to have a first aid box in every school. Following things should be available in the first aid box:



- |                                     |                             |
|-------------------------------------|-----------------------------|
| 1. Hot water bottle / hot water bag | 10. Antiseptic ointment     |
| 2. Cotton roll                      | 11. Rubber belt             |
| 3. Sterilized white cloth           | 12. Candle and match box    |
| 4. Gauze bondage                    | 13. Hand towel              |
| 5. Pair of scissors                 | 14. Sodium bicarbonate      |
| 6. Plaster                          | 15. Sodium chloride         |
| 7. Forceps                          | 16. Spirit lamp / Stove     |
| 8. Soap                             | 17. Tincture iodine bottle  |
| 9. Antiseptic lotion                | 18. Tincture Benzoin bottle |

## Evaluation



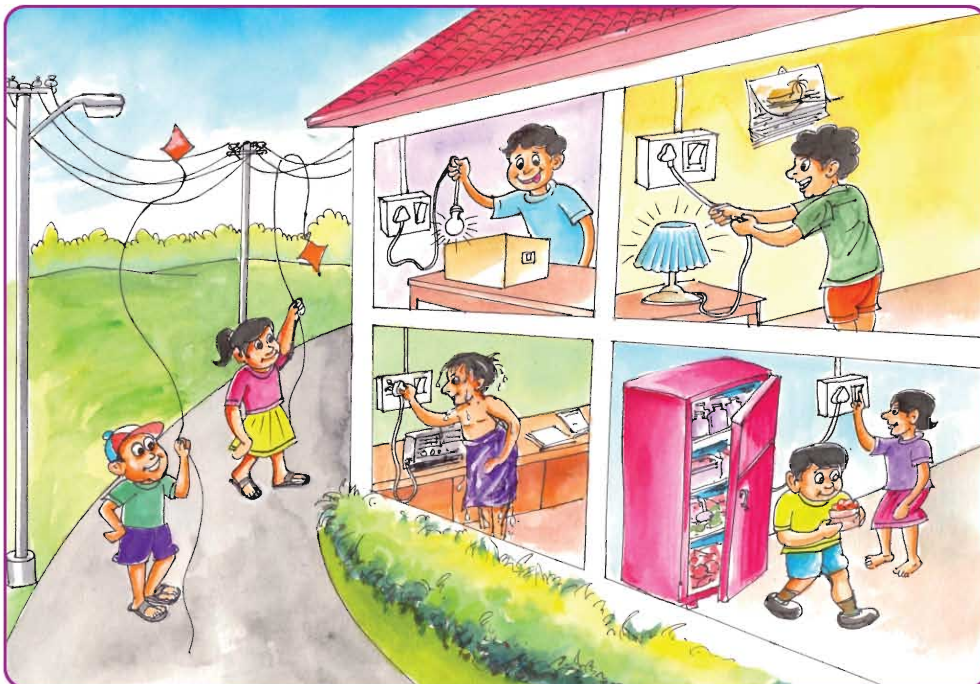
(a) Answer the following.

1. Mention four road rules.
2. Name some common accidents that take place at home.
3. Mention the first aid given to a fractured person.
4. How can one leave from the place of a fire accident?
5. How will you help a blind boy to cross the road while going to school?

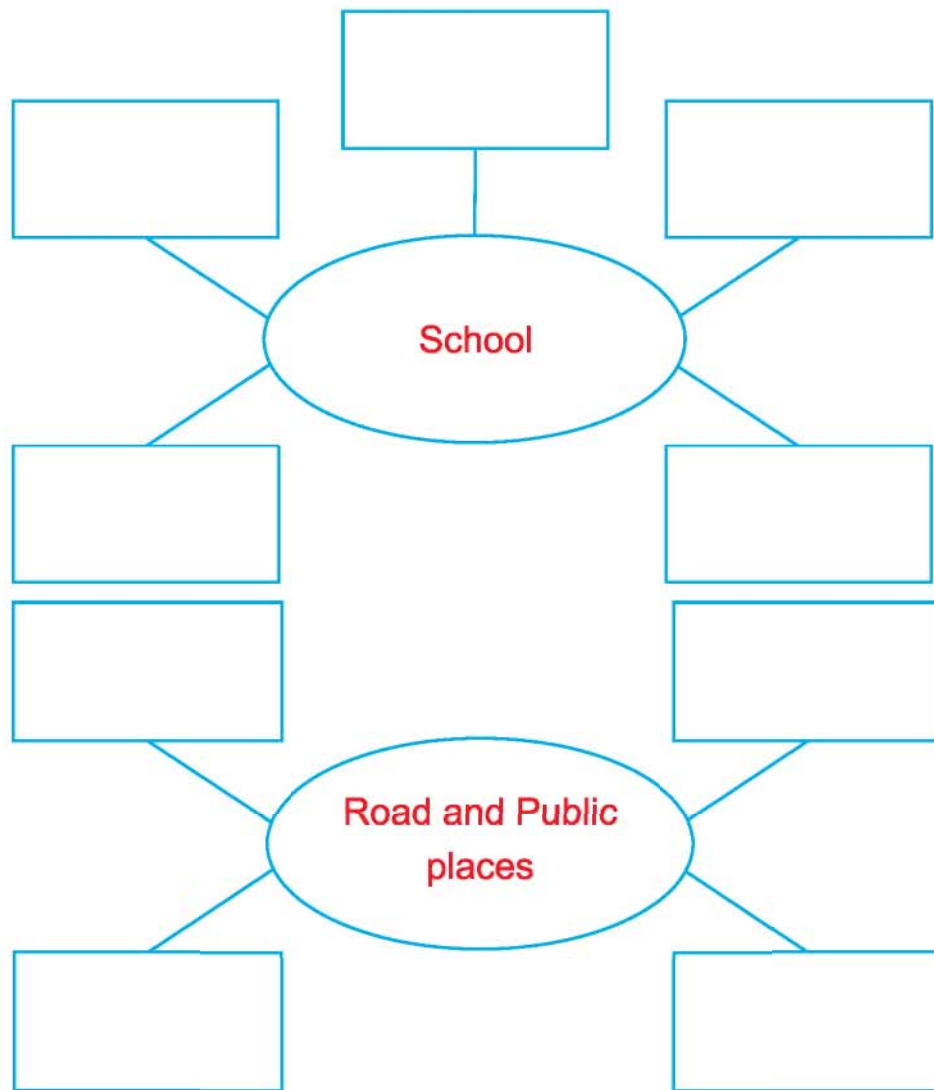
(b) Fill in the blanks.

