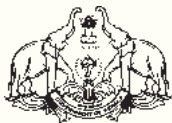


ENVIRONMENTAL SCIENCE

Part - 2

Standard IV



**Government of Kerala
Department of Education**

**State Council of Educational Research and Training (SCERT),
KERALA
2015**

THE NATIONAL ANTHEM

Jana-gana-mana adhinayaka, jaya he
Bharatha-bhagya-vidhata.
Punjab-Sindh-Gujarat-Maratha
Dravida-Utkala-Banga
Vindhya-Himachala-Yamuna-Ganga
Uchchala-Jaladhi-taranga
Tava subha name jage,
Tava subha asisa mage,
Gahe tava jaya gatha.
Jana-gana-mangala-dayaka jaya he
Bharatha-bhagya-vidhata.
Jaya he, jaya he, jaya he,
Jaya jaya jaya, jaya he!

PLEDGE

India is my country. All Indians are my brothers and sisters.

I love my country, and I am proud of its rich and varied heritage. I shall always strive to be worthy of it.

I shall give respect to my parents, teachers and all elders and treat everyone with courtesy.

I pledge my devotion to my country and my people. In their well-being and prosperity alone lies my happiness.

State Council of Educational Research and Training (SCERT)

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Dear children,

Let us embark on a journey...

*On the way, tiny and big plants, birds,
the stone and soil, telling stories.*

*The sky sketching the rainbow,
The charm of the moonlight.*

How many things around us!

Nature is, indeed, a great book of wonders.

To sip the honey of this knowledge...

Here, you have this book, as your friend.

Holding hands come along....

Regards,

Dr. S. Raveendran Nair

Director, SCERT Kerala



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Contents

As stone... as wind... 71

Reading and drawing maps 85

Through India 97

Very Far, a little Far 107

Care for friends 117

Know Your Land 128

**Certain icons are used in this
textbook for convenience**



For further reading
(*Evaluation not required*)



Significant learning outcomes



Let us assess



Extended activities

As stone... as wind...

Amal and his friends are watering the school garden. Amal immersed a big cup into a bucket full of water. The water spilled over.

Shreya : What is this? Don't you know that we should not waste even a drop of water?

Amal : I didn't waste water. The water overflowed when I dipped the cup.

Shreya : Is it so? Why does water spill over like this? Let us find out.

Amal, Subin and Shreya are now going to conduct the experiment. They have taken a bucket full of water, a brick, a stone, a piece of wood and an iron piece. Leena comes there at that time. She asked eagerly, "What are you all going to do?"



Subin: We are dropping each of these objects into the water in the bucket. When we drop any object into a container full of water the water spills over.

Amal : Lina, can you guess which of these objects, when immersed, will make the maximum overflow of water?

Now, can you make a guess?

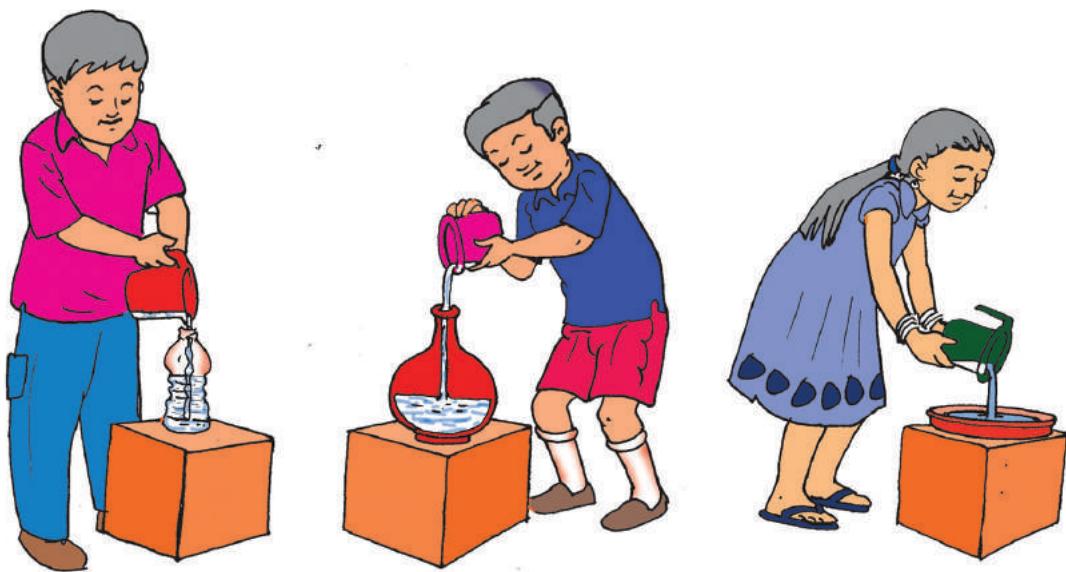
Do the following experiment and note down your findings.

All objects occupy space.

What about objects of greater size?

Objects with definite shape and those without shape

Take water in a glass tumbler. What is the shape of water now? Now, pour this water into vessels of different shape.



Is there any change in the shape of water? What is the reason for this?

Water does not have a definite shape. It takes the shape of the vessel in which it is contained.

But, what about a stone?

You know that we can pour water into a bottle.

But can you put a stone which is bigger than the mouth of a bottle, into that bottle?

What do you understand from this?

Stone has shape and size.

Measuring weight

Weigh your school bag.

Measure the weight of your water bottle before and after filling it with water. What difference did you notice?

What do you understand from this?

All objects have weight.

Now, find the weight of water in the bucket and the pot in the same way.

Sakthiman

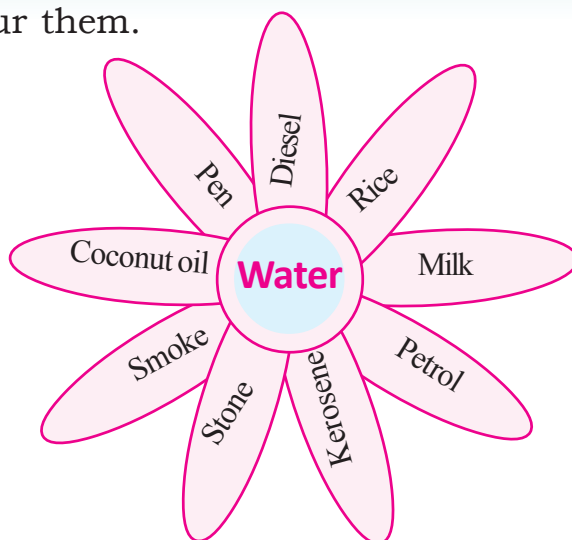
Look at the picture.

What makes the water-wheel turn around?



Flowing water has power.

Observe the picture. Which among the following can flow like water? Colour them.



Water and friends similar to it are liquids.

Now, find out other liquids and write down their common properties.

Changing state

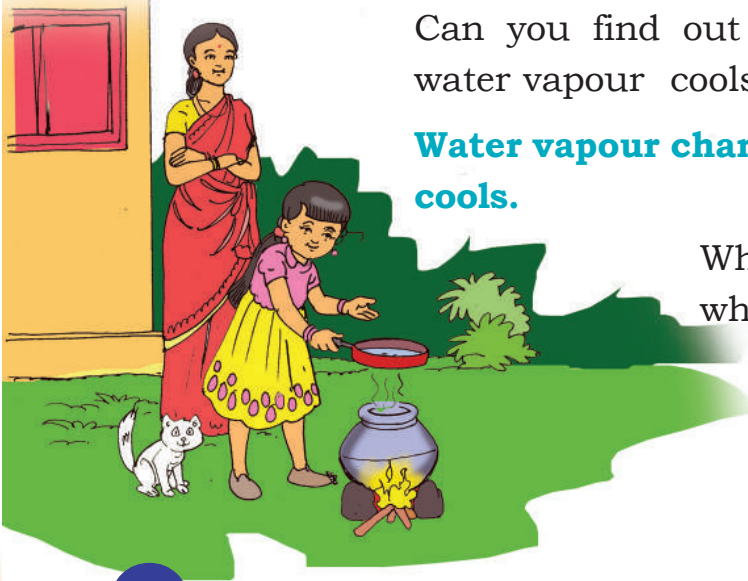
Take some water in a vessel and heat it. Don't you see water vapour rising up? Now take a flat vessel with water in it and hold it over the rising water vapour.

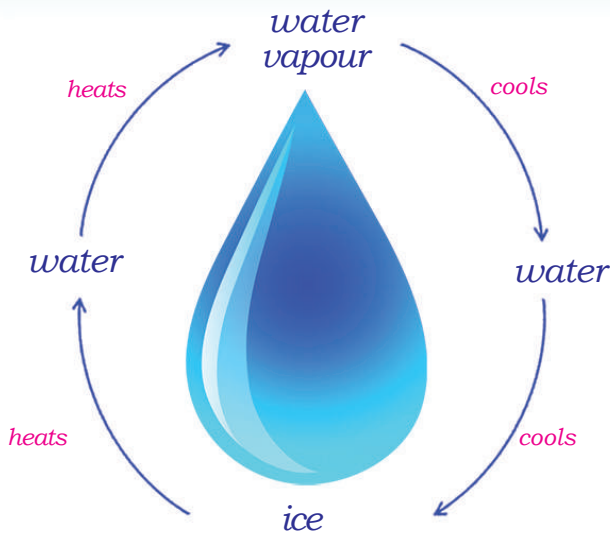
What do you see at the base of the vessel? What is the reason for this?

Can you find out other instances where water vapour cools into water like this?

Water vapour changes into water when it cools.

What will happen to water, when it is cooled further?





Water in air too!

Take a glass tumbler. Put some ice pieces into it. Observe the outer side of the glass. What do you see? From where did the drops of water come? There was only air around the glass tumbler. If so, how did the water drops form?



The water vapour cools to form water.

Friends of stone

We learned that a stone has definite shape, size and weight. Liquids can be taken only in a vessel. But what about stone, a piece of wood etc.?

What is the difference between water and a stone?

Stone, piece of wood etc., are solids.

Can you name some other solids? Write down the common properties of solids.

What are the properties that differentiate solids from liquids?
What similarities do they have?

Write down the similarities and differences.

Solids	Liquids
_____	flow
have weight	_____
_____	_____

Features of air

Subin is very happy today. He is waiting to show the balloon boat that he made to his friends.

Wow.. a balloon boat that moves in water! His friends became happy.

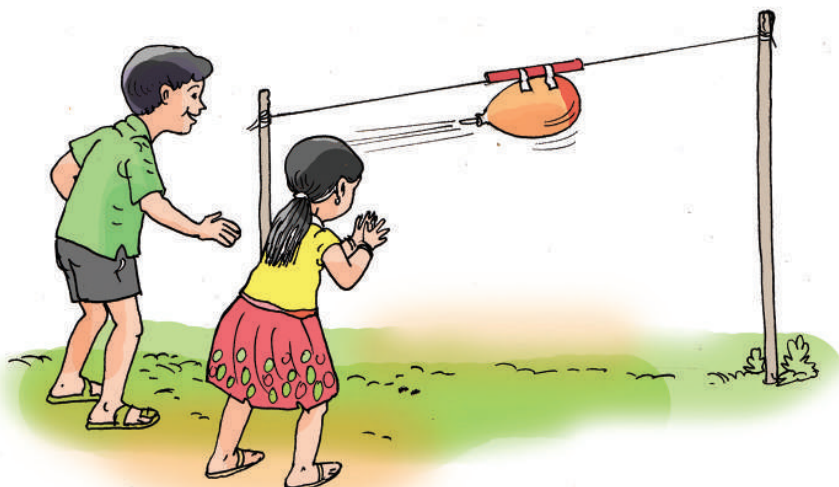


Amal : Subin, how did you make this?

Subin : Take the lid of a soap case. Make a hole on one of its sides. Now take a straw and tie a balloon to its end. Take the other end of the straw out through the soap case hole as shown in the picture. Now blow air through the straw and fill the balloon with air. Press the mouth of the balloon with fingers, not letting the air to go out. Place the soap case in a flat container with water. Immerse the tip of the straw in water and slowly release the fingers. Now you can see the balloon boat leaping ahead.



Lina: I shall show you another trick. Here is a balloon rocket.
Do you want to know how it is made?



Pass a long thread through a straw piece. Tie both ends of the thread tightly to two poles as shown in the picture. Blow air into a big balloon and fix its middle part to the straw using cellotape. Bring the balloon to the lower end of the thread and release it. In which direction does the balloon move? Why?

*Friends...
Won't you also
make a balloon
boat and a rocket?*

Many shapes

Take balloon dolls of different size and shape. Blow air into them. Then release the air. What happens? Why does this happen?



- What changes did you observe when air is filled in balloons of different shape?
- Does air have a definite shape?

Note down your findings in the environment diary.

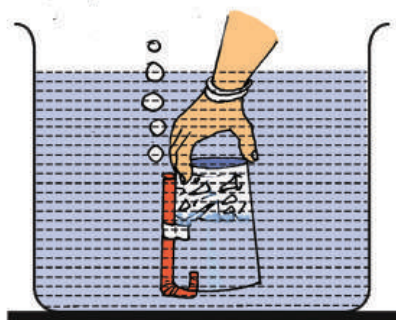
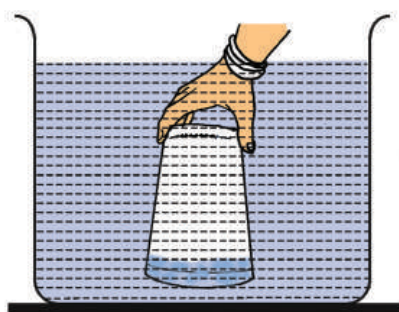
Who is hiding there?

