ENVIRONMENTAL STUDIES

Class - 5



2019-20

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Foreword

It is necessary that both teacher & student be active for the acquisition of knowledge. It was a great challenge to bring out the different social, cultural & geographical diversity which is the strength of our state, in this book. It was greatly planned that each student would find the book to be his personal one.

Children of this age group have an overall view of their surroundings. So care has been taken to include the natural, cultural and social things in their surroundings. To make the book child centred, care has been taken to provide opportunities to children for search, observe, express their views and find solutions by them selves.

In the textbook many opportunities has been given for the students to work individually, in groups and with the society. It has also be devised in this book that the children take the help of other sources along with that of the textbook and their teachers-as-family, society, newspaper, library etc. By this Family and society will be connected to the school.

During the making of this textbook many environmental points have been kept in mind as forests, animals, plants-trees, rivers, transport, petrol, water, pollution, natural disaster, family relations and disability so that the children may be aware of these and develop a positive thinking about them. The activities given in the book are suggestive. You are free to add more at your level.

Evaluation would be at your level but must be continuous, comprehensive and child centred.

Right to Education Act-2009 stresses on providing quality education. NCERT New Delhi has established class wise, subject wise, learning outcomes for students of class 1 to 8 and has suggested pedagogical activities for achieving the all-round development of the children. So for the year 2018-19 textbook has been made even share & relevant so that children get maximum opportunity to acquire knowledge. Hope this book will help teachers, parents and children to reach their goals.

In the production of this book we have received great help and guidance from teachers of government and private schools DIETs colleges and Ravishankar University Raipur, private institutions and enlighted citizens. We are greatly obliged and offer sincere thanks to all.

We would welcome suggestions for the improvement of this book from all of you.

Director

State Council of Educatoinal Research and Training Chhattisgarh, Raipur

Preface

SCERT has tried to prepare this book as child centred. So that the children may be in continuous contact with the environment. Opportunities for the children to do by themselves, search and work in groups, do experiments, discus and come to a solution have been given in this book.

There are chances given in this book to openly discuss and argue on topics related to environment, may it be natural, social or cultural as water, forest, pollution, natural disasters, animals and conservation of natural resources; so that they may response to these and comprehend it properly.

A list of the skills are given in the textbook. You should provide an open space for the children to learn. Motivate them to do as many activities as they can, give them a chance to know and ask questions about the world around them. You know that children are aware of their surrounding and getting a chance to tell something about it will help to build up their self-confidence.

The main objective of elementary education is comprehending the written matter. It is expected that some measure to develop their linguistic skills is also taken.

While teaching some lessons as our Occupations, Roots and Leaves, Historic places, Haat Bank, Forest and Let's make a Survey children are to be taken outside the class/school and for lesson as Directions, scale and map, magic with mirror Solar Energy, Friction, Mosquitoes and Malaria, Ant and Bones, materials for the activities has to collected locally. It is better to collect these articles before the teaching of these lessons. You should take the help of the students for this. Mostly all the materials could be collected easily from nearby areas.

Maps of India, Chhattisgarh and your district must be displayed in the class-room. Students must be encouraged to took and read the maps when teaching lessons based on maps.

Every lesson has questions along with the activities and experiments, which the children have to answer by themselves. Please don't be over anxious to provide the answer, instead encourage the children to find the answer and later have a discussion on it.

In the book there are portions where the children can discuss about their experiences and also write about them. Here your participation is very important as you have related their experiences to environmental studies. In the end of each lesson a subtitle of "Find Nearby" is given where some extra interesting activities for the children are given. Please divert their attention to this also. May be on working with the students you may need to change the sequence of the lessons. You are completely free to do this.

Which portions in the book was difficult for the children? Or do you think these must be something new in it? Please try to find such lessons and kindly inform us about it.

In each lesson subtitles as 'Oral' 'Written' 'Exercise' 'Find Nearby'is given. From all these children will be able to express their views discuss observe and find solutions. It is necessary that all students even differently abled students are treated carefully. From this, we can know how much and where the child has learned.