1. Do not eat contaminated \_\_\_\_\_.
2. Do not touch \_\_\_\_\_ appliances with wet hand.
3. While walking on the road we must walk on the \_\_\_\_\_.
4. Students should learn to go in \_\_\_\_\_.
5. We must wear \_\_\_\_\_ for safety walking.

(c) Discuss the results that may happen due to the wrong activities given in the picture.



(d) Mention some common accidents at School, on Road and in Public places.



(e) What are the first-aid methods for the following accidents? Write.

1. For bone fracture

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2. For fire accident

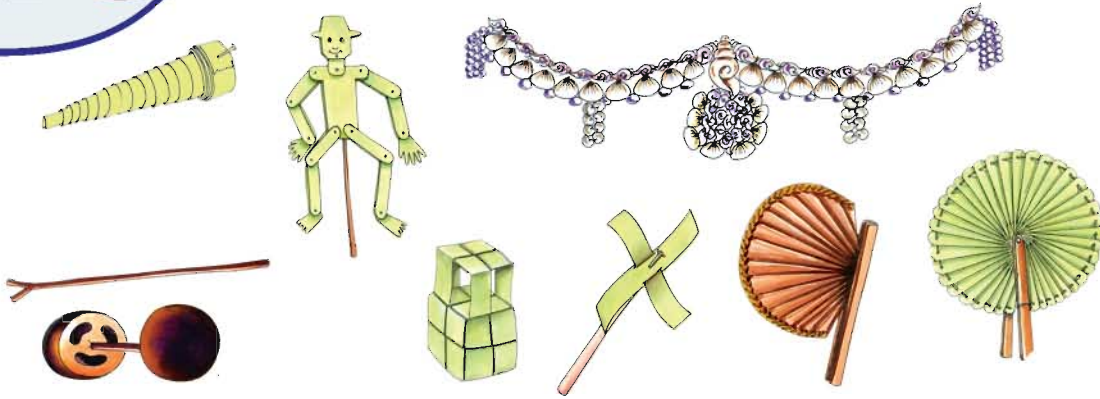
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3. For injury

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# 10

## USES OF NATURAL RESOURCES



Have you played with these things?

Do you know how they are made?

When coconut is peeled we get coconut fibre. It is used for making ropes. Likewise, we get many things from waste products. We use them for different purposes.

### Activity



S.No.	Waste	By-product
1.	Bark of banana tree	Plate
2.	Bark of the coconut tree	rope
3.	Dried tree	
4.	Worn out tyres	
5.	Repaired electrical appliances	

Resources from nature are called natural resources. Plants, animals, aquatic animals, minerals, water and air are natural resources.

The rice we get from paddy plant is used as food.

## PADDY

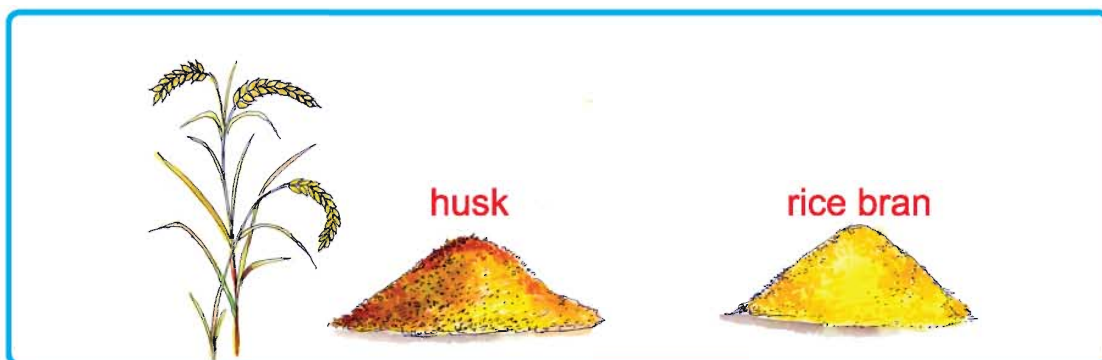
Next to corn, rice is cultivated on large scale in the world. After China, India stands second in the world in the cultivation of rice.

## TWO TYPES OF RICES

**Raw rice** is obtained by removing the husk from the unboiled rice. While removing the husk some of the nutrition are removed. **Boiled rice** is obtained by removing the husk from the boiled and dried rice. In this, nutrition is not lost.

We get rice by removing the husk from the paddy. The things we consider as waste such as husk and ricebran are also useful to us.

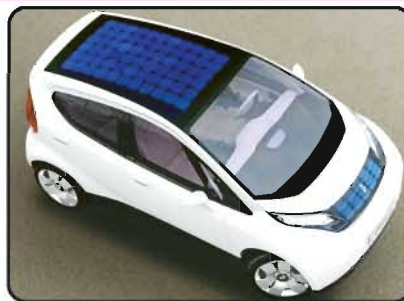
Let us see how they are useful.



## BATTERY FROM HUSK

Look at the car in the picture. These cars do not run on petrol or diesel. They use sunlight through solar cells to run. How solar cells are made? Silicon is required for making solar cells.

Pure silicon is extracted from the husk to make the solar cells.



Further, they are used to manufacture computers.

## HUSK AS A FUEL

Husk is used as fuel in houses and industries.

## HUSK AS BRICK

The bricks made from husk and cement are light in weight and protect us from heat. Buildings built out of these bricks have low temperature radiation.



## MANURE FROM HUSK

The manure (vermicompost) is obtained when the earthworms are allowed to grow in the husk. This manure is very good for flowering plants.



## HUSK AS AIR PURIFIER

Activated carbon from the ash of husk is used to purify water. This will kill the germs causing diseases.

## GOLDEN RICE

This type of new rice has vitamin A. This improves the eye sight.



## OIL FROM RICE BRAN

Oil is extracted from the rice bran of the raw rice. It is suitable for cooking because this oil has vitamins and fats that prevent heart diseases. The by-products of this oil is used as food for fish and other animals.



## HAY AS FOOD FOR CATTLE

The by-product of the paddy is hay, a fodder for cattle.



Card boards are made from the paste of hay pulp.

## Do you know?



Methane gas released from the paddy fields pollutes the atmosphere and increases the temperature.



## STORY OF PAPER

Many centuries ago the Egyptians used a grass variety called Papyrus for writing. Palm leaves were used in our country. The Chinese were the first to invent paper.

## PAPER FROM BAMBOO

Papers are made from bamboo. It is easy to prepare. Grind the bamboo, add water and boil it to get the pulp. This pulp is passed on thin wire mesh to filter the water and is dried by pressing. Now the paper is ready.