Take two glass tumblers. Pack paper bits upto half of each tumbler. Fix a flexible straw in the second glass tumbler using a cellotape. Now immerse both the glass tumblers upside down in the water in a bucket.

- What goes out from the second glass tumbler?

Now examine the paper in both the glass tumblers.

Prepare the record of the experiment.



Lina's record of experiment

Wet and dry

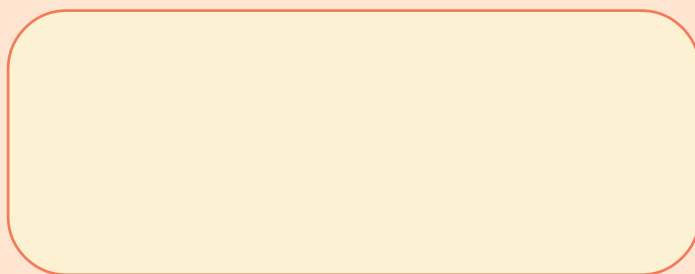
Aim : To find out whether air occupies space.

Materials : Bucket full of water, two glass tumblers, flexible straw, paper, cellotape

Procedure : Filled three fourth of a bucket with water. Packed paper upto half of each glass tumbler. The flexible straw was fixed to the second glass tumbler in such a way that the shorter part of the straw is inside the glass tumbler. Both the tumblers were immersed upside down into the water in the bucket.

Observation: While immersing the two glass tumblers into the water, more force had to be applied on the glass tumbler without straw attached to it. Only a little water entered the glass tumbler. Air bubbles could be seen passing out through the straw in the other glass tumbler. Hence more water entered that glass tumbler. When the paper in the first glass tumbler was taken out, it was not seen wet. The paper in the second glass tumbler was wet.

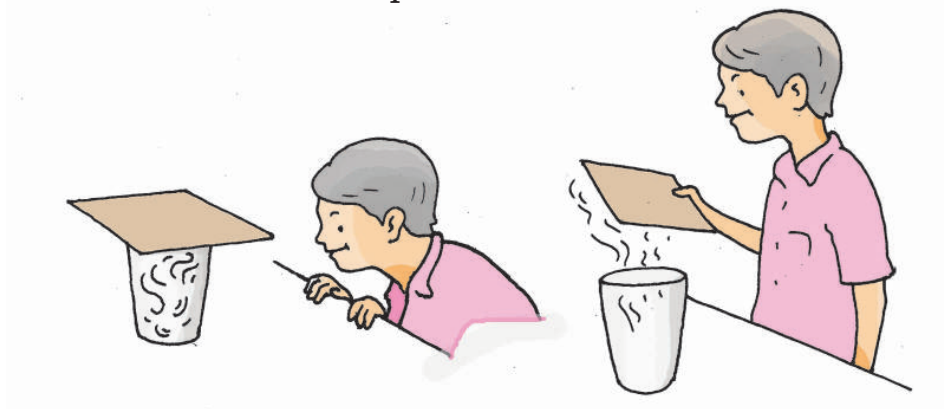
Inference :



Did you record your inference?

Sensing the smell

We come to know that jasmine flowers have bloomed or a perfume bottle has been opened even from a distance.



How does this happen? Let's try out.

Collect the smoke of an incense stick in a glass tumbler and cover it with a cardboard.

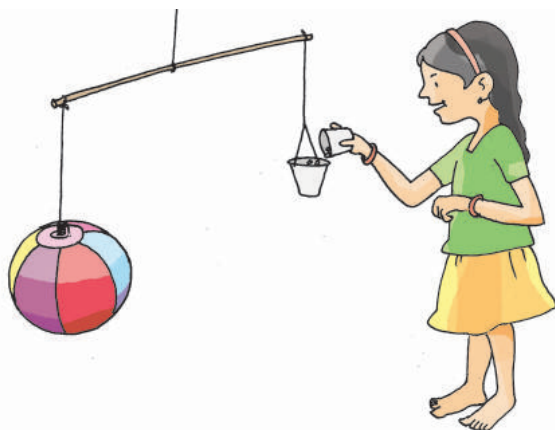
The smoke comes up when the cardboard is removed.

Do you sense the fragrance of the incense stick?

This is because the fragrance of the incense stick mixes with air and spreads all around.

I too have weight...

Hang a big balloon on one end and a paper cup on the other end of a long stick. Now, tie a thread in the middle of this stick and hang it like a balance, as shown in the picture.



Put pea seeds in the paper cup to balance the weight.

Now blow air into the balloon. What happens to the balance?
Why? How many pea seeds did you put in the cup to balance the weight?

Write down your findings in the environment diary.

Power of the wind

Did you see the *kattadi* in Shreya's hand?

Why does it spin?

Discuss with your friends.

Moving air is wind.

Air has power.



Windmill field



Yacht

Air, water vapour etc., are gases.

What are the properties of gases?

Write them down.

- Gases do not have a definite shape.
-

Plasma



Besides the solid, liquid and gaseous states, matter has other states also. Plasma is one of them. Fire and lightning are in the plasma state.

Complete the table

Objects	Properties			State
	Weight	Shape	Space to exist	
Coconut oil	✓	X	✓	Liquid
Table		✓	✓	Solid
Air	✓			Gas
Water vapour				
Milk				
Ice				

Analyse the table and write your inferences.

Objects around us exist commonly in three states, namely solids, liquids and gases.



Significant learning outcomes

The learner

- states the common properties of solids.
- identifies and states the properties of liquids.
- identifies and states the properties of gases.
- identifies and states that water has three states.
- explains the change of states of water through simple experiments.
- proves the properties of solids, liquids and gases through simple experiments.
- consolidates and states the common properties of objects around us.



Let us assess

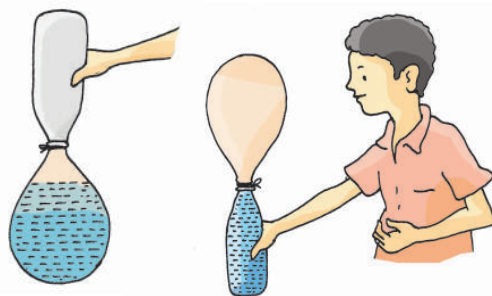
- Classify the following objects.
water, petrol, sugar, camphor, salt, piece of wood, water vapour, smoke, diesel, coconut oil.
- An object has a definite shape. It occupies space and has weight. Identify the state of this object?
A. gas B. liquid C. solid
- Identify the group which indicates the three states of water.
A. milk, buttermilk, curd
B. hot water, cold water, gruel (*kanjivellam*)
C. water, ice, water vapour
D. ice cream, tea, juice



Extended activities

1. Balloon that does not shrink

Fix a water filled balloon in a bottle as shown in the picture. What will happen if this bottle is held erect? Will the balloon shrink?

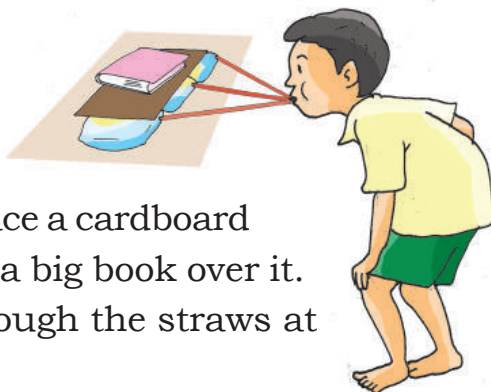


What will happen to the water in the balloon?

2. Lifting weight

Take milk covers, straws, thread and a piece of cardboard.

Insert a straw into each milk cover and tie it with a thread. Place a cardboard piece over the covers and place a big book over it. Now blow air into the cover through the straws at the same time.



How much weight can be lifted in this way?

3. Let us lift more weight

An 'air jack' can be made using a plastic tube and a hot water bag. A football bladder, air ball, balloon also can be used instead of the hot water bag.



4. Artificial rain

Make some holes at the base of a plastic bottle. Put one hole at the top too. Fill water in the bottle. What happens when the hole at the top is kept closed and what happens when it is opened?

Why does this happen?



5. Let us whistle and blow a balloon

Take two bottles with their base cut off. Fix a balloon in one and a doll whistle in the second. Immerse them in water.

Why did the balloon blow up?

Why did the whistle produce sound?



6. Visit a hydroelectric power station and a windmill field.

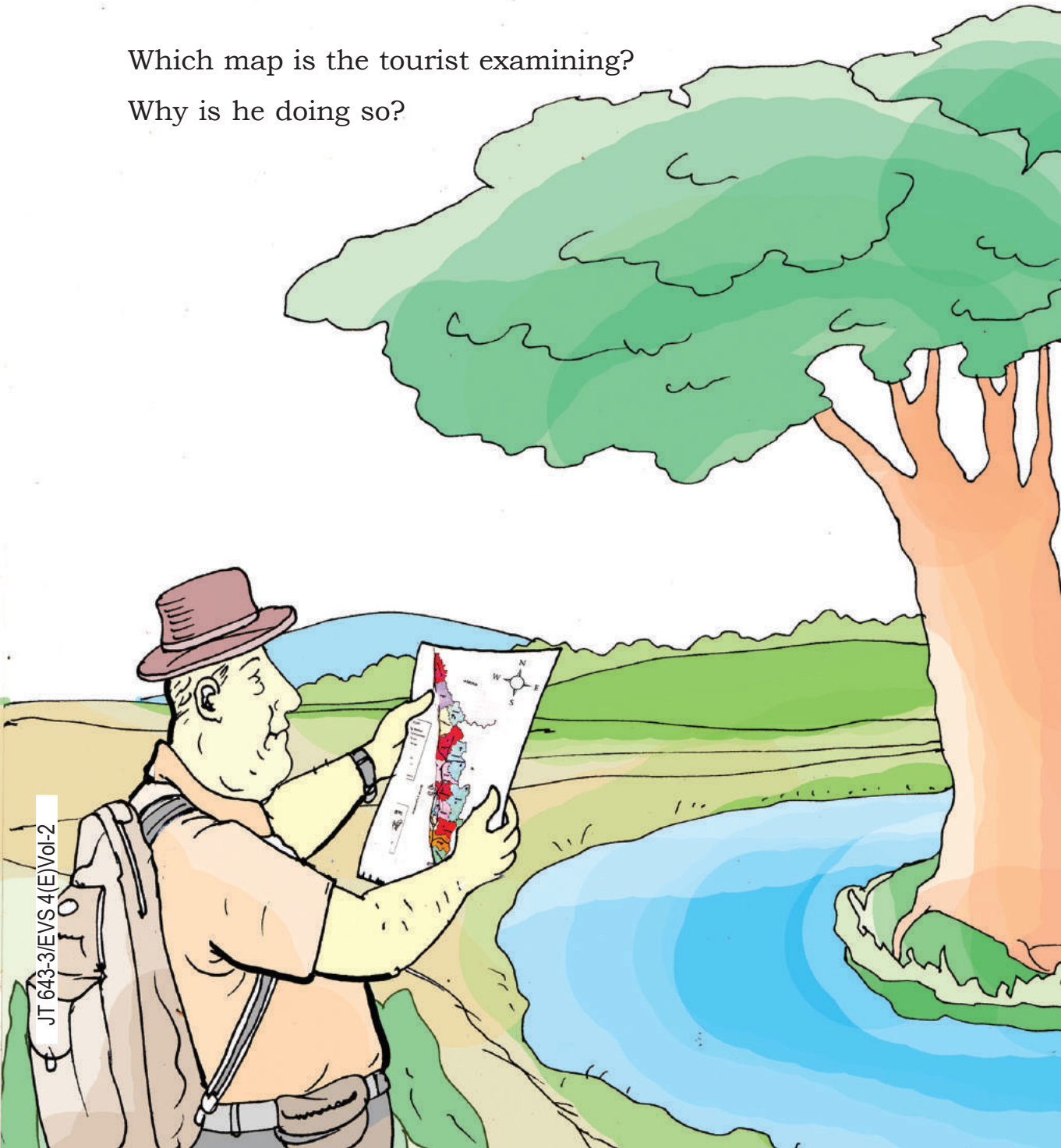
7. Make a water wheel, 'kattadi' etc.