When you go through the book or our teaching from the book you may come across something which you think is "not correct. Please inform us about these points. Do also tell us how we could rectify it. You may also come across points which you may appreciate. Do tell us about these also. All these experiences of yours would be helpful to enhance this book.

If you are with us in this journey of making Environment Studies interesting in general then togather we could achieve a lot.

With Wishes.

Director

State Council of Educational Research and Training
Chattisgarh, Raipur

The Total Skills Inclusive in The Text Material

We hope that the children of class five have learnt some 0f the basic skills in the earlier classes before they move towards more difficult skills. The effort is to continue the work started in the last two years and find new chances to understand the environment. The skills we have tried to develop in the children of class five are as follows:

(1) To observe, to recognise, to collect information and note it down.

- To identify qualities of a thing by touch and feel.
- To be able to observe minutely things like trees, plants, insects-animals, fruits and vegetables, seeds, soil etc. To be able to collect information about famous mountains building nearby, festivals etc. and be able to arrange the information in a tabular form.
- To go on a visit to banks, hospitals etc, to observe and understand their works and things related to these and develop a thought on their reasons.
- To be able to read a chart or map on the basis of symbols and understand their meanings. To be a part of the occassions, festivals, feats, journey in your region and be able to make observations on them or describe them. To be able to express it orally or in written form.
- To be able to observe minutely, express observations clearly and be able to attempt to reach to a conclusion.
- Observe by conducting a survey. Collect information and analyse the information. Classify and tabulate obtained information.
- Conduct experiments and make observations.
- Make connections on the basis of observations. For example- to establish a relation between roots and leaves, the relation between surface and friction.
- Make conclusions on the basis of observations.

(2) Differentiation, comparison, classification and generalisation.

- In relation to the information and observations listed or tabulated, to be able to find similarities or dissimilarities and to think about the reasons for these.
- To be able to list or tabulate facts and observations and hence be able to make groups.
- To recognise the sequence of an event, arrange the incidents in sequence and analyse facts to come to a simple conclusion.

(3) Pattern interrelations and development of imagination.

- To recognise the sequence or pattern in a social or natural incident.
- To understand the pattern using the experience and information.
- To understand the life cycle of trees and plants.
- To develop creativity by making models, charts etc.
- To read the information related to things found in nature like rivers, mountains, jungles etc. and be able to understand their relationship with human lives based on their own experience.

(4) Identifying problems, giving solutions and taking decisions.

- To understand the problems and to be able to identify facts which will help solve them.
- To understand the implication of written information or a picture and predict what would happen and be able to express this.
- Be able to understand by reading, observing or looking at a picture.
- To apply logic and explain situation things systematically to others. This also includes the reasoning.

(5) Reasons, effects and Solutions

- To understand ways to avoid and treat simple regional/local illnesses.
- The uses and importance of natural resources.
- Sensitivity towards physical handicaps.

(6) To make hypothesis, to inspect and experiment to understand information or processes.

- Follow instructions after understanding them, depending on the procedure, analyse and be able to reach conclusion.
- Depending on the incident, to be able to make hypothesis and be able to inspect it and reach conclusions.

(7) To be able to make or read a map or a picture.

- To be able to make different types of pictures. To understand the incidents shown in the picture and discuss among friends.
- To be able to read the maps of the district, state or country and be able to fill the information in an empty map.
- To understand the map and be able to answer questions based on it for example which place is in a particular direction in relation to another. Look at the map and find the answers according to the given instructions.

(8) Report writing and expressing oneself.

- To be able to express oneself with confidence in different way.
- Give opportunities for independent expression in written form. To be able to instruct friends to do some work.
- To be able to explain logically one's feelings, thoughts and opinions about ones experiences.
- To visit places of historical importance or ancient monuments in the nearby areas and do a project on them.
- To write a project and present it.
- To collect different crops, leaves, flowers and seed of trees and plants. To make a herbarium and arrange for a plant exhibits.
- To know the history of the state, the autobiographies of great men and the culture of Chhattisgarh and the country.