- Do you know which plant purifies the air?



It is bamboo. Bamboo has the best purifying capacity in the world. It grows faster than other plants. Micro organisms and fungi cannot destroy bamboo plants.

### Activity



How are natural resources like rocks, water, minerals useful?

Rocks : Gravel—To make road

Water : \_\_\_\_\_

Minerals : \_\_\_\_\_

## PRODUCTION OF WASTAGES

Things that are not useful for us are called as waste.

What are the wastes present in the dustbin in your house.

### Activity



Write the wastes from places given in the table.

S.No.	Place	Waste
1.	House	
2.	Vegetable shop	
3.	Building construction site	
4.	Office/ school	
5.	Hospital	
6.	Automobile shop	
7.	Nearby industries	
8.	Marriage hall	
9.	Electric goods repair place	

Torn clothes, plastic, glassware, unused vessels, food, old medicinal bottles, broken electrical lamps, used cotton, syringe, syringe tubes, smoke, chemical waste, broken bricks, rubber tube, worn out tyres, torn leaves, smashed paper tumblers, rotten vegetables, lime stone pieces.

## TYPES OF WASTE

### Bio-Degradable Waste

Bury the vegetable wastes under the soil. See after a month. You can see that they are decomposed with the soil. Aren't they? These are called **bio-degradable waste**.

### Non Bio-Degradable Waste

Bury polyethene cover under the soil. After a month it will be in the same form. The things which are non decomposable are called **non bio-degradable waste**.

Project:



Collect tomato, brinjal, banana leaves, glass, flowers, plastics, iron pieces, ceramic, wood, cotton cloth, a piece of brick and small aluminum vessels. Put them in a pit and cover with sand. After few weeks dig the pit and see.

Note down what you have observed in the given table.

S.No.	Things not found in the pit (Bio-Degradable)	Things found in the pit (Non Bio-Degradable)
1.		
2.		
3.		
4.		
5.		
6.		

## TYPES OF WASTES AND THEIR SOURCES

- Rotten fruits, broken gravels from building construction, bricks are the **solid wastes**.
- Waste water from factories, gutter water wastages in liquid forms, are the **liquid wastes**.
- Smokes from vehicles, industries and poisonous gases are the **gaseous wastes**.



### Activity



List out the waste produced from house, vegetable shop, building construction, school, automobile shop, marriage hall, electrical shop and hospital.

Sl. No.	Solid Waste	Liquid Waste	Gaseous Waste
1.			
2.			
3.			
4.			
5.			



## RECYCLING

Have you ever seen a person who buys old paper and old things from your house?

List out the things taken by him.

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How are these things changed and reused?

Changing the used products into new useful products is called **recycling**.

You can make papers and products out of pulp made from the waste papers. By doing so, number of trees cut down can be reduced.

Iron, gold, silver, and copper could be melted and used again.

Things which are marked  can be recycled. These are the things which can undergo recycling.

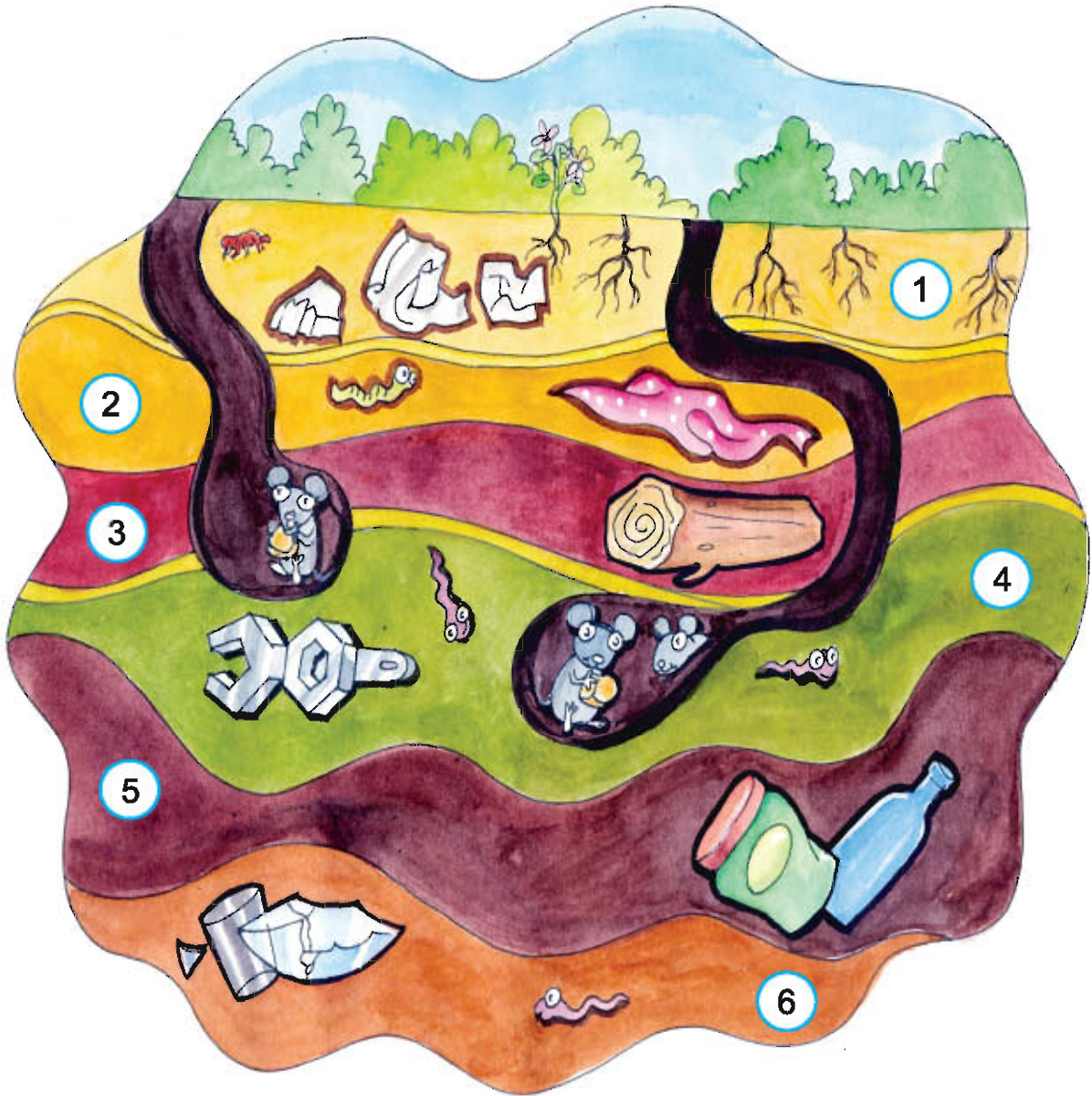
Things that are not marked with  cannot undergo recycling. They mostly will pollute the environment.