8

Reading and drawing maps

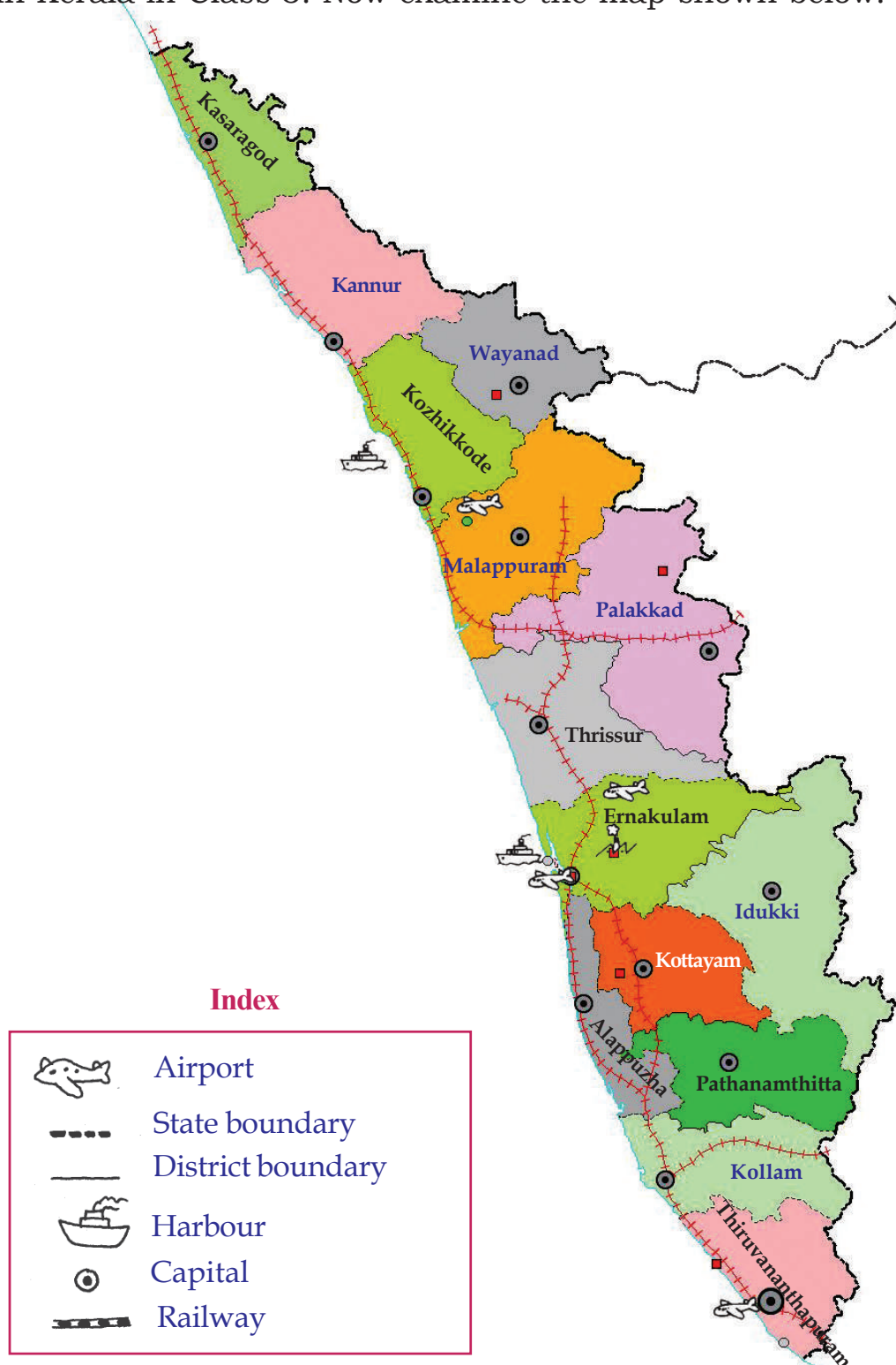
Which map is the tourist examining?

Why is he doing so?



Let us read a map

You learned about the different districts and important places in Kerala in Class 3. Now examine the map shown below.











What information did you find out? Now prepare a note on Kerala including the information you collected.

Index in maps

Roads, railways, rivers, airports etc., are represented in a map using generally accepted symbols and colours. The index tells us what each colour and symbol in the map represents. Some of the symbols used in the map are shown below.

Symbols

	Railway
	Airport
	Harbour
	River
	Tourist spot
	Capital
	District headquarters
	Bird sanctuary

With the help of your teacher collect information on the important rivers, tourist's spots, bird sanctuaries and wild life sanctuaries of Kerala.

Now mark this information in the map of Kerala using appropriate symbols.

Sketching the classroom

Children decided to draw the sketch of their classroom. Four of them stood at the four sides of a table. Placing a paper on the table, they started sketching.

“Write your names at the top of the paper. Also mark the right

side, left side, top and bottom,” reminded Abhi. At that time teacher came there and said “Don’t forget to draw the door, windows, benches, table and the blackboard of the class.”



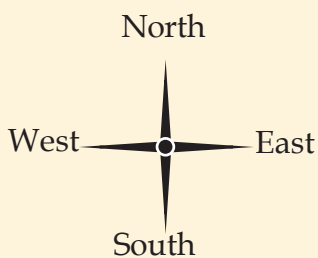
When they finished the sketch, they proudly showed it to the whole class.

The other children were surprised.

Four different sketches of the same class! Why were the sketches different?

Can't everyone draw the sketch of the classroom in the same way?

What are the things to be considered for this?

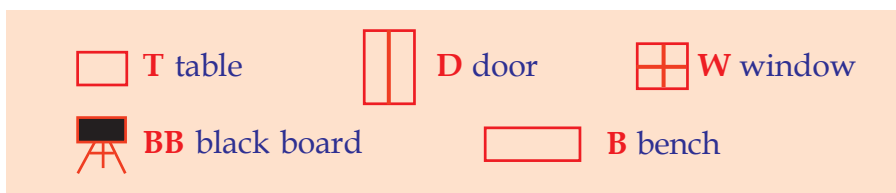


The top of the map on the wall indicates North. This symbol is used to show the directions. With the help of this symbol we can find out the other directions also.

Which is the northern part of your classroom?

You should draw the sketch in such a way that the northern part should be at the top of the paper. Now mark the south, east and west correctly.

Draw the sketches using the following symbols.



Paste the sketches on the wall. Do all pictures look alike?

Finding out the directions

We try to know the directions easily by looking at the sun.



Observe the picture. How does Leena find out the directions by looking at the rising sun?

- To which direction is Leena facing?
- Which direction is indicated by Leena's right hand?
- Which direction does her shadow fall?

How can we know the directions when the sun is not seen?

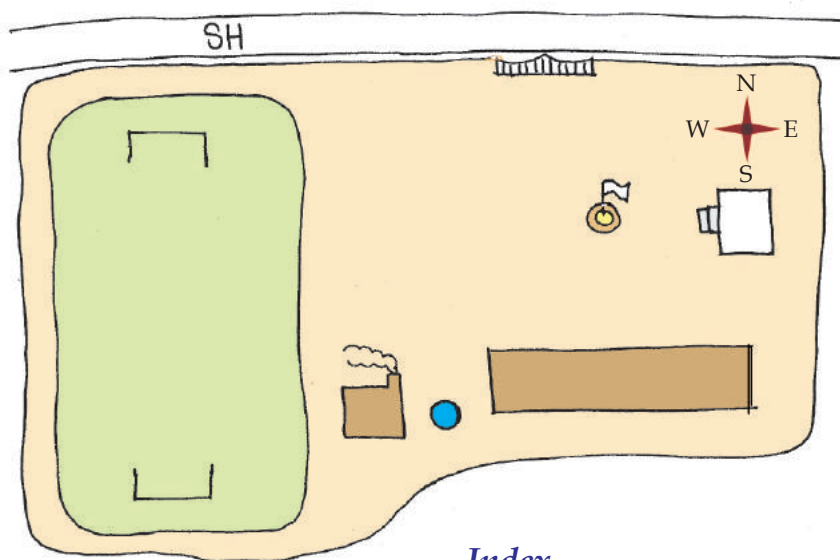


The Mariner's Compass







The Mariner's Compass is an instrument used to find out directions. There is a magnetic needle at the centre of this instrument. This needle always points in the north-south direction. The specially marked end of the needle indicates north. We can mark the four directions keeping the Mariner's Compass at the centre of the classroom.



Sketch of a school



Index

	State Highway		Cooking shed
	Stage		School building
	Flag post		Well

This is the sketch of Nandana's school.

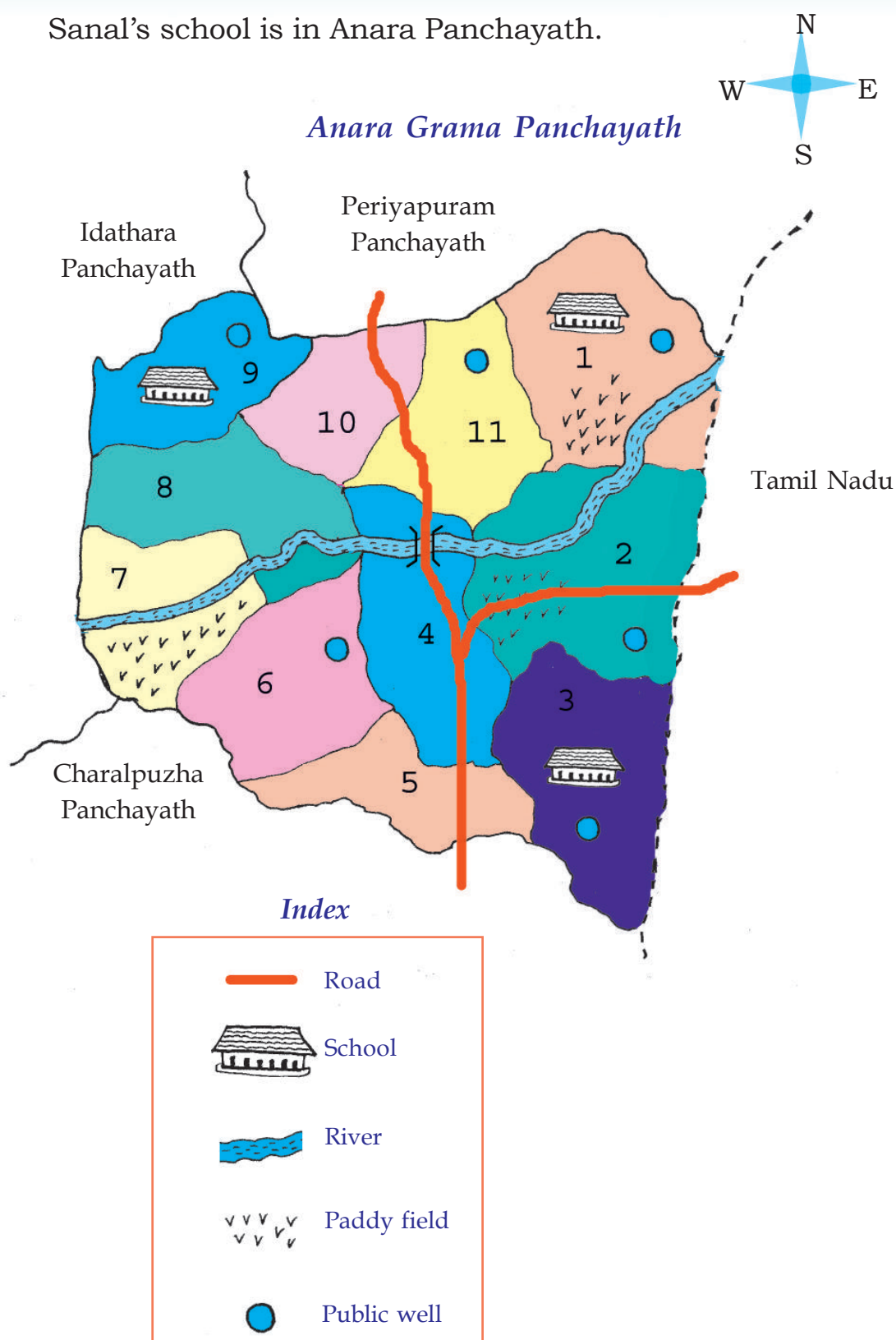
Find out the following from the sketch.

- On which direction of the school is the state highway?
- On which direction of the cooking shed is the well?
- On which direction of the flag post is the stage?

Draw a sketch of your school in the environment diary.

Sanal's Panchayath

Sanal's school is in Anara Panchayath.



Study the map of Anara Panchayath and list the peculiarities of each ward.

Ward Number	Peculiarities of the ward
1	<ul style="list-style-type: none"> • shares border with Tamil Nadu • has a public well • has a school • has a river
2	
3	
4	

Now, find out the peculiarities of your panchayath from the map of your Grama Panchayath.

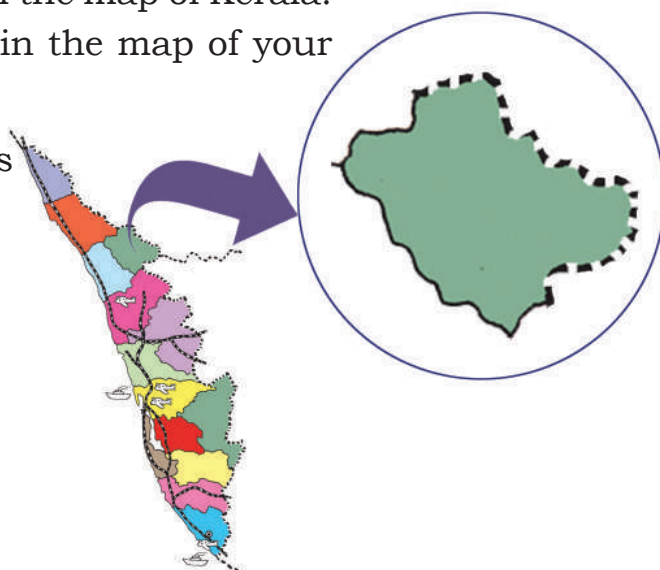
My District

Identify your district from the map of Kerala.

Now mark the following in the map of your district.

- Neighbouring districts
- District headquarters
- Tourist centres
- Rivers

What else can we mark?



We can present the peculiarities of a large area on a paper. Such a representation of a geographical area is called a map.



Significant learning outcomes

The learner


- reads the map of Kerala based on the index.
- marks directions on the map accurately.
- prepares a sketch of a classroom and school.
- finds out directions using the Mariner's Compass.
- marks important resources in the map using appropriate symbols.
- marks resources using symbols in the map of Kerala and the map of his/her district using symbols.
- lists the resources of the Panchayath by examining the map of the Panchayath.
- illustrates the resource in the map of the district.