Environmental Studies

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CHAPTER-1

Let's Do A Survey

You may not find answers to certain questions in your textbook.But they do have answers.For eg.How many families and how many people live in your village?

You must be thinking why is it necessary to know the number of families and people living in your village. Have you ever thought of the different needs people have, eg. water, electricity, food, clothing, material for construction of houses, schools, hospitals etc. Greater the population, greater the needs. This would lead to scarcity of resources. It is not just enough to know the needs but it is important to find ways and means to fulfill it. Such information creates a base for solving many problems. To collect such information we carry out is a survey.



E	C 1: 5
Environmental	Studies-5

Many times your teacher also carries	out a survey.	Find out from	n them,
the kinds of survey they do?			
			,

Let's Find out

To find answers to such questions, let us carry out a survey. There are certain things that you already know, but with the help of a survey you'll get more information.

How to carry out a survey?

Firstly, divide yourself in groups of two's. Both partners should either be neighbours or live in the neighbourhood.

Each group should visit at least 8-10 houses in a colony or a lane and collect information. At least one group must visit a colony.

With the help of a survey, collect the following information

Table-1

S. No.	Name of the head of the family	His profession	No. of people in the family	Kuccha or a pucca house	People in the family use wood/gas/coal/kerosene/ cow dung cakes as fuel
1.					
2.					
3.					
4.					
5.					

Now look at the table and answer the question :

How many families are there in your locality?

110 11	many	iaiiiiics	are there	Jin your i	ocanty.		

Similarly, you can conduct a survey to collect information of many such things.

Survey of Crops

 Table - 2

 Find out the different crops grown in your area? When is it sown and rcaped/cut?

Name of the crop	Time of sowing	Time of Reaping

On the basis of the survey conducted, answer the following questions-

Name the crops sown during monsoons.		
How are seeds, leaves etc. obtained from these crops and how are thuseful?	ıey	
Name the crops sown after the monsoons.		

Survey on Pedestrians

One day, at a city crossing, Ramu and Iqbal counted the number of pedestrians. The survey was carried out from 4-5 in the evening. The number of pedestrians counted is given below. Counting was done like this- They would put a "/" sign for one pedestrian passing by. For four they put "///" this sign. For the fifth pedestrian, they drew a vertical line across it "////". Such signs are called tallies. eg. for 13 pedestrians, the tally sign would be-"////, /////"



Table -3

Area	Women	Men	Total
1. From clock tower crossing to Victory pillar	63	135	198
2. From clock tower crossing to Moti Garden Crossing	52	203	255
3. From clock tower crossing to Railway station	09	196	205
4. From clock tower crossing to Teli Bandha crossing	60	227	287
5. From clock tower crossing to Gol Bazar	120	254	374

Looking at the table tell-

Which area has the least number of pedestrians/ What could have been the reasons? Discuss.

Which area has the highest number of pedestrians?

.....

In which area did you find maximum number of female pedestrians?

What facilities should be provided to pedestrians on a crowded road so that they can walk safely? Give suggestions.

Survey regarding pedestrians with the help of your teacher.

Representation of the data through sketches.

During your survey, you have seen that you have collected many data related to the survey which you have shown in table-3. This data can also be represented through sketches. Here we will deal with bar diagrams and pie charts.

Bar chart

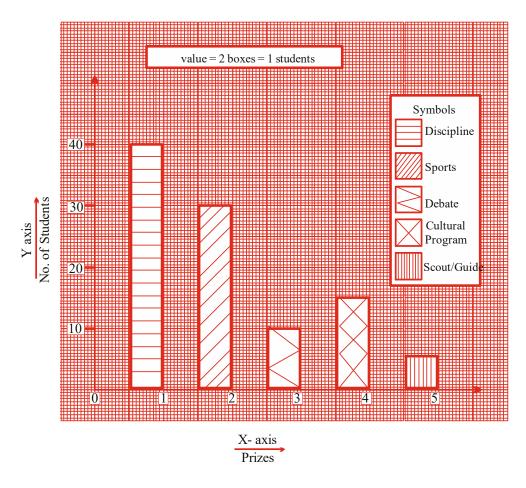
This is made on a graph paper. Look at the picture given below. You see it is made on a graph paper. It has two axis. The x-axis line is horizontal and the y-axis line which is vertical. X-axis always has to be greater than y-axis. Their ratio can be 4:3,5:4 or 6:4. We find standing bars of y-axis on x-axis. All these bars have the same width and are at equal distances on the x-axis. To indicate data through bar diagram or bar chart we must determine the size value. Here one example of data is shown through bar chart.