## Do you know?



Time taken by the things to undergo decomposition.



- |   |                |   |                     |
|---|----------------|---|---------------------|
| 1 | 2 to 5 weeks   | 4 | 50 to 500 years     |
| 2 | 2 to 5 months  | 5 | 50 to 10 lakh years |
| 3 | 10 to 15 years | 6 | uncountable years   |

## Evaluation



### (a) Fill in the blanks.

1. \_\_\_\_\_ is used as an important food.
2. \_\_\_\_\_ and \_\_\_\_\_ are the countries that use rice as food.
3. Outer covering of the paddy is called \_\_\_\_\_.
4. Oil got from rice bran is \_\_\_\_\_.
5. Wastes from broken bricks is \_\_\_\_\_.

### (b) Match the following.

- |                  |           |                          |
|------------------|-----------|--------------------------|
| 1. Paddy         | - Silicon | <input type="checkbox"/> |
| 2. Hay           | - Food    | <input type="checkbox"/> |
| 3. Rice bran oil | - Paper   | <input type="checkbox"/> |
| 4. Solar cell    | - Cooking | <input type="checkbox"/> |

### (c) Answer in detail.

1. Give two examples for each
  - a) Solid wastes
  - b) Liquid wastes
2. What are the uses of husk?
3. How is paper recycled?
4. What are the uses for silicon?
5. What are the advantages of growing bamboo trees?
6. Why should we use natural resources in limited quantity?

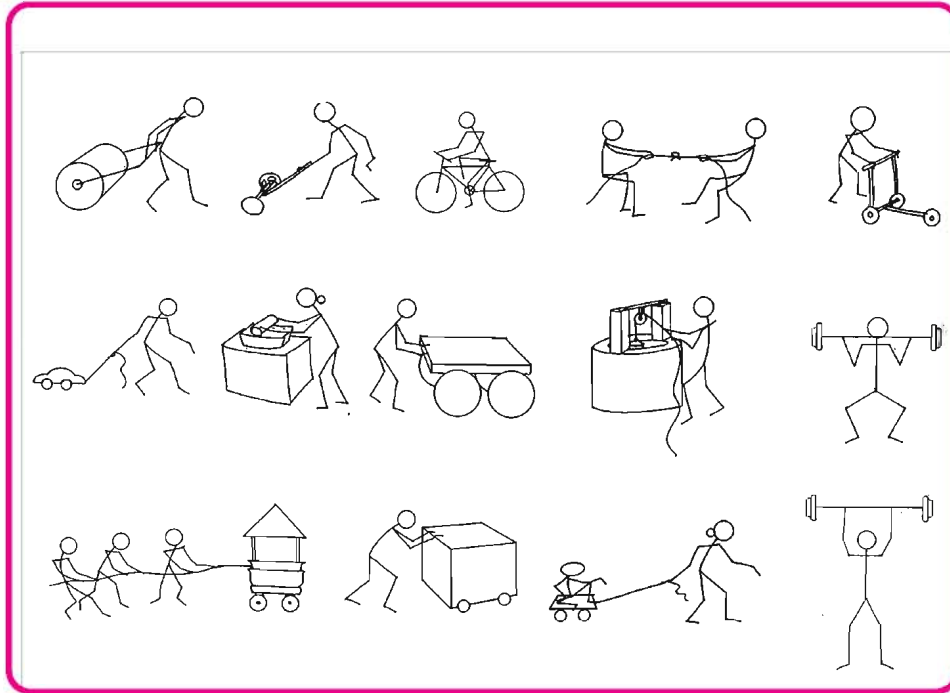
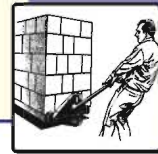
### Project:



Organize a group discussion to find ways and means to clear the bio-degradable and non bio-degradable wastes in your school.

# 11

## WORK AND ENERGY

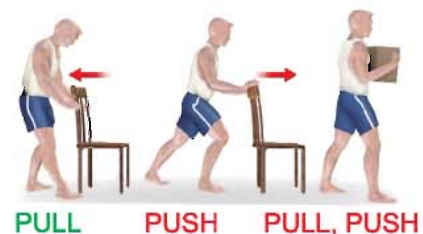


Observe the picture given above and list down the activities in the given table

PULL	PUSH	PULL, PUSH

### FORCE

Objects will not move from one place to another on their own. To move an object or to stop a moving object, a force is required. Depending upon the quantity of the **force** the object moves either faster or slower.



PULL PUSH PULL, PUSH



## WORK

**Work** is said to be done when force acts on a body and moves it in the direction of force.

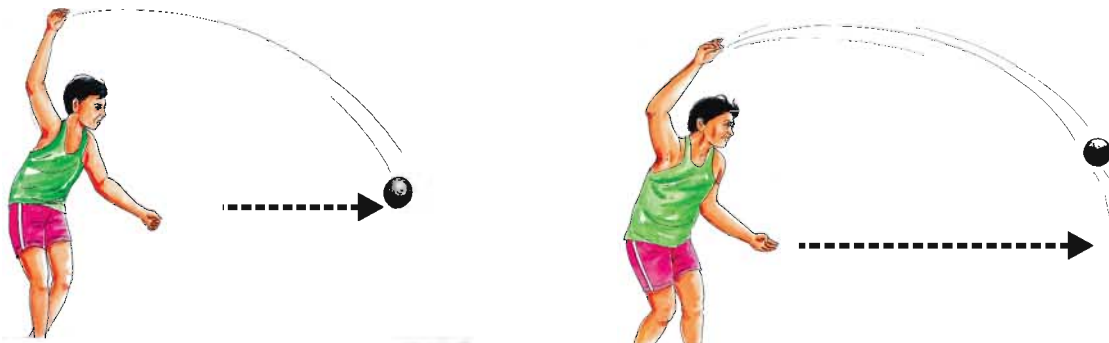
When an object moves to a distance due to a pull or a push, then it is said to be work done. If an object does not move by a push or a pull, then work **is not said to be done**.

Put tick  for work done and  for work not done to the given activities.