Let us assess

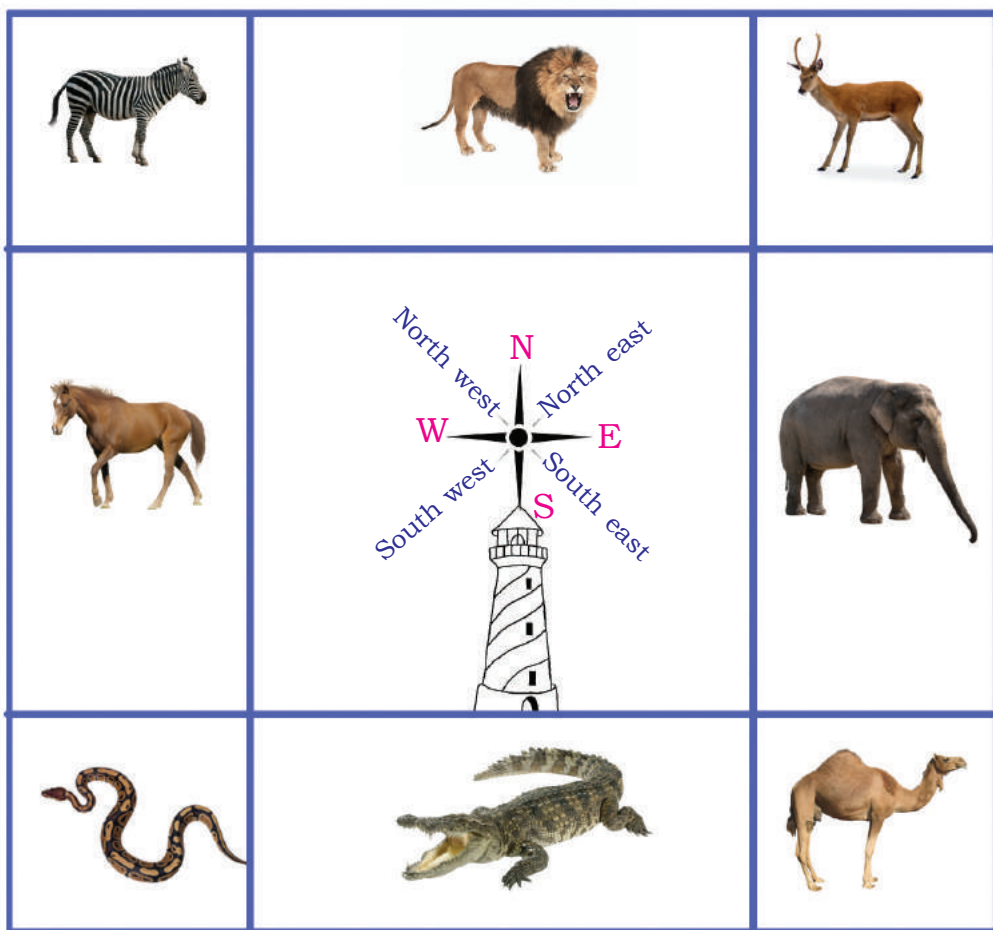
1. Direction Game

A child should stand in the block lying in the centre of nine blocks. When the command 'East' is given, he should jump to the block on the east. He must immediately return to the central block. The game is repeated commanding different directions. The child who plays for a longer time without going wrong stands first.

North West	North	North East
West		East
South West	South	South East

2. Spot the direction

Liyana is now in the Observatory Tower in the zoo. Write down the direction of each animal with respect to the Observatory Tower.



Answer the following questions.

- Which creature is on the northern direction of the tower?
- On which direction of the tower is the camel?
- On which direction of the tower is the horse?
- On which direction of the tower is the crocodile?
- Identify the position of the snake.

3. Let us prepare an index

What are the details that you can get from the sketch?



Prepare the index for each of the item you found and illustrate them in the box given below.





- Police station
- Railway station
- Bus stand
- Post office
- River
- Bridge
-

Index

4. Put a ✓ mark against the correct one.

- The name of the instrument used to identify direction.
(Thermometer, Speedometer, Mariner’s Compass, Telescope)
- Which direction does the top of a map indicate?
(east, west, south, north)

5. What does each of the following symbols represent?



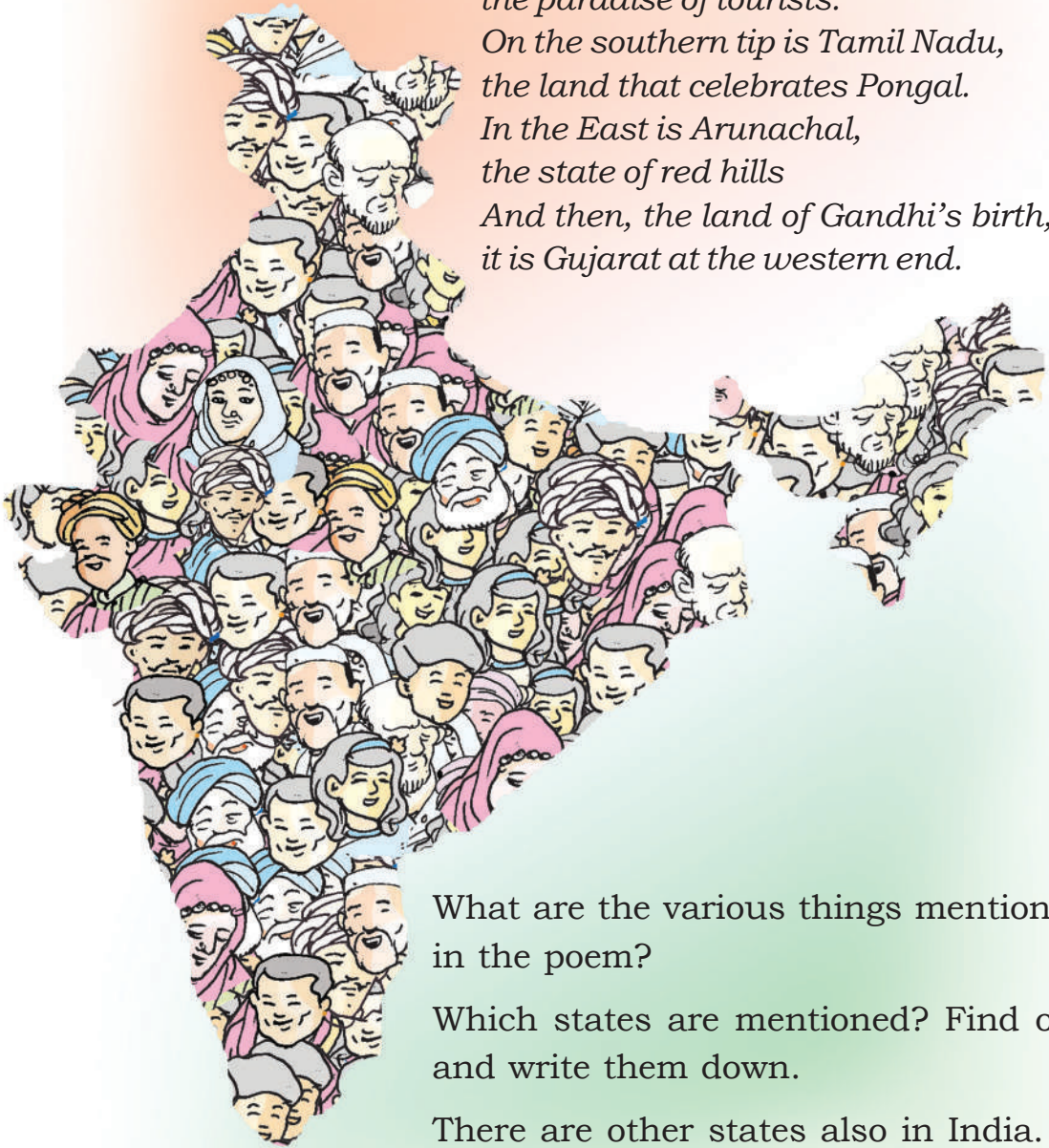
Extended activities

- Draw a sketch of your house. Indicate the buildings, lanes, roads and neighbouring houses.
- Make a model of your school using cardboard and newspaper.

Through India

The Vast Land

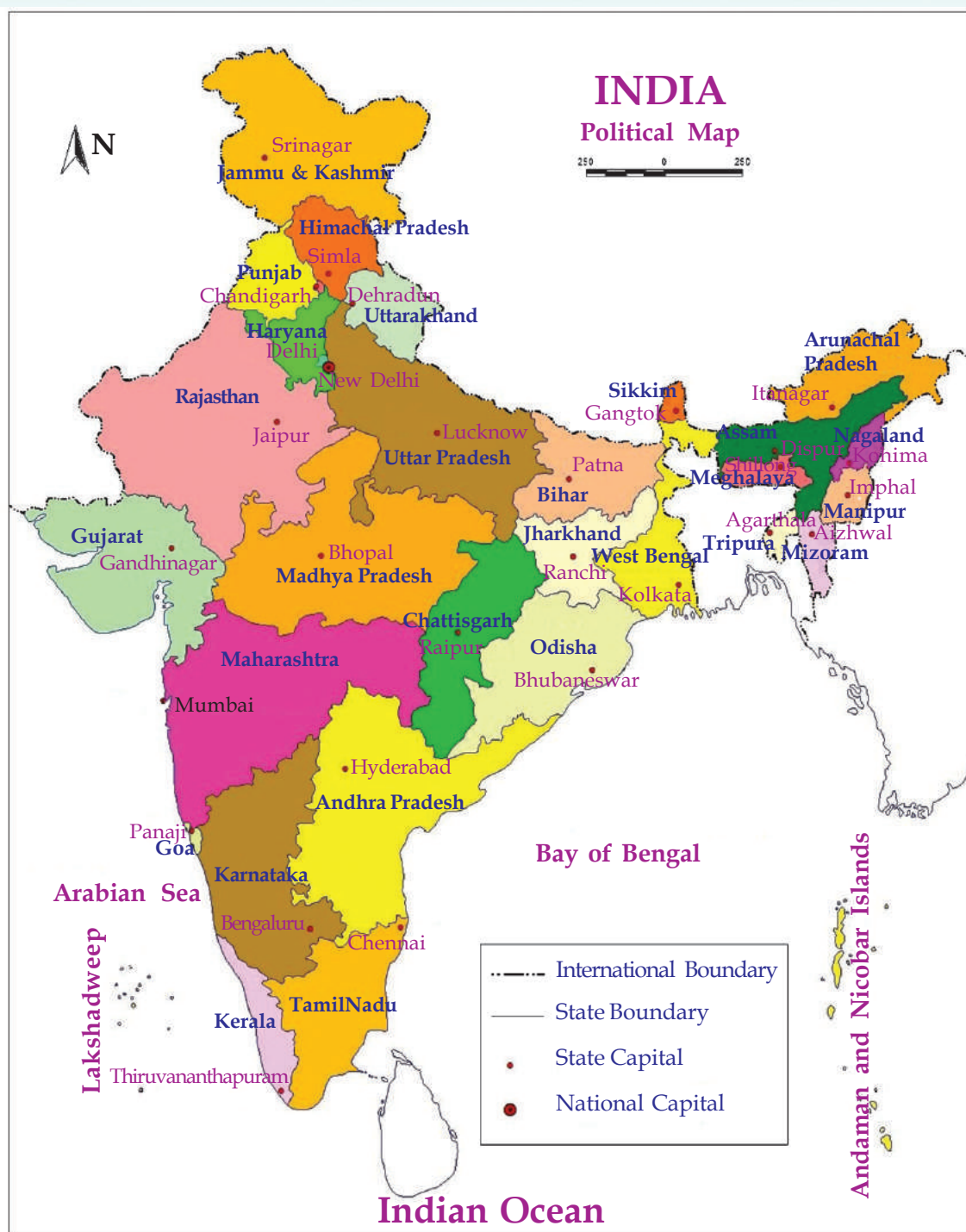
*Of India, my native land,
the states, let me mention here-
In the north, is Jammu Kashmir,
the paradise of tourists.
On the southern tip is Tamil Nadu,
the land that celebrates Pongal.
In the East is Arunachal,
the state of red hills
And then, the land of Gandhi's birth,
it is Gujarat at the western end.*



What are the various things mentioned in the poem?

Which states are mentioned? Find out and write them down.

There are other states also in India. Name them.



Note : Andhra Pradesh was divided to form two states, Andhra Pradesh and Telangana.

Let us identify

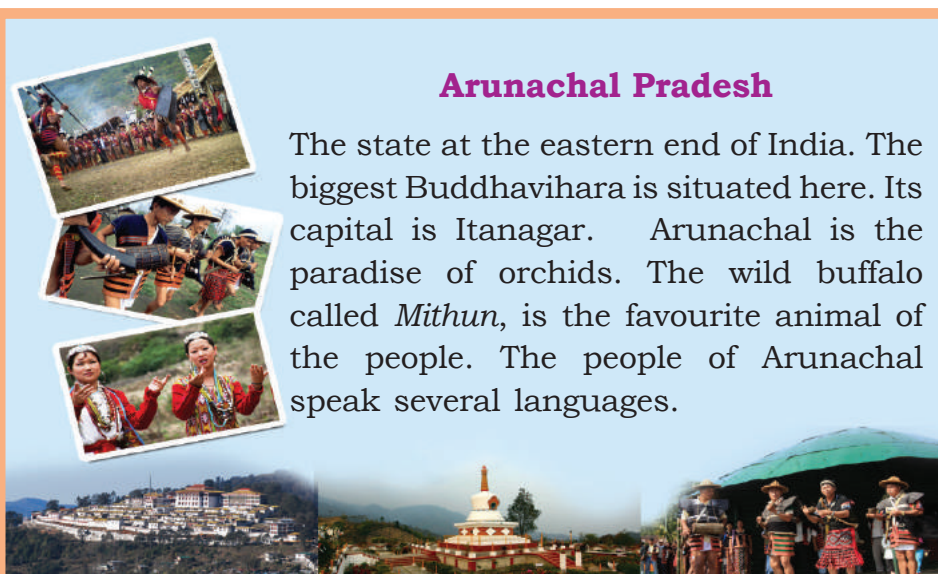
Did you observe the political map of India?