Example - Students of class V have been given prizes in different categories which is shown below.

S.N.	Prizes for	No. of students who received the prizes
1	Discipline	40
2	Sports	30
3	Debate	10
4	Cultural Program	15
5	Scout/Guide	5

In the figure the prizes are represented on x axis and the number of students receiving the prize is on y-axis. The size is determined as -[2 boxes = 1 student]

Graph - Bar chart



Pie charts -

Pie chart is another form of representing data. When the data is given in percentage we can easily represent it through pie chart. There are 360 degrees in a circle. Here 3600 is taken as equal to 100%. To make a pie chart the value of percentage is to be changed in to degrees. Come we will understand this with an example.

The result of Primary Education Certificate examination is as follows

S.N.	Class/ Grade	Percentage of students passed
1	1st class (A Grade)	20%
2	2nd Class (B Grade)	50%
3	3rd Class (C Grade)	30%

At first we will change the percentage of the students passed in to degrees,

Formula for Changing the value of percentage is $-\frac{360}{100} \times$ percentage

As
$$100\% = 360^{\circ}$$

So
$$20\% = \frac{360}{100} \times 20$$

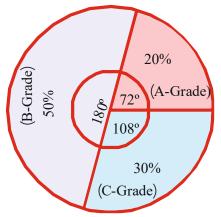
= 72°

in the same way

$$50\% = \frac{360}{100} \times 50$$
$$= 180^{\circ}$$
$$30\% = \frac{360}{100} \times 30$$
$$= 108^{\circ}$$

After changing the percentage to degrees, we draw a circle according to the available space.

We draw a circle which is clear on the given space and looks good. Now we draw lines measuring the degrees as per the values calculated.



Represent the data given below in a pie chart. Students of class 5 took part in the following games -

Kabadhi - 20%

Cricket - 30%

KhoKho - 40%

Badminton - 10%

What have we learnt?

Oral

1. Why is the survey done?

Written

- 1. While conducting a survey, what are the things to be kept in mind?
- 2. What information can be inferred with the help of family survey?
- 3. Draw tallies for 17, 25, and 10.

Find Around you

- 1. Apart from the surveys mentioned in the book, find out some other surveys carried out in your village.
- 2. Hobbies of the students of class-5 are as given below.

Singing 40 students

Reading 30 students

Acting 10 students

Gardening 20 students

Represent this data through a bar diagram or bar chart.



CHAPTER-2

Direction, Scale and Maps

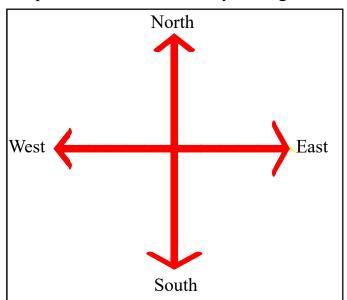
In class IV you have learnt about directions and maps. Do you remember, how you were taught to show directions on a piece of paper. Now you'll learn to make different maps.

Make your direction arrow

For this you can take any of these - an old copy, a thick book cover, an old postcard or a wedding card. On it, sketch direction arrows with the help of a pen or a pencil and write the names of the four directions.

Carefully cut the arrows that you have drawn.

You can now keep the direction arrows in your bag for reference.