- |                                  |                          |
|----------------------------------|--------------------------|
| 1. Leaning on a wall             | <input type="checkbox"/> |
| 2. Lifting up the books          | <input type="checkbox"/> |
| 3. Fetching water from the well  | <input type="checkbox"/> |
| 4. Reading books                 | <input type="checkbox"/> |
| 5. Pushing the vehicle           | <input type="checkbox"/> |
| 6. Watching television programme | <input type="checkbox"/> |
| 7. Swimming                      | <input type="checkbox"/> |
| 8. Drawing                       | <input type="checkbox"/> |
| 9. Talking over the phone        | <input type="checkbox"/> |
| 10. Rowing boat                  | <input type="checkbox"/> |

## ENERGY

**Shotput competition**  
in the school.



Shotput competition was held in the school. Prabu and Arul took part in the game. Prabu threw the shotput. Since he used less energy, it fell at a shorter distance. Arul threw the shotput with more energy. The work done by him brought him victory. Hence

The capacity to do the work is called as **Energy**.

From where did Prabu and Arul get the energy? They got the **energy** from the food they ate.

We get energy from food.

From where did the running bus, steam engine, lorry get their energy?

Let us try to answer the questions.

Shall we listen to them

I get energy from  
Coal.



We get our energy from diesel.



We get our energy from Petrol



## TYPES OF ENERGY

### Heat Energy

Coal is used as fuel. The energy obtained by the combustion of coal is known as the **heat energy**. Its energy converts water into water vapour. The engine of a train functions due to energy of steam.



Write about the uses of heat energy.

---

### Electric energy

Electric energy is the main cause for the working of lights and fans in our houses. Electric energy is produced from **hydro electric plant, thermal power plant, atomic plant** and **wind mills**.



Write about the uses of electric energy.

---

### Hydro electric energy



During rainy season you can see stones, sand, things, plants, trees and animals are washed away by rain water. This shows **water also has energy**.

Water is stored in big drums and used to run the turbines to produce electricity

## Solar Energy

The energy received from the sun is called solar energy. **Solar water heater, solar stove, road lights, solar vehicles,** etc. work on solar energy. Name the places where solar energy is used.

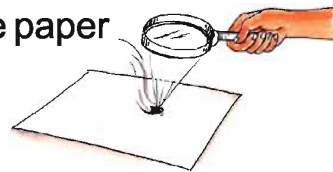
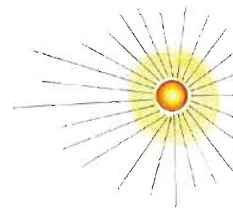


### Activity



### Smoke without fire

Take one thin sheet of paper and place it in direct sunlight. Hold a reading lens above the paper in such a way that more rays focus on it, without shaking. What happens after some time? The paper turns black and smoke comes out.



## Chemical Energy

We get energy from the food we eat. The energy present in the food is chemical energy.

## Mechanical Energy



Look at the toy merry-go-round in the picture. Does it rotate on its own? When we turn the key it rotates. It gets the energy from the turning of the key. This is called **mechanical energy**.

## MOTION

When an object change its position continuously called **motion**. When objects move in the straight path continuously, it is called as **linear motion**. When objects move in circular path continuously, this is called **circular motion**. If the motion is to and fro about a fixed point, it is called oscillatory motion.

Let us know about the type of motion for activities given below



Coconut falling from the coconut tree. It is said to be in **linear motion**. The movement of a seconds hand in a clock is said to be in **circular motion**. Movement of a simple pendulum is said to be an oscillatory motion.



### Evaluation

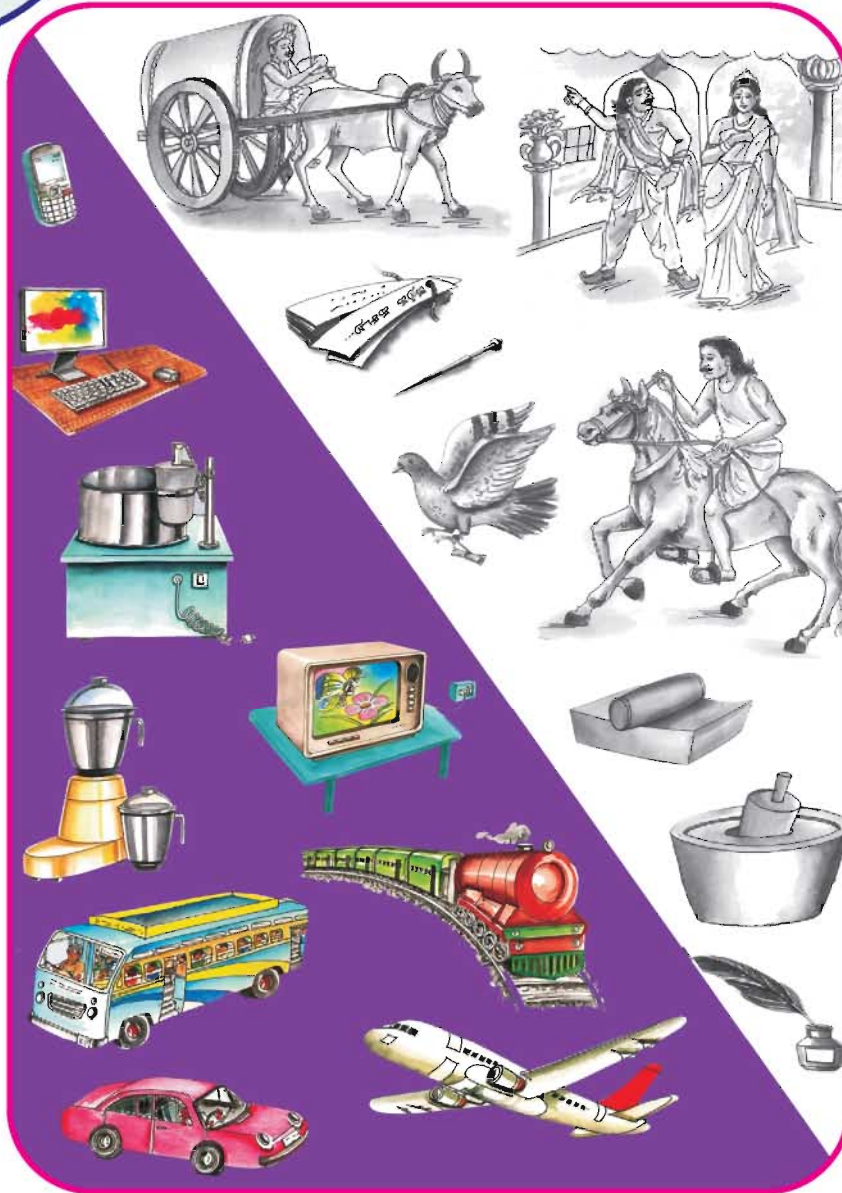


Answer the following.