- Which are the states that lie close to the Arabian Sea?
- Name the states that lie close to the Bay of Bengal.
- Which are the states that do not have a sea shore?

Let's know more

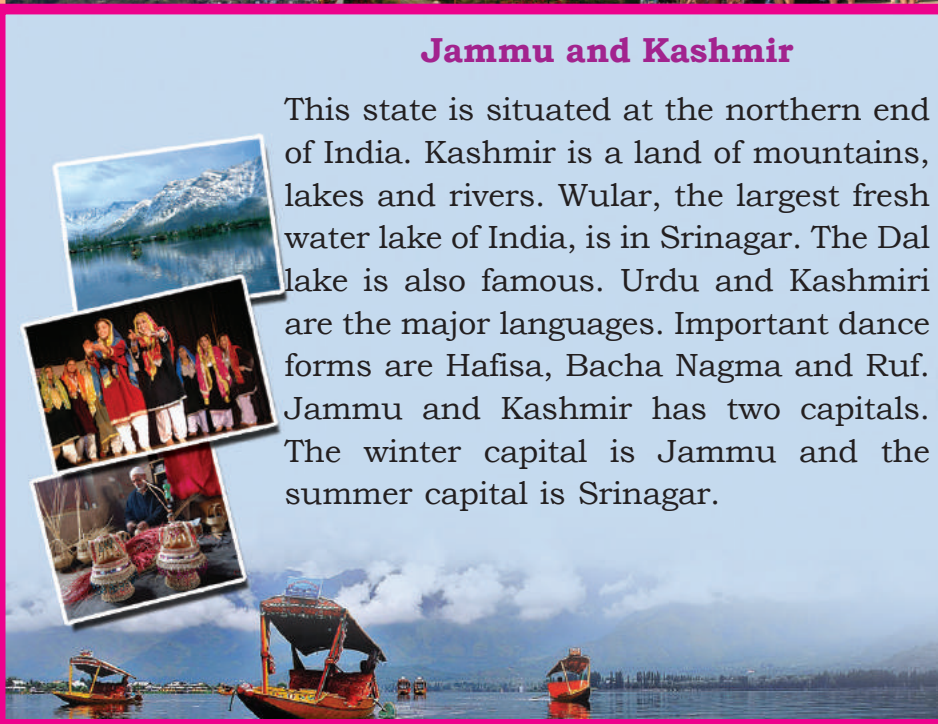
Arunachal Pradesh

The state at the eastern end of India. The biggest Buddhavihara is situated here. Its capital is Itanagar. Arunachal is the paradise of orchids. The wild buffalo called *Mithun*, is the favourite animal of the people. The people of Arunachal speak several languages.

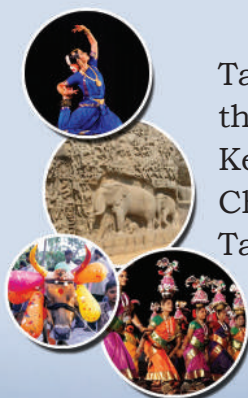


Jammu and Kashmir

This state is situated at the northern end of India. Kashmir is a land of mountains, lakes and rivers. Wular, the largest fresh water lake of India, is in Srinagar. The Dal lake is also famous. Urdu and Kashmiri are the major languages. Important dance forms are Hafisa, Bacha Nagma and Ruf. Jammu and Kashmir has two capitals. The winter capital is Jammu and the summer capital is Srinagar.



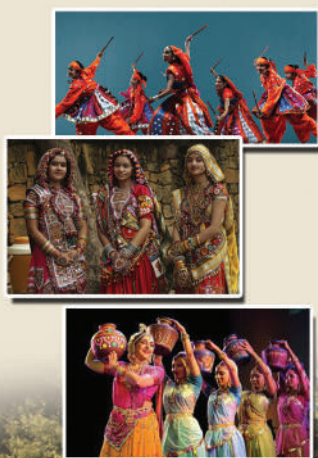
Tamil Nadu



Tamil Nadu is the southernmost state of India. Tamil is the main language. It is also the neighbouring state of Kerala. It is the land of *Bharathanatyam*. Its capital is Chennai. The popular silk *Kancheepuram* belongs to Tamil Nadu.



Gujarat



Gujarat is at the western end of India. Porbandar, the birth place of Mahatma Gandhi is in this state. *Garba* dance is a unique art form of Gujarat. Gujarat has the longest coast of all the Indian states. Its capital is Gandhinagar. Gujarati is the main language.



You have learnt about a few states of our country.

- Collect information about the other states of India. Note them down in the environment diary.

Now, complete the following table collecting information about the states of India.

State	Capital	Neighbouring states

Didn't you learn about different states?

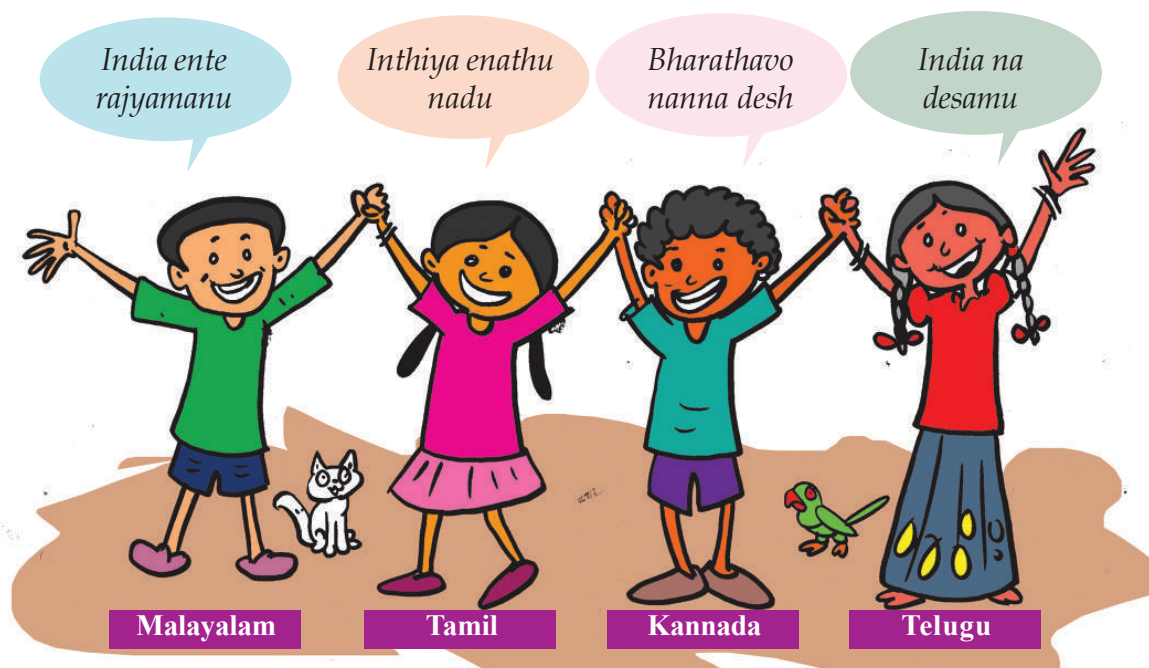
Besides these, India has 6 union territories and the national capital territory, Delhi.

Collect information about them also and write down in your environment diary.

Though languages are different ...

How does the pledge that you take regularly at the school assembly begin?

Notice how this pledge begins in different state languages.



These are the languages of our neighbouring states.

Which are the languages used in the other states of India?

State	Languages
Madhya Pradesh	Hindi
West Bengal	Bengali

- Now, examine the table you have completed and identify the most spoken language of India.

The language lore

- Hindi is the most popular language in India.*
- Our constitution has recognized 22 regional languages.*
- There are around 40 languages in India which are spoken by more than ten lakh people.*
- There are around 1700 spoken languages in India. Of these, only less than thousand people speak some of the languages.*

Art forms

Just as we have different language, we also have different art forms.



Kuchuppudi

Odissi

Kathak

Bharathanatyam

Manipuri

Are you familiar with any of these art forms? To which state does it belong?

Identify the major art forms of other states of India. Note them down in the environment diary.

State	Art form
Tamil Nadu	Bharathanatyam
	Odissi
	Kathak

How diverse is our country with respect to language, art forms, culture etc.?

Inspite of these diversities, what are the things that unite us, Indians?

National Symbols

Don't you want to know about the national symbols we respect and take pride in?

National Anthem

Who wrote our national anthem?

What are the things that one must keep in mind while reciting the national anthem?

- The duration for recitation.
-

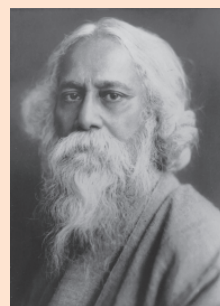
One should stand at attention position while reciting the national anthem. The recitation must be completed within 52 seconds.

The National Anthem

Jana-gana-mana adhinayaka,
jaya he
Bharatha-bhagya-vidhata.
Punjab-Sindh-Gujarat-Maratha
Dravida-Utkala-Banga
Vindhya-Himachala-Yamuna-Ganga
Uchchala-Jaladhi-taranga
Tava subha name jage,
Tava subha asisa mage,
Gahe tava jaya gatha.
Jana-gana-mangala-dayaka jaya he
Bharatha-bhagya-vidhata.
Jaya he, jaya he, jaya he,
Jaya jaya jaya, jaya he!

Rabindranath Tagore

It was Rabindranath Tagore, who wrote our national anthem. He was born at Kolkatha in West Bengal. He started writing poems at a very early age. He won the Nobel prize for literature for his master piece, Gitanjali. He founded Santhi Niketan which became Viswabharati University later on.



National Song

“Vande... mataram...” is our national song. It was written by Bankim Chandra Chatterji.



National Flag

There are 3 colours in our national flag – saffron at the top, white in the middle and green at the bottom. At the centre of the white area is the Ashoka Chakra which is navy blue in colour with 24 spokes. Our national flag was designed by Pingali Venkayya.



National Emblem

Our national emblem is adopted from the stupa founded by Emperor Asoka at Saranath. It consists of 4 lions looking in four directions and the '*dharmachakra*' beneath it, with the forms of an elephant, a horse and a bull around it. Below this, the words '*Satyameva Jayate*' are inscribed.



सत्यमेव जयते



National tree



National animal



National bird



National flower

Collect pictures and details of our national symbols.
Write them down in the environment diary.

- National fruit
- National game
-



Significant learning outcomes

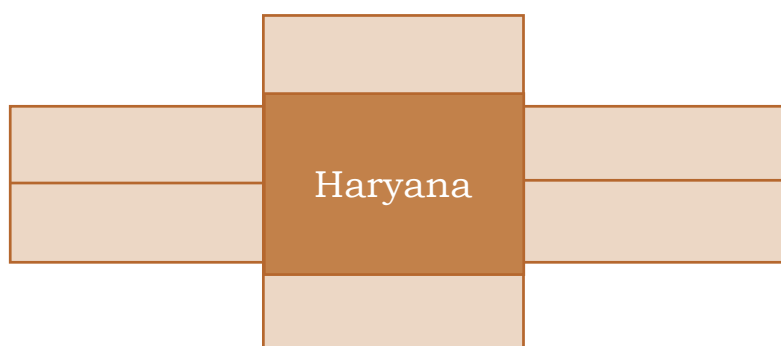
The learner

- explains why India is a land of diversity.
- lists out the 29 states, 6 union territories and the national capital territory of India.
- explains that each state has its own unique art forms.
- identifies and states that there are various languages in India.
- identifies and lists the common factors which unifies the Indians inspite of many diversities.



Let us assess

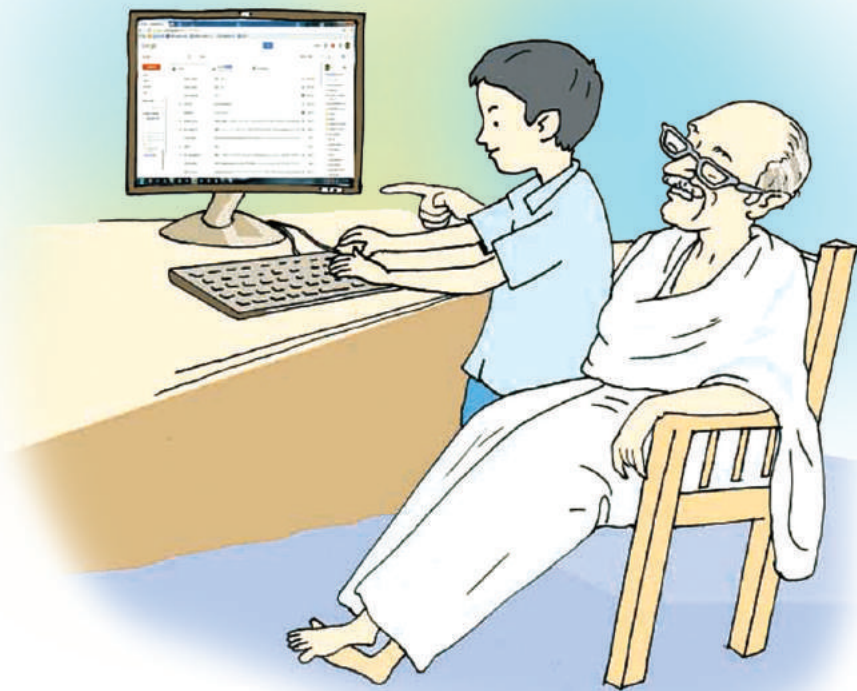
- Fill up the boxes in such a way that neighbouring states do not come in nearby boxes.