Puzzle

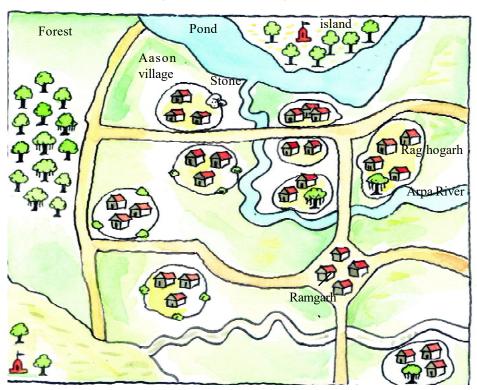
The teacher gave the students a puzzle to solve which is as follows-

Babbar Singh has hidden his treasure in an iron box and buried it behind a temple. He had put two locks on it. The keys were hidden in two different villages. To find the keys and reach the hidden treasure, the instruction were as follows:

If you take the road to the North of Ramgarh, you'll come across the Arpa river. On crossing this river, move to the East of the road and you'll reach Raghogarh. To the south of Raghogarh, is a banyan tree. One of the keys were kept in a box, in a hole in the banyan tree.

From Raghogarh, move to the north, and you'll come to a junction of three roads. From there, turn West, move further to the West and you'll once again find the Arpa River. To the West of the river and to the North of the road is Aasan village. To the East of Aasan village is a huge stone. Beneath the stone you'll find the second key. From Aasan village, move further to the West and you'll come to a dense forest. Just before the jungle begins, take a turn towards the North, go straight and you'll come to a pond. You can see a temple on a small island in the middle of the pond. Behind this temple is the hidden treasure box.

As per the instructions given above a map was made. On the map, village Ramgarh was marked. Though the other villages were drawn, they were not marked.

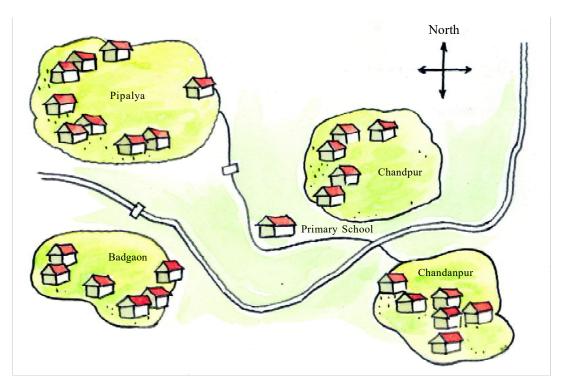


Now take the help of the direction arrow. On the map given, draw arrows to show the route you'll take. Identify Raghogarh and write its names in the map. Also mark the two places where the keys were found.

Draw a key and a treasure box where the treasure was found.

A Map of Four Villages

Complete the map given below by indicating a narrow path connecting Chandanpur to Chandpur.



On the map given, look for the narrow path which goes along the western edge of Chandanpur to Badgaon.

With the help of arrows, mark the river which flows along Pipalya, touches Badgaon and then passes through Chandpur and Chandanpur.

With the help of symbols draw a jungle in between Pipalya and Chandpur.

Now, draw a narrow path from Chandpur to Badgaon in a way that the Primary school lies on its way.

Also show a hospital in the North of Chandanpur.

Sketches and Maps

Till now, you must have drawn many sketches. Normally, sketches are an imitation of the real objects.

But on a map, the things are shown with the help of signs/symbols.

In class IV lesson, 'Aazad Made a Map', many signs and symbols were used.

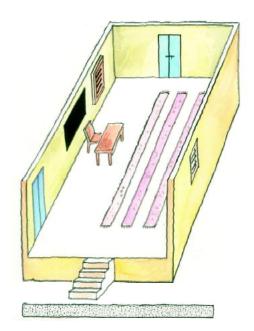
Can you see the sketch of a classroom?

It shows all the things used in a classroom.

If you have a view of the classroom and the things kept, from the ceiling, how would they look like?

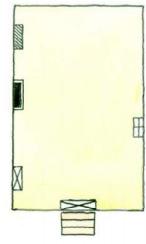
The map is always drawn showing an aerial view.

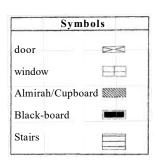
Compare the given two pictures. From the picture given below, can you tell how the classroom is arranged?