1. Write about the incidents taking place in a Hospital which involves work?
2. What will you do to make a paper fan to rotate?
3. What are the different types of energy and explain any one?
4. What are the fuels used to light lamps?
5. What are the fuels used to run the vehicles?
6. Which type of energy is used for cooking food?
7. Name the instruments which work with the help of solar energy?
8. Write the object that works by means of mechanical energy?
9. List the objects moving in a linear motion that you see while coming from the school?
10. Name the objects that move in circular motion?

# 12

## SCIENCE IN DAILY LIFE



Compare the two pictures.

How have the objects in the black and white pictures changed now?

On what basis have these changes taken place?

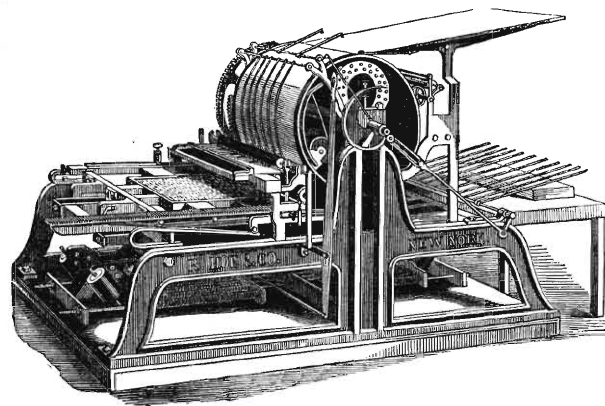
Do you know who invented the Television, the Telephone, Computer and Printing machine?

In ancient days man observed nature and reflected. As his thinking capacity grew science also developed. He questioned the changes that happens in nature as Why? What? How? and When?. These questions led to the new inventions.

The moment you close your eyes you can see a quite number of inventions.

How were they invented?

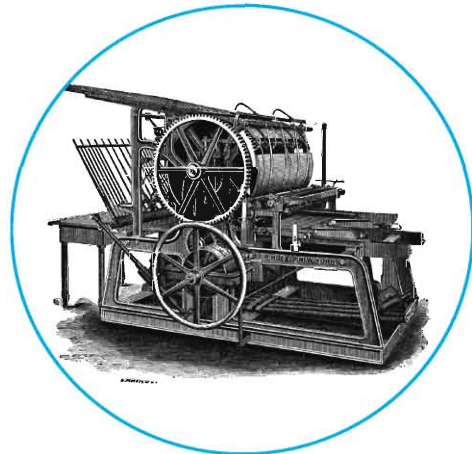
Scientists from their experience in life invented all these things. The printing machine is one among them.



## PRINTING MACHINE

Where have you seen manuscripts and stone sculptures?

Which machine is used to make the books, news papers and text books?

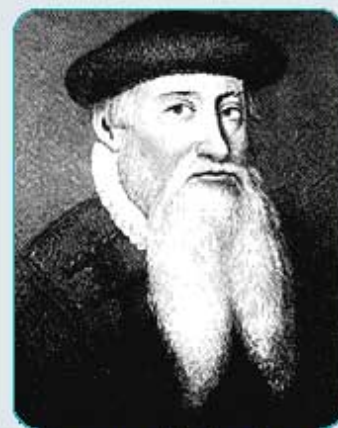


First, man wrote on sand and clay. Then he carved on the stones. Later he used sharp pointers to write on palm leaves. He had to use lot of time and effort. To make this work easier and faster a printing machine was required.

**Johane Guttenberg**, a German, invented the printer.

Today the printer has revolutionized the world.

**Johanne Guttenberg** was a goldsmith and a merchant. He lived in Main city in South Germany. He produced books out of the letters made of wood and metals in 1436. He is the inventor of the printing machine.



**Johanne Guttenberg**



### Activity



Find out the information about printing press which published your text book.

In which district in Tamilnadu is printing job carried out extensively?

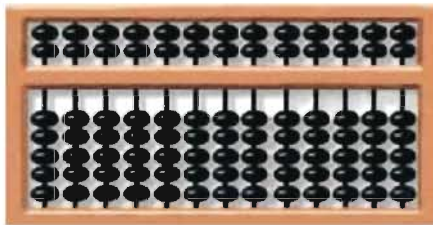


## COMPUTER

Man, right from his origin, used small stones, pebbles, small sticks, lines drawn on the wall, and his fingers to calculate. Then he formed numbers to calculate. Later he invented calculating devices operated by hand.

e.g. Abacus, Napier equipments, Pascal device, etc.,.

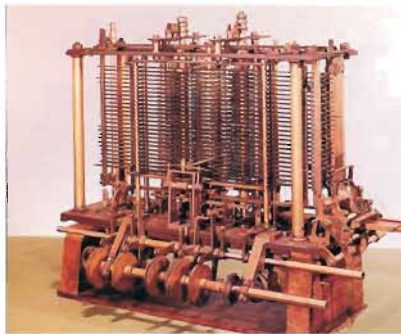
Charles Babbage invented Difference Machines in 1882. The principle of computer was already implemented in those days in this machine.



Abacus



Pascal device



Difference machines

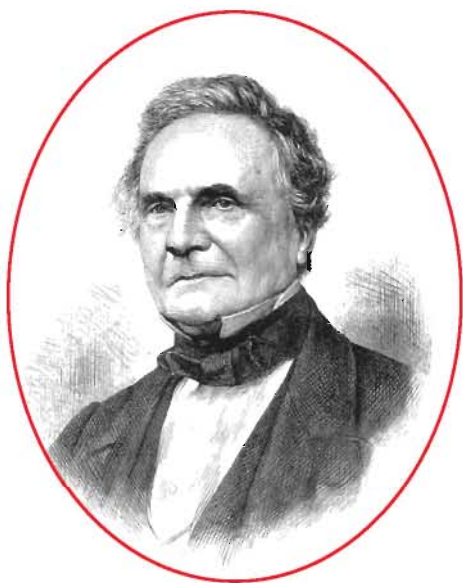


Napier equipments

He wanted the calculations to be error free, faster and the calculated values to be stored and retrieved when needed. As a result **computer** was invented by him.

Charles Babbage designed the computers. Where have you seen the computer being used?

Computers are used in Departments of Defence, Education, Police, Research and Development, Health, Commerce, Communications, etc., Computer is very much used in all the fields throughout the world.