Extended activities

- Make models of our national flag.
- Make a map of India using different materials.
- Collect patriotic songs and recite them.
- Prepare questions for a quiz competition based on the diversity of our country.

Very Far, a little Far



Venu : Grandpa, we have received the wedding invitation letter of Salini chechi, who is in America.

Grandpa : Really? When did you receive it? I didn't see the postman.

Venu : They sent it just now from there.

Grandpa : What a surprise! The letter reached here the minute it was sent!

Venu : Grandpa, it is the e-mail.

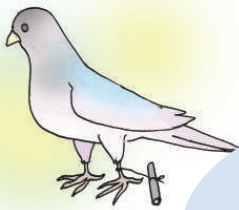
Grandpa : In oldentimes, it took days for a letter to reach its destination.

Venu : Why was it so?

Grandpa : There were no computers in those days.

Venu : How were messages sent then?

Grandpa : The communication system in those days was not like what we have today. Trained pigeons were used to exchange messages. During war, pigeons were used for exchanging messages and to send messages from land to ship.



Trained pigeons were used to carry messages. They would return after delivering the message.



What were the means of communication other than birds?



Perumbara



Doothan

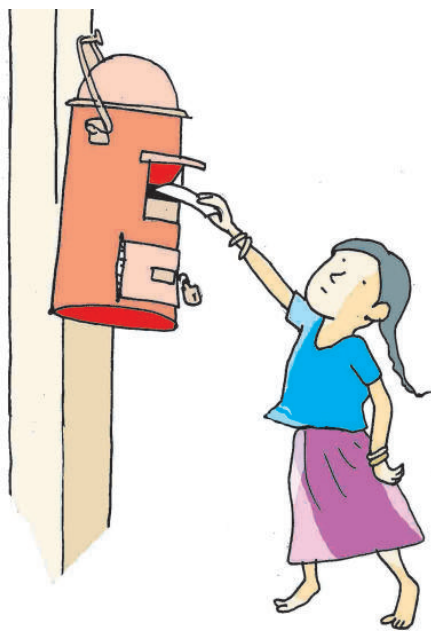


Anchalottakkaran

Look at the pictures.

How do the people in each picture exchange messages?

What are the methods for exchanging information?
Complete the list.



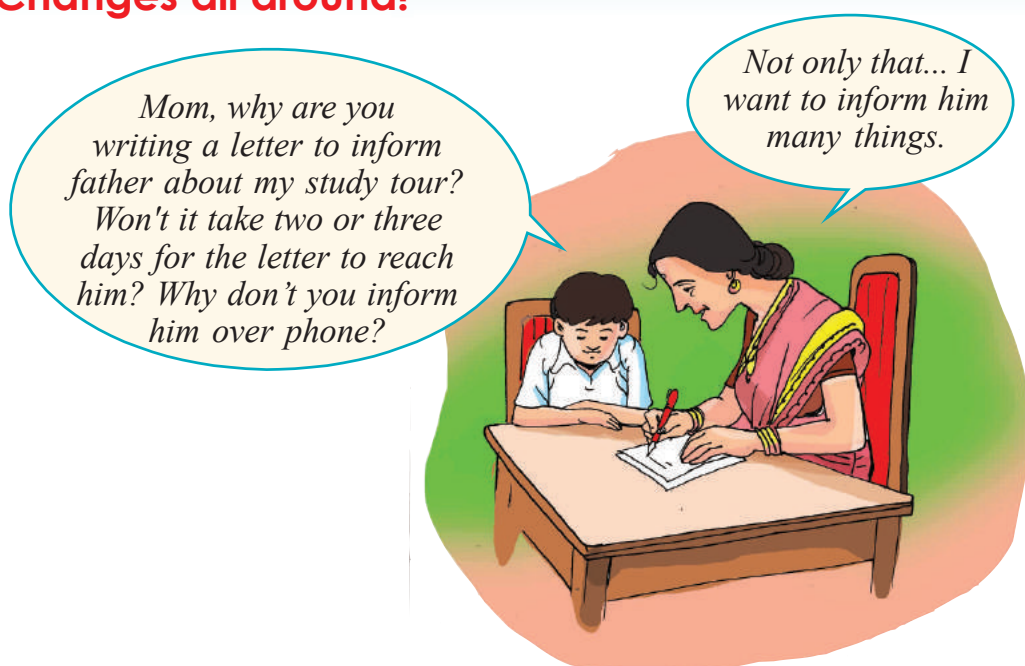
- e-mail
- _____
- _____
- _____
- _____
- _____
- _____

Which among the following communication devices are there in your list?



Discuss with your teacher and write their names.

Changes all around!



What all could be the reasons for the changes in the field of communication?

Write it in your environment diary.

Great changes occur in the field of communication. These changes make communication faster, less expensive and more convenient.

From sound to sight

Rapid changes occur in the field of communication. Radio was the only source of mass communication till a few decades ago. What about today?

Identify the changes in the field of communication and complete the table.

Radio	
Letter	e-mail
Telephone	

We, the milestones in communication...

Newspaper



Friends... I am one of the most popular media of mass communication. I can bring you any important news from any part of the world. Since I come to you everyday with fresh news, I am also called 'daily.'

Computer

Am I not your most favourite electronic device? I give you audios, texts, images, videos and all such information on demand. Not only that, I also store the information and give it again as you require. Do you forget that we play computer games together? I update myself constantly. Try to update yourself with these changes.



Telegraph



I may not be familiar to you because I am out of use today. But, for a long time, people depended on me to send information quickly. I got my name from two Greek words - *tele* which means distant and *graph* which means writing. Please try to know more about me and never forget me.

Radio

I was introduced to the world by a scientist named Marconi. I can spread information across the world very quickly. But my voice only reaches you. How many programmes full of entertainment and information do I bring you daily! Just listen to me! Don't forget me!



Television



Today I am just like a member of your family. I got my name from the Greek word *tele* and the Latin word vision. I come to you with a variety of programmes with news, knowledge, entertainment etc.



Internet

I connect computers in different parts of the world to provide information. I can enable people in distant places see each other while talking and also in video conferencing. So the best way to describe me is 'knowledge at finger tips'.



Fax

I can send the true copy of any message which may include images and texts, to any part of the world immediately. I can also exchange telephone messages. My name is Fax.

Telephone

"Mr. Watson, come here...I need your help." This is what I said first. I was born on 10 March 1876. I was introduced to the world by the great scientist Alexander Graham Bell. I have a lot of friends today. Think of the different services I provide you today!



Mobile Phone

Hello...

Walkie Talkie

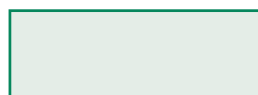
Don't you know me? You might have seen me with policemen because they use me the most. I am always alert to maintain law and order and national security. I was the first mobile device which was used to speak to each other.



Just look at me. I am smart, aren't I? Yes, I am your friend... I am ready to offer you all the services you require which include playing video games, taking photographs, exchanging messages etc. You can access the internet through me. Haven't you heard of my new version in which you can see each other while talking?

Arrange in order

Arrange the following devices in the picture in the chronological order of their use.



Classify

Classify the following means of communication on the basis of the nature of message transfer.

Telephone	Newspaper	Radio	e-mail	Television	Fax
-----------	-----------	-------	--------	------------	-----

Message transfer to individual	Message transfer to the mass
<ul style="list-style-type: none"> • Telephone • • 	<ul style="list-style-type: none"> • Newspaper • •

Mass media refers to the medium of communication that transfers an information to a large number of people at the same time.

Telegram abandoned



Some of the means of communication we used till recent times, do not exist now. Why?

Today, means of communication have expanded to other fields other than communication. What are the other fields? How are they used? Let us see.

There is the possibility of strong wind upto 150 km/hr



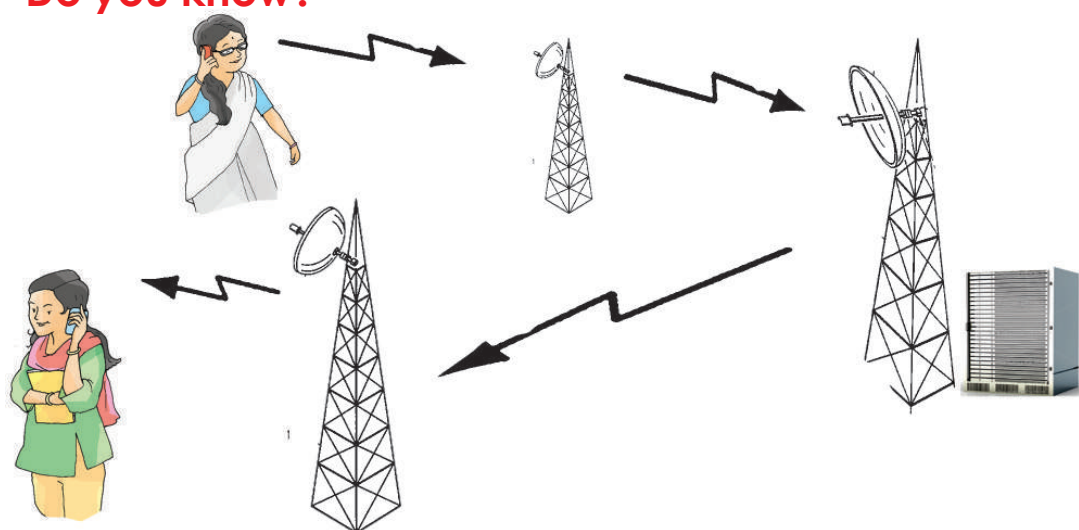
Police found the criminal by tracking his mobile phone



Which are the other fields in which means of communication are used? Find it out.

- Live telecast
-

Do you know?



How does the voice reach the listener through a mobile phone?

Communication technology is progressing rapidly. This helps in forecasting climate change and natural calamities. It helps us to know information from any part of the world and pass them to others even sitting in our own houses.



Significant learning outcomes

The learner

- identifies and explains means of communication used in the past.
- identifies and explains the systematic progress in the field of communication.
- prepares notes on modern means of communication.
- classifies different mass media on the basis of their nature.



Let us assess

1. The bird which was used to exchange information in the past.
a. eagle b. pigeon c. cuckoo
2. The media that enable us to listen and watch news
a. radio b. television c. newspaper
3. Write the names of the Malayalam newspapers you know.
4. Write the limitations of the means of communication which were used in the past.
5. Write the advantages and disadvantages of the land phone and the mobile phone.

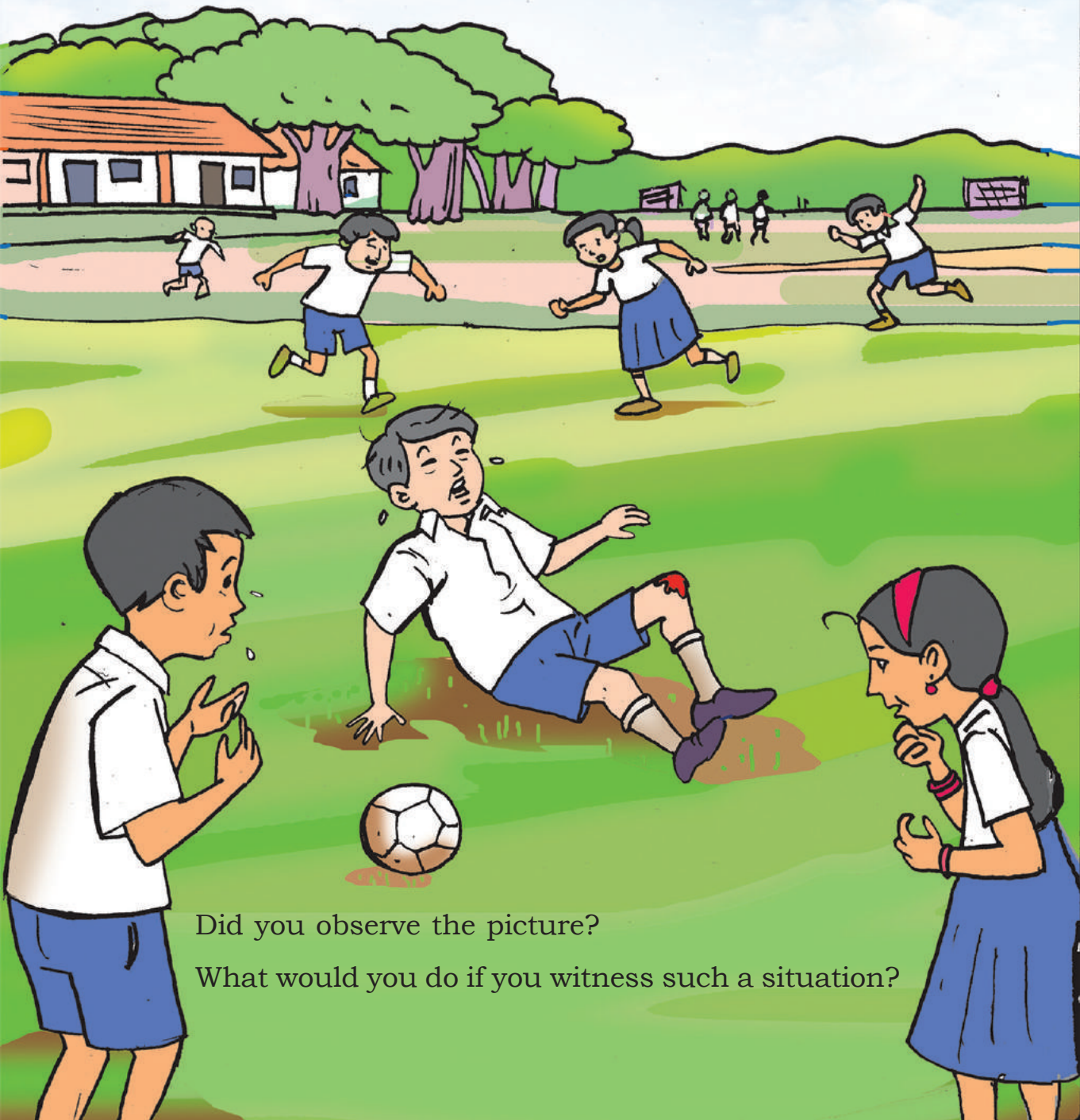
6. Which is the most appropriate instrument of communication in the following situations.
 - a. for a fisherman to contact with his friends, who missed them while fishing.
 - b. to listen to the weather forecast.
 - c. to watch the live telecast of the cricket match between India and Sri Lanka.