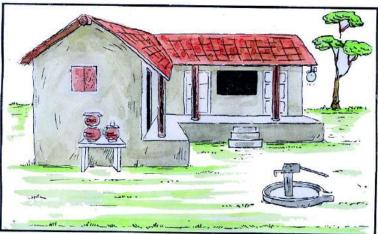


How is the Map Made?

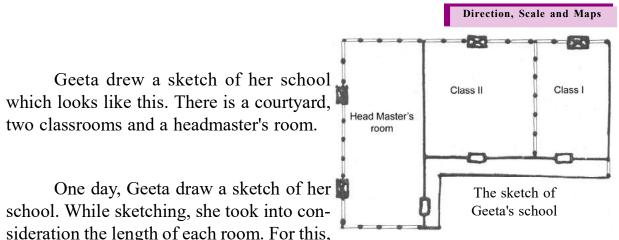
When we draw a map, it is small in size. For this, we use a scale.







Picture of Geeta's school.



she collected match-sticks. She measured the three rooms with her footsteps. Each match stick indicated a footstep which was taken to measure the length of the wall. Similarly, she arranged matchsticks to indicate the length of the other walls.

On the basis of the sketch drawn by Geeta, tell the following:

Class I is	footsteps in length and	footsteps in width
Class II is	footsteps in length and	footsteps in width
Headmaster's room width	is footsteps in length and	footsteps in
Courtyard is	footstens in width	

You have studied the sketch which Geeta had made of her school. Now, you make a small sketch of your classroom. For this, you'll have to measure the length and width of your classroom.

Give an approximate account of the length and breadth of your class-room.

Measure it with your footsteps and make a note of it. Now you'll have to change the footsteps into smaller scale. For this, we'll use match-sticks.

To draw a sketch of your classroom, consider a matchstick equivalent to the measurement of one footstep. This is going to be your measuring scale (1 match stick = 1 footstep)

Take matchsticks equal to the number of footsteps taken to measure the length of your classroom. On a big sheet of paper arrange the matchsticks in line, leave no space in between. Thus, the length and width of your classroom shall be converted into a smaller scale using matchsticks.

First, let's draw the wall to the north of the classroom with the help of matchsticks.

Measure the wall to the North with your footsteps and convert it into a smaller scale using match sticks.

How many matchsticks were used to measure.

- a) the wall to the north _____
- b) the wall to the east

Now calculate the length and width of the wall to the south and the west, in terms of matchsticks. In this way, make the four walls of the classroom with the help of matchsticks. Now draw a line on all four sides with the help of a pencil and remove the matchsticks.

Now indicate the things kept in the room, using symbols.

Using the same technique, prepare a sketch of your school.

Till now, you've used your footsteps as a tool for measuring length. Is this an accurate way of measurement.

For accurate measurement, what tools should be used? Discuss with your teacher and write.

What have we learnt?

Oral

- 1. In which direction is your house from the nearest crossing of your town or village?
- 2. You have solved the puzzle. Where was the treasure box?

Written

- 1. Sonu measured his room. The length being 10 feet and width 8 feet. He has to draw its sketch. The length of the sheet of paper is 5 erasers and width 4 erasers. What measurement scale should he take?
- 2. Draw symbols for the following- well, river, path, temple, jungle and school.

Look around you

Draw a map of your Village Panchayat Hall, Hospital or a Playground.

Draw a sketch of the things of daily use as books, pen, pencil, rubber, chair, table, school bags etc. or draw the sketch of a part of your school. Hang this picture in your classroom.

Students can make sketches of any other items of their interest.



CHAPTER-3

Roots and Leaves

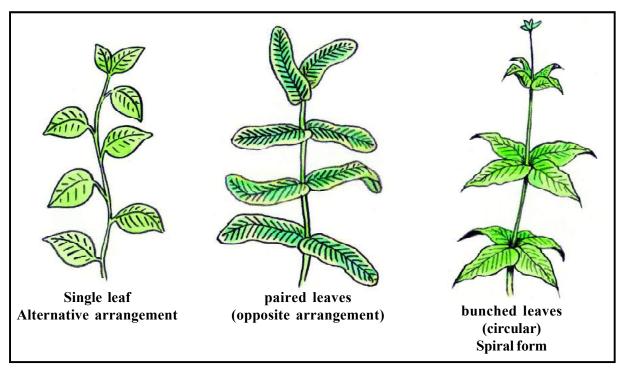
Looking around, we get to see a lot of greenery around us. The plants and trees, especially the leaves, contribute in making our surroundings green.