Charles Babbage

Charles Babbage was born in London in England in the year 1791. He did his higher studies in the Cambridge University in England. He was very much interested in Mathematics. He invented a device to calculate at a faster rate. This was the first computer. Apart from computer, he also invented speedometer and eye testing equipment.

The computer invented by him is very big in size. It can be found in London Science Museum even today.



First Computer designed by Charles Babbage

In what way is computer useful in your school?



Latest Computer

## TELEPHONE

How will you send a message to your friend from Kanyakumari District to Trichy? Telephone has become very essential for long distance communication. Do you know how the telephone was invented?



Alexander  
Graham Bell



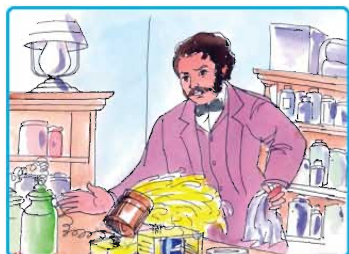
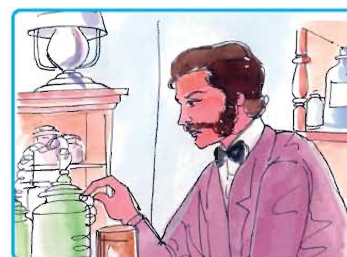
Alexander Graham Bell was born in Edenberg city at Scotland in the year 1847. His mother was deaf. His father was a teacher for the deaf. Graham Bell had his elementary education only for 5 years.

He worked as a teacher for deaf children. While he was teaching he started his research. Once he tried to send some messages at a time through a wire. This did not succeed. However he continued his research. As a result he succeeded in sending human voice through wire in 1876. The telephone was invented. His friend Watson helped him in his research. Do you know what was the first message spoken by Graham Bell in his telephone?

He said "Watson, come here. I want to see you".

## Do you know how the telephone was invented?

Graham Bell was working with sound carrying equipment in his Research Laboratory at Boston in America.



Accidentally acid from the equipment fell on his dress.

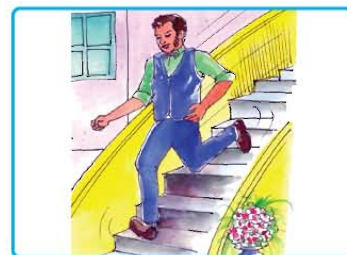
Immediately he called his assistant "Watson."



"Watson. please come here."

Watson who was working in a room in the first floor was shocked to hear Graham Bell's Voice through the equipment.

He immediately ran to the ground floor.



He entered Graham Bell's room and shouted. "The equipment is working".

This is how the telephone was invented.

## SCIENTIFIC QUESTIONS

One day **Sir Issac newton** saw an apple falling down from a tree. At that time, he thought why the apple did not go up. That is how he was able to discover about the gravitational force.

The question such as **Why**, **When** and **How** are called scientific questions.



- Do you know why the hind leg of frog is **long**?
- **Why** does magnet attract only iron?
- **How** are bees attracted towards flowers?

**Observe the pictures. How many questions can you form out of these? List them.**



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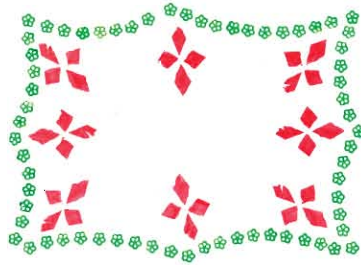
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## Activity



Carve your name on a potato or carrot and apply ink and press it on a paper. Cut a lady's finger and apply ink on that and prepare greeting cards.



## Evaluation



Answer in one or two words.

1. Who designed the printing press first? Which is his native land?
2. In what type of letters did Johanne Gutterberg write his book?
3. Write any three uses of the printing press.
4. Write any two equipments used to calculate with hands.
5. Name the equipment designed by Charles Babbage.
6. Which country did Charles Babbage belong to? In which University did he do his higher studies?
7. Write any two purposes for which computer is used in your school.
8. When was the telephone invented?
9. Name Graham Bell's friend who helped him in his research.
10. What do you mean by scientific question?

# 13

## VISIT TO FARM

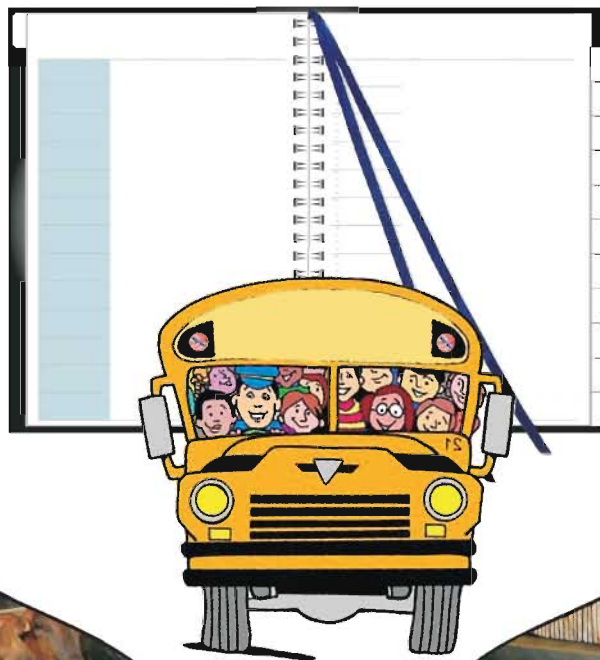


Mary and Bharathi were to be very excited. The reason was that they had planned to visit the agricultural farm on an educational tour.

There were only 2 more days to go. Teachers had given some instructions regarding the visit.

Next day Mary had fever. Doctor had advised her to take rest for two days.

So Mary said to Bharathi “You note down in your diary all that you see in the tour and read out to me and share your experience after coming back.”





My diary

Date:

Today.....

A happy day of new experience in my life.

We 39 students were ready at 8.00 a.m. for the tour. As soon as the bus arrived we got into the bus one by one. Our tour started towards Anaimalai. After one hour journey we reached Muthu's Agricultural farm. Mr. Muthu invited us heartily.

The farm was a beautiful sight. Green fields, tall trees, bushes, plants and vines seemed to go on and on.

There were a lot of coconut trees and banana trees. Some workers were gathering tomato, brinjal and lady's finger in baskets. There was good fragrance from the Jasmine garden. Some were plucking the jasmine buds. Paddy was planted in a large area and the whole area looked green. It looked very pleasant to see the paddy swaying in the breeze. We all walked on the field path one after the other. Crabs scampered hurriedly away from us.