Extended activities

1. Collection of postal stamps.
2. Tele-conference, Video-conferencing
(between the headmaster and students).
3. Making toy telephones.
4. Visit a telephone exchange to learn how messages are exchanged.
5. Listen to radio news in Malayalam and English.
6. Children's Radio (*Akashvani*).
7. A Post office in school.

Care for friends



Did you observe the picture?

What would you do if you witness such a situation?

Youngsters saved,
a family back to life

Child's courage
averts danger

Read these news headlines?

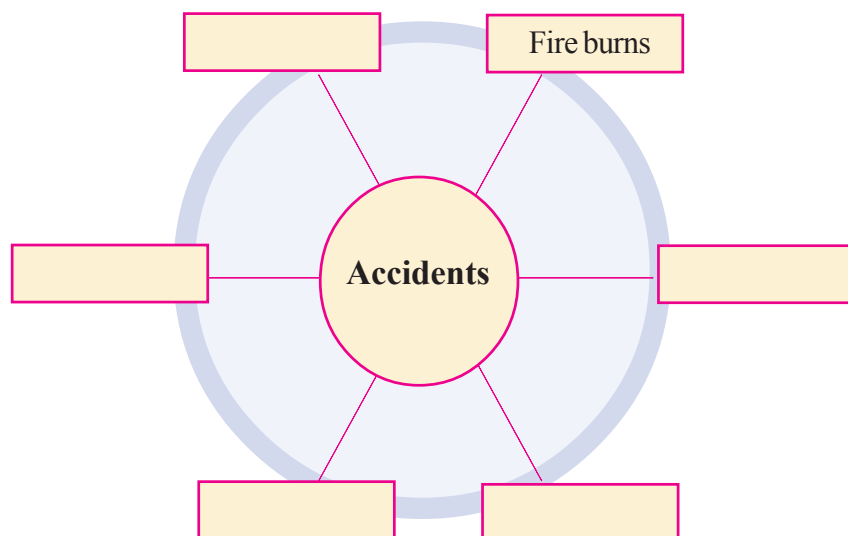
Do we usually help people when they meet with accidents?

What all can be done in such situations?

- can take them to hospital.
- can inform elders.
- can inform concerned authorities.
-
-

Have you or your friends ever met with accidents?

Mention some common accidents.



We too can help...

Don't people who meet with accidents need care before reaching hospital?

First Aid is the care given to a person who meets with an accident, before he or she receives medical assistance.

First Aid

What are the benefits of first aid?

- to reduce the intensity of the injury.
-

What are the duties of a first aid provider?

- console the accident victim.
- provide medical assistance at the earliest.
-



We must have a clear idea about the first aid to be provided to the victim in each accident case.

Wounds

Have you ever get wounded?

What do we do when the wound is minor?

- clean the wound with pure water.
- hold the wounded part high.



- hold the wounded part tightly with a clean cloth to prevent bleeding.
- don't remove the blood clot from the injured part.
- do not leave the wounds open as it will cause infection.
- let the injured person be seated or

laid comfortably, if the injury is serious.

- take the injured person to hospital, at the earliest.

•

Why should the first aid provider keep his hands clean?

Nose bleed...

- Let the person sit leaning forward.
- Press the tip of the nose with the thumb and forefinger.
- Ask the person to breathe through the mouth.
- Don't let the person to talk.
- Seek medical assistance.

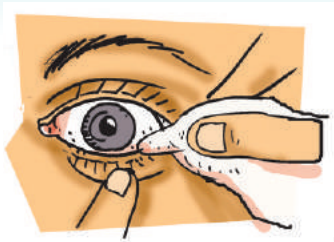


A mole in the eye...

It is common that dust falls into the eye at times. Why should you not rub the eye when dust falls into it?

How can the speck of dust in the eye be removed?





We can rinse the eye with clean water or remove the speck of dust with the tip of a wet kerchief. Particles that get into the eye should not be forced out, but removed only with medical assistance.

Sprain

Have you felt a sprain while playing or stepping downstairs?

What will you do when there is a sprain?

- Hold the sprained part high without moving.
- Place an icepack to reduce pain.



Icepack

A plastic cover with ice pieces and water wrapped by a clean piece of cloth can be used as an icepack.



Bruise

Do bruises occur on the body when heavy objects fall on it? What first aid can be provided for a bruise?

You can place a wet piece of cloth or an icepack on the bruised part to avoid pain or swelling.

- Do not apply heat or massage the area.

Fainting

What will you do if your friend fainted while playing in the ground?

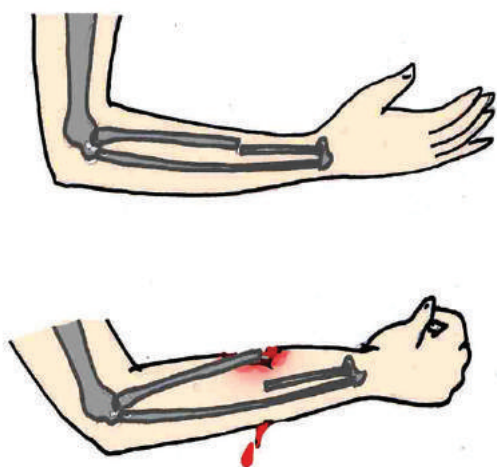
- see that the person can lie down when he feels giddy.
- then hold the legs high.
- loosen tight clothes, if any.
- ensure fresh air by avoiding to crowd around the person.

Fracture

Sometimes bones fracture due to accidents. But the surrounding body parts may not get injured. In some other instances the broken bone comes out piercing the body.

Take care to prevent bleeding and germs from entering the wound.

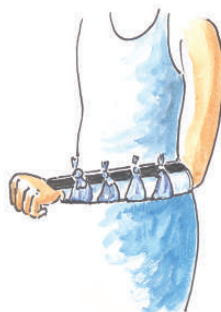
Provide medical assistance immediately.



Shift the fractured person only after keeping the fractured part intact. A splint may be used for this purpose.

Splint

While dressing the fractured part, a splint is used to prevent the movement of joints above and below the fractured bone. A normal ruler, thin piece of wood, cardboard etc., can be used for this.



Food choking

Food getting blocked in the throat is a dangerous situation. The immediate first aid provided at the time, helps to save life.

Press the stomach with one hand and tap strongly on the back of the affected person. If the food does not come out even after this is done for 3-5 times, provide medical assistance immediately.



Burns

Have you ever suffered from burns? What are the situations of getting burns?

- when acid falls on the body.
-
-

What should be done when there is a burn?

- pour water continuously over the burnt area.
- don't put ice on the burnt area.
- don't pull away the cloths stuck to the burnt area.
- don't apply anything as medicine on the burnt area.



When the dress catches fire...

- try to extinguish the fire using water.
- rolling on the ground helps to put out the fire.
- do not allow the person to run in panic. Fire blazes by the wind.
- cover the person immediately with a thick blanket or jute sack.



What are the precautions that can be taken to avoid burns? Discuss and note down in your environment diary.

Snake bite

What first aid can be given to a person bitten by a snake?

- console the person.
- do not allow the person to run or walk.
- wash the wound clean.
- keep the bitten part lowered.
- provide medical assistance at the earliest.

There are poisonous and non-poisonous snakes.

Identifying the snake will make the treatment easy.



What are the precautions that can be taken against snakebites? Note them down.

Drowning

Knowing to swim will reduce accidents in water.

We can bring a person who fell in water ashore by providing him a long rope or cloth or piece of wood. One should take care of himself while trying to save a person drowning in water.

Do not jump into the water if you do not know swimming.

Try to seek the help of others.



Electric shock

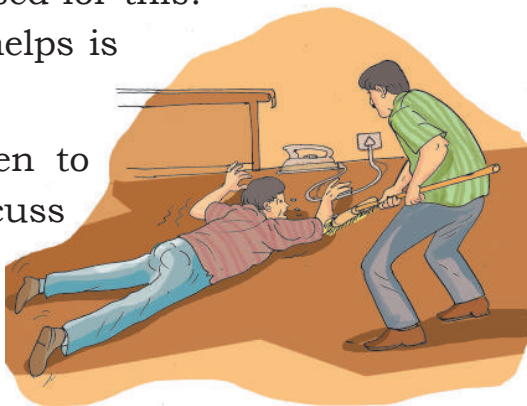
Don't we use a number of electric equipments? Great care should be taken while using them. What could be done to save a person from an electric shock?

- Switch off the power supply. If the flow of current cannot be stopped, separate the affected person from the electric connection using a glove or a dry piece of wood.

What other materials can be used for this?

The safety of the person who helps is also important.

What precautions can be taken to prevent electric shocks? Discuss and note them down in the environment diary.



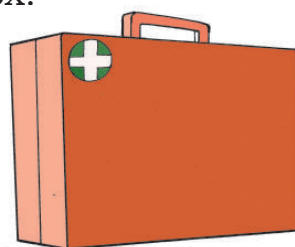
First Aid Box

What are the materials necessary for first aid? Don't you have a first aid box with all such things in your school and home?

Let us set a first aid box.

Materials to be included in the first aid box.

- Antiseptic
- Cotton
- Bandage
-
-



First Aid Day



Every year, the second Saturday of September is observed as First Aid Day to bring out the significance of first aid.

Accidents can happen to anyone at anytime. First aid helps to save the precious life.

First aid, our noble duty

Significant learning outcomes



The learner

- identifies and lists out situations when accidents may happen.
- identifies and states the importance of first aid.
- defines first aid.
- explains the kind of first aid for each accident.
- prepares a first aid box and uses it appropriately.



Let us assess

1. Why do we press the wound tightly when it bleeds excessively?
 - (a) to reduce pain.
 - (b) to avoid germs.
 - (c) to reduce bleeding.
2. When there is a burn on the hand...
 - (a) place ice.
 - (b) apply tooth paste.
 - (c) cool under running water.



Extended activities

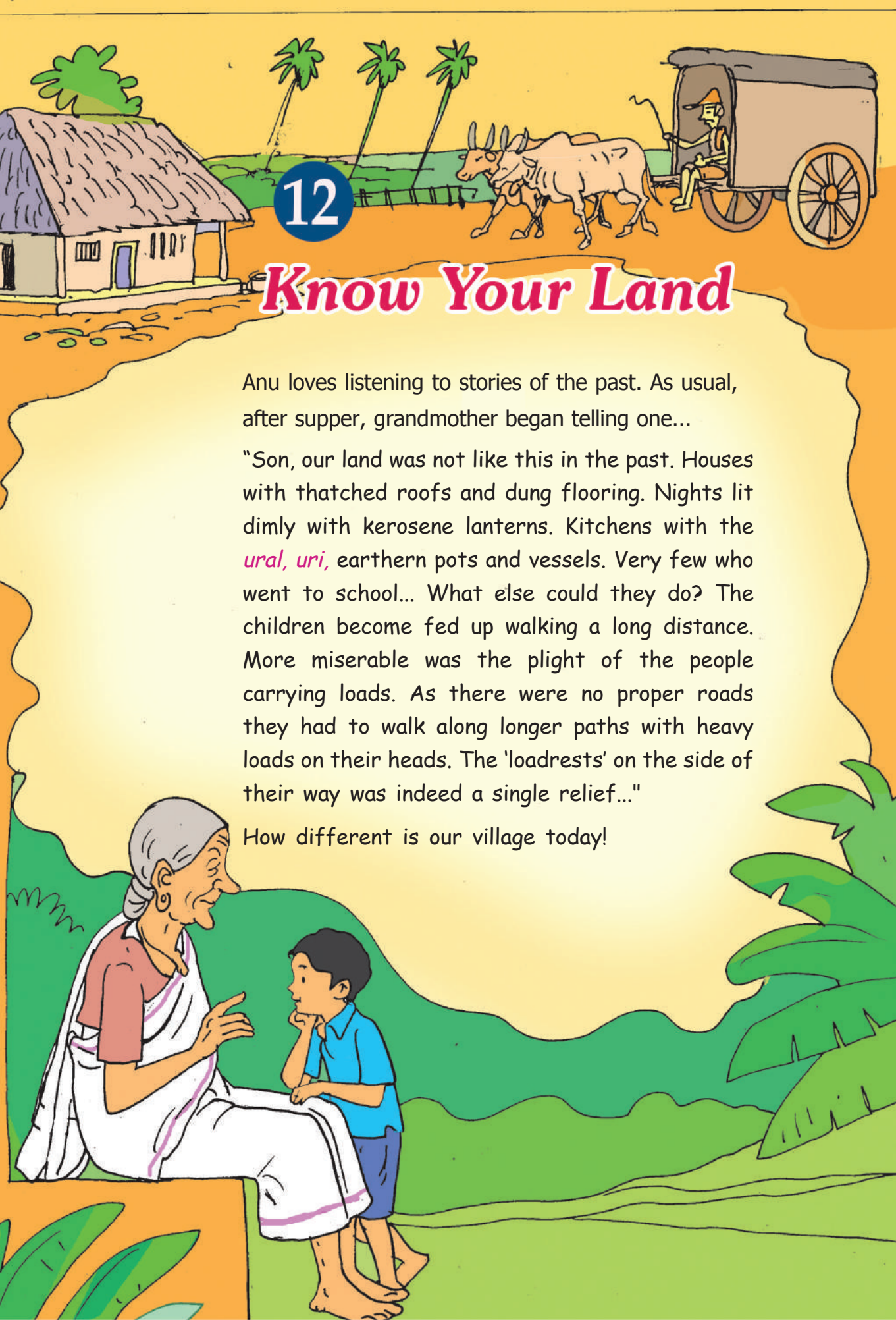
1. Organise a training class on first aid with the support of Health workers.
2. Prepare first aid charts, posters etc., stating clearly the importance and methods of first aid. Exhibit them in your class.
3. Prepare a 'first aid pamphlet' including newspaper reports related to various accidents.
4. Enact a short play on the importance of first aid on First Aid Day in your school.
5. Collect pictures, videos and detailed information related to first aid.