To have a look at these plants, go out to the nearby fields, grounds and orchards with your teacher. Make sure, you carry an old newspaper, a note-book, a pen and a bag with you.

Now divide yourself in groups of 4-5.

Arrangement of the leaves

Observe how the leaves are arranged on the plants and trees. Also observe whether the leaves on different plants grow in a particular order or grow just here and there.



Leaves on branches grow in three different ways. In some plants, you'll see only one leaf in one place. This type is called single leaf (or alternate arrangement).

In a few plants they come out in pairs. This kind of arrangement is called 'paired arrangement' (opposite order). On the other hand, there are few plants which have leaves growing in a bunch at a single place. This is called 'bunch or assemblage' (circular arrangement).

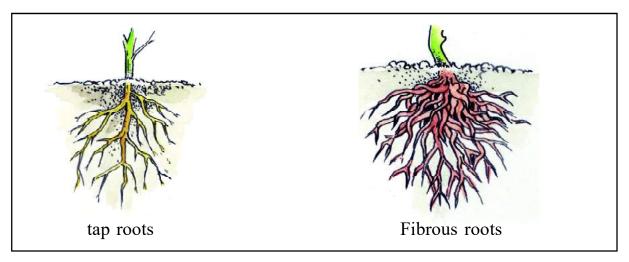
Now each group should collect different kinds of leaves fixed to tender branches. Take care you cause no harm to the plant. Also uproot 8 to 10 plants.

Make sure you uproot only the wild plants. Don't harm plants which are useful to us.

Spread the leaves and the uprooted plants carefully between the pages of a newspaper and press them gently. Write the name of the plant from which the leaf is taken. Similarly, write names of the plants you had uprooted. If you are not familiar with the name of any of the plants, ask your teacher, or a gardener or a farmer or a knowledgeable person .Still, if you fail to identify give the plants the identity-A B C D.

Study the roots

After coming back to your class, each group should sit together in a circle. Observe the roots of the plants you had uprooted and draw them in your note-books.



Are the roots similar in each plant?

What difference can you observe in the two different kinds of roots shown above?

Compare

Looking at the picture write which category the roots of the uprooted plants belong and tabulate them accordingly.

Table 1

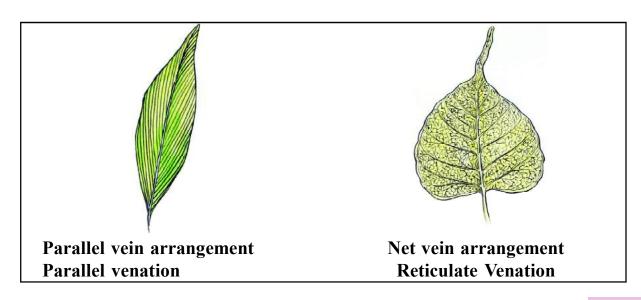
S.No.	Name of the plant	Tap root	Fibrous root
1.			
2.			
3.			
4.			
5.			

Vein arrangement in leaves

Let us find another interesting fact about leaves. Carefully observe both the sides of the leaves. You'll see thread like veins in the leaves.

Are these veins seen all over the leaf?

The arrangement of veins in leaves in called 'vein arrangement' or venation. In the picture given below observe how the veins are arranged in a leaf.



Environmental Studies-5

Which kind of Venation (vein arrangement) can you observe in the leaves brought by you? Match the leaves to the picture given and write them in the table given below. Mention which category each falls into.

Table 2

S.No.	Name of the plant	(Parallel vein arrangement) (Parrallel Venation)	(Net vein arrangement) (Reticulate Venation)
1.	Mango		Reticulate
2.			
3.			
4.			
5.			
6.			