A rat ran and hid itself.





Some were plucking coconuts from the coconut trees. Some were peeling the coir from coconuts.

Mr. Muthu asked them to give us tender coconuts. We all drank the tender coconut water and quenched our thirst.

Suddenly some of the students started shouting. There were some monkeys were jumping from the near by trees. Students took sticks to chase the monkeys.

Mr.Muthu came running and shouted “Don't chase the monkeys”. Mr.Muthu, added gently, “**Do not scare the animals which are living around us**”, which I liked very much.

On seeing him some dogs came to him wagging their tails. We were frightened and thought of running away.

But he said, “Do not run and don't be afraid. They will not harm us if let them be . These are night guards for my farm.”

In which vehicle did Bharathi go for the tour?

---

What are the plants seen in Muthu's farm?

---

What will you do when someone torture animals?

---

He invited us to his banana groove.

There were bunches of bananas cut from the banana tree and arranged in order.



As it was time for lunch, we went to a shady place where there were lot of trees. We sat in groups and ate our food. After eating they started throwing leaves and papers everywhere.

Teacher noticed that and said “Dear students, we have to keep our surroundings clean. See, there is a dust bin. Put them in that.” Only then we noticed the dust bin and also that the farm was very clean.

After lunch some people were loading rice bags into vehicles. Some were carrying the hay on their heads.

We asked them where they were carrying the hay.

They replied that they were going to the nearby cattle field. We also went behind them. In the cattle farm, cows and the calves were tied in neat rows.



There were cows, calves, ox, **murrah** type buffaloes and goats in the cattle farm. We wondered seeing cows of different types like **Gir, Sindhi, Jersey and Caronswiss**.

Do you know?



India stands first in milk production.



**murrah**



**sindhi**

The worker at the cattle farm said “Jersey cows give around 25 to 30 litres of milk. If we give required quantity of hay, grass, cotton seeds, cake fodder, we will get more milk. Murrah type of buffalo alone gives 30 litres of milk.”

“Is it so?”, We were all surprised to hear it.

1) What types of cows are seen in the cattle farm?

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2) How many litres of milk a Jersey cow can give?

---

3) What feed should be given to the cow to get more milk?

---

4) How many litres of milk are required in your house per day?

---

We visited the nearby poultry. Some hens were pecking at the food. Rice, broken rice and rice bran are given as food for poultry. There were hundreds of hens there.

Do you know?



- \* Sharp edge of an egg should point downward in a refrigerator.
- \* Now Emu is grown in Government animal husbandry farms. Emu hen's meat is 98% fat free.



Hens seen in white colour are called white leghorns. White leghorns lay around 200 eggs in a year. They are the egg laying hens.

Tamilnadu Government is supplying eggs for 5 days along with their mid-day meals in a week to the school children.

On another side we saw broiler hens. They are used for getting meat. They are called broilers.

- 1) White Leghorns may lay approximately \_\_\_\_\_ eggs per year.
- 2) Hens reared for meat are \_\_\_\_\_.

It was around, 3 'o' clock in the evening. We all sat in groups under the tree, In each group fruits like banana, papaya, apple, grapes and pineapple which we had brought, were cleaned and cut into small pieces and taken in a vessel. Then some sugar was added and mixed thoroughly. We all enjoyed the delicious fruit salad.



**When we were returning from the farm in the evening** some people collected cow dung, branches and leaves, vegetables, wastes and put them into a pit. We peeped inside the tank and saw some worms.

They are preparing manure by adding waste, cow dung, earthworm and soil. If we use them for the plants, we will get better yield of cereals, vegetables and fruits. They did not waste even the waste. This activity attracted me a lot.

We thanked Mr.Muthu for allowing us to visit the farm and also for his valuable advice.

On the way back some people were distributing pamphlets. It was printed as follows.

✍ Do not beat the animals with stones, sticks or whip.

✍ Do not overload the animals or the vehicles pulled by these animals.

✍ Do not burst crackers near the animals.

✍ While going to sanctuaries, animal parks, bird sanctuaries, etc., do not feed the animals with what we have.

✍ Do not throw plastic materials in such places.



**Do not harm the animals!**



**Do you know?**



Blue cross does the service of helping and saving animals.

When we were coming out with the pamphlets, we saw a wall poster.  
In that...

**Let us save our environment!**

- \* Keep the public places such as parks, sanctuaries, hospitals, bus stand, railway stations, schools, etc., clean.
- \* Do not throw wastes in public places.
- \* Throw the waste into dust bin and see that it does not spill out.
- \* Do not spit in public places.
- \* Do not smoke in public places.
- \* Plant trees to protect the environment.



**Activity**



Write your answers for the questions asked about your pets.

1. Which is your pet animal?
2. What is the name of your pet?
3. What does it like to eat?
4. When does it go to sleep?
5. What are the qualities you like in it?
6. Draw your pet animal and colour it.

Bus came to school at 6 pm in the evening. All returned home. Bharathi had noted down her experiences in a diary.

She shared that with her friend Mary. Mary was also happy and thanked Bharathi.

When you go to a rabbit farm as a field trip, list out the questions that are to be asked.

- 1) What are the types of rabbits grown in a rabbit farm?
- 2) What are the methods to be followed for rearing the rabbit?
- 3) Write about the temperature needed for the growth of rabbit?
- 4) Write about the measurement of the rabbit's cage.
- 5) How many rabbits can be grown in a cage?
- 6) What are the foods to be given to the rabbit?
- 7) What is the approximate weight of an adult rabbit?
- 8) In general, how many young ones a rabbit can give birth at a time?
- 9) Name the diseases that affect rabbit.
- 10) How you will clean the rabbit farm?

For a field trip when you visit a cattle farm, list out the questions that are to be asked.

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## Evaluation



### (a) Fill in the blanks.

1. In the farm \_\_\_\_\_ and \_\_\_\_\_ are the plants seen in the garden.
2. \_\_\_\_\_ and \_\_\_\_\_ are the types of cows seen in the farm.
3. Murrah type buffalo gives \_\_\_\_\_ of milk .
4. \_\_\_\_\_ and \_\_\_\_\_ are mixed together to form natural manure.
5. Don't throw \_\_\_\_\_ in the public places.

### (b) Answer the following.

1. Write down the names of the trees seen in the agricultural farms.
2. Mention some milk products.
3. Which type of buffalo will give us more milk? How many litres of milk can it give?
4. List the food products that we get from Agricultural Farms.
5. Write about the farms seen in your place.

### (c) Answer in detail.

Visit an agricultural farm and write about your experience.