Know Your Land

Anu loves listening to stories of the past. As usual, after supper, grandmother began telling one...

"Son, our land was not like this in the past. Houses with thatched roofs and dung flooring. Nights lit dimly with kerosene lanterns. Kitchens with the *ural, uri*, earthen pots and vessels. Very few who went to school... What else could they do? The children become fed up walking a long distance. More miserable was the plight of the people carrying loads. As there were no proper roads they had to walk along longer paths with heavy loads on their heads. The 'loadrests' on the side of their way was indeed a single relief..."

How different is our village today!



Did you listen to grandmother's story of the land?

What is the name of your land?

Won't your land also have a history like this?

How can we know it?

Whom will you enquire to?

You can ask your grandmother or elders.

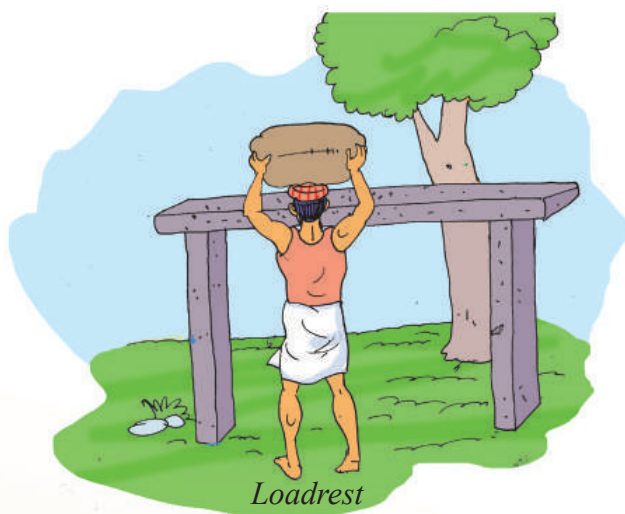
What all will you ask them?

- The agriculture of the time.
- Occupations.
- Food.
- Home appliances.
- Places of worship.
- Festivals.
- Public institutions.
-



Every land has a history of its own. While you tried to know about your land, did you come across anything like that in the picture?

Write it down.



There are some signs around us even today, that remind the history of the land. We must conserve them.

My land today

My land has changed a lot from the past.

In what areas have these changes come upon?

Let us try to know.



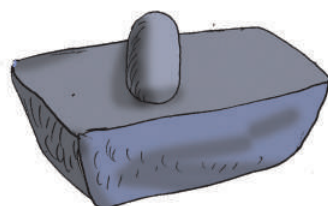
My land	In the past	Today
Agriculture		
Occupation		
Games		
Transportation		
Public institutions		

The changes were made according to the needs of the people.

The changes in the land improved the standard of living of the people. Changes continue to occur as the needs increase.

Did all changes of a land lead to progress? Try to find out.

Do you know who owns the responsibility for fulfilling the common needs of the people of a land?



Today Local Self Government fulfil the common needs of people of a locality. The people of a locality elect their representatives to these Local Self Government. The representatives are elected by voting.



Which are the Local Self Government bodies?

Grama Panchayaths, Municipalities and Corporations are the Local Self Government bodies.

Put a ✓ mark in the place where you live.

Grama Panchayath

Municipality

Corporation

Write the name

The Panchayath President is the head of a Grama Panchayath. Municipal Chairman is the head of the Municipality. Mayor is the head of the Corporation. The elected representatives from each ward or division decides their administrative head.

Kerala has the three tier system of Local Self Government. They are Grama Panchayath, Block Panchayath and the Jilla Panchayath.

In the urban areas it is a Municipality or Corporation.

Identify names and write them down

My Grama Panchayath/
Municipality/ Corporation

My Block Panchayath/

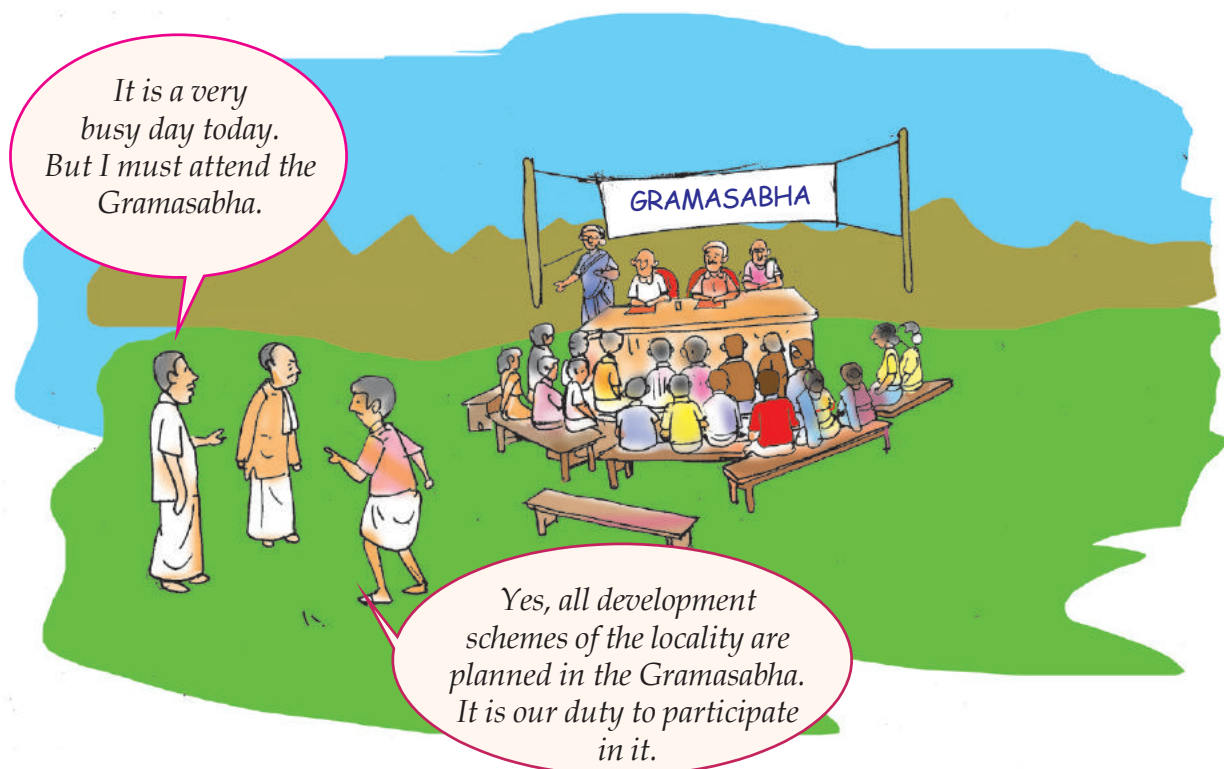
My Jilla Panchayath/

The elected representative of a Panchayath is called a Ward Member. The elected representative of a Corporation or Municipality is called a Councillor.

Who is your Ward Member or Councillor?

Don't they take part in the important functions of your school?

To the Gramasabha



Did you notice the conversation?

Why is it said that one should attend in the *Gramasabha* compulsorily ?

In the Gramasabha people of a locality assemble to discuss the developmental needs of the locality. Based on the discussion they suggest new schemes.

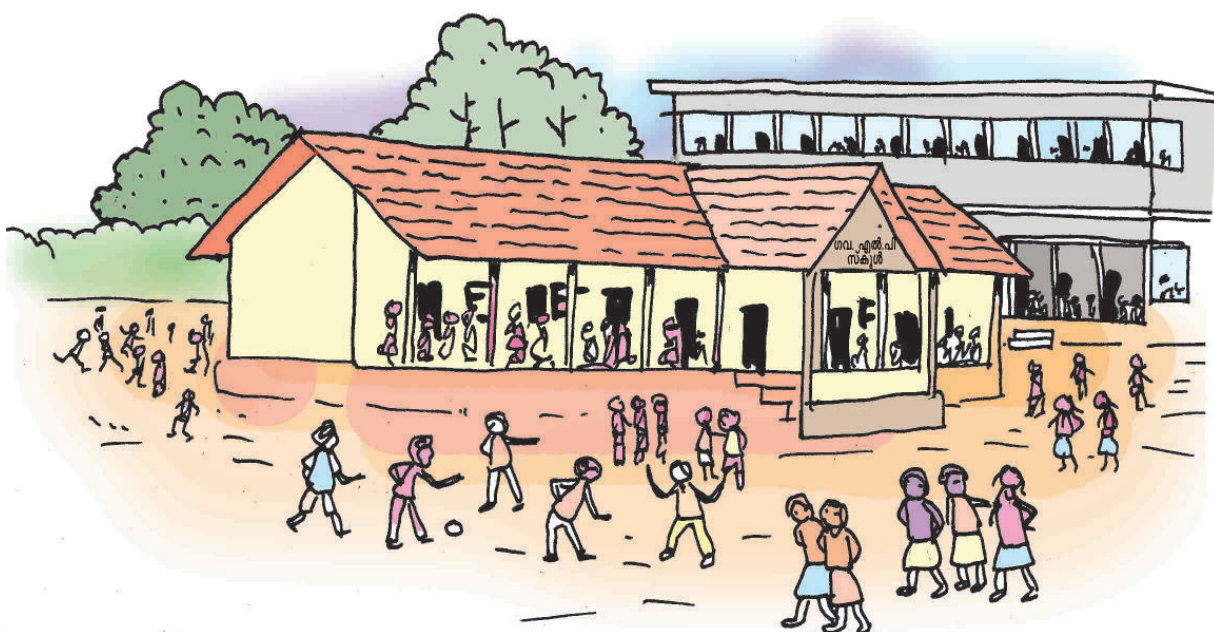
School as a public institution

Your school is a public institution.

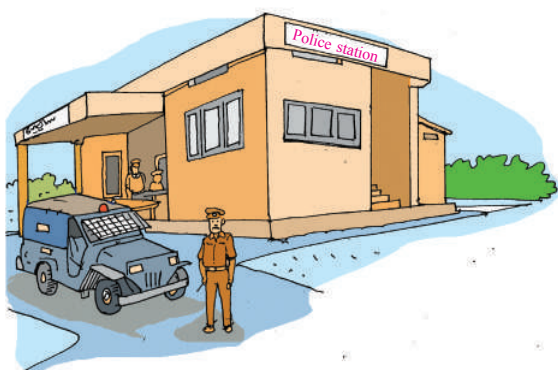
What are the facilities and services you get at school to learn and grow?

- Textbooks
- Scholarships
-

Education is our right. Schools ensure the right to education.



What are the other public institutions that serve us?



Which are the public institutions in your locality?

Public institutions serve to fulfil the needs of the people.

List down the services of the public institutions.

Public Institution	Services
Police station	<ul style="list-style-type: none"> • maintains law and order. • provides security to life and property.

Let's unite for a better future

We have learnt about Local Self Government bodies and public institutions. Besides these, there are other institutions and organisations that work for the welfare of the people.

- Library and Reading room
- Clubs
- Kudumbasree units

Which are the other organisations in your locality?

Our land has many things we can be proud of. It is the unity of the people that leads to the progress of a locality. The unity of the people is the strength of a land.



Significant learning outcomes

The learner

- identifies that our land has a history and records it.
- identifies and explains the symbols of our history.
- understands and explains the various changes that have come upon our land.
- identifies and explains that the progress of a locality is based on the needs of the people.
- identifies and states that a land has its own form of government and that administrative bodies fulfil the needs of the people.
- explains that the Grama Panchayath/Municipality, Corporation are Local Self Government institutions and that the Grama Panchayath, Block Panchayath and Jilla Panchayath make the three tier systems of the Panchayath.
- explains about public institution and their services.



Let us assess

1. Match the following.

Local Self Government body	Elected Administrative head
Grama Panchayath	Chairman
Municipality	Mayor
Corporation	President

2. Prepare note including the public institutions of your locality and their services.
3. Which institution owns the responsibility to fulfil the needs of a locality?
a. Police station b. Village office c. Grama Panchayath
4. The head of Grama Panchayath
a. Panchayath Secretary
b. Ward Member
c. Grama Panchayath President
5. The gathering of the people of a locality to discuss and decide the developmental schemes of a Ward.
a. Kudumbasree b. Gramasabha c. *Ayalkoottam*



Extended activities

- Interview with public persons.
- Visit to a public institution.
- *Nattucharithram* - pamphlet.
- Visit a Gramasabha with your family.
- Conduct an interview with the elders of your locality to know the past of your land.
- Visit a nearby library and reading room. Write a brief report on the visit