The relationship between roots and leaves

Till now you've learnt about leaves and roots. Now we'll try to find out the relationship between the two.

Observe the plants you had uprooted once again.

Now tell which plant has ____

What kind of Venation parallel or reticulate (vein arrangement)?

What kind of root, Fibrous or tap?

Till now you've observed the roots and the leaves and have filled Table 1 & 2. On the basis of this now fill in the table on the next page.

Table 3

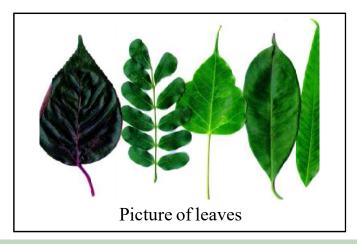
S.No.	Name	Venation (Vein Arrangement)		Туре о	f Root
	of plant	Parallel	Reticulate	Tap	Fibrous
1.	Paddy/rice	Parallel			Fibrous
2.					
3.					
4.					
5.					

Study the table given above and answer the following questions:

•	8	8 1
What Vena	` 0	ement) do the leaves of plants with tap
What Venar	` 0	ement) do the leaves of plants with fibrous
•		lationship between the roots of plants and Write in your own words.

Exhibition of leaves

Exhibit the leaves you had collected. Spread the leaves between a newspaper and put some weight on them. After every 2-3 days keep changing the newspaper. While changing, take care not to break the leaves. When the leaves are completely dry, paste them on a hard board and write their names below.



What have we learnt?

Oral

- 1. Which part of the plant is under the soil?
- 2. In which part of the plant are the veins found?

Written

- 1. With the help of a diagram, explain the different kinds of roots.
- 2. Name the different Venation (vein arrangements) found in leaves.
- 3. What is the difference in the Venation (vein arrangement) of a peepal leaf and a grass leaf?
- 4. In which order are the leaves arranged on the branches of the following plant? Draw them?

Mustard

- i. Channa / Bengal Gram
- iii. Rose iv. Peas
- 5. Name the kind of root and the Venation (vein arrangement) in leaves found in the following plants
 - i. Tomato ii. Wheat
 - iii. Bean iv. Marigold
- 6. What is the relationship between Venation (vein arrangement) in leaves and the kinds of roots?

Look around and find

- 1. Look for plants with colourful leaves. What kind of vein arrangement do you find in it?
- 2. Look for plants which secrete milk like substance.
- 3. Look for any two plants with spines in their leaves.



CHAPTER- 4 Our National Symbols

India is a land of diversity. People of different religions, languages, dresses stay together as one - 'Indians'. Despite these differences, there is only one National Symbols eg. - National Flag, National Emblem, National Anthem, National Song, National Bird- Animal and flower etc.

It is the duty of every citizen to respect the National symbols. These symbols bind the entire Nation into one.

Our National Flag

Our National Flag is tricolour. It is a symbol of Nation's pride.

Write the three colours in our National Flag

 	
On what occasions is the National Flag hoisted in your	
school?	
How do you pay respect to your National Flag?	

Environmental Studies-5

Each colour in our National Flag symbolises a different feeling-

Colour	Feeling symbolised
saffron	Courage and Sacrifice
white	Truth and Peace
green	Faith and Prosperity

Count and write the number of spokes in our National Flag?



In the centre of the National Flag is the wheel which symbolises motion, progress and change.

What i	s the shape of our National Flag?
What i	s the colour of the uppermost strip of our National Flag?
	ut from your elders, what are the things one should keep in mind while g the National Flag.
1.	
2.	
3.	

Our National Emblem

Look at this picture carefully. This is our National Emblem. It has been taken from the iron pillar at Sarnath, built during the time of Ashoka. Below it is written "Satya Meva Jayate", which means "Truth shall always triumph."

Look at the pictures given and tell-



How many lions are there in our National Emblem?

Which sign stands common in our National Flag and Emblem?

Which two animals can you see on both sides of the wheel in the National Emblem?

Where else have you seen the National Emblem?

On a one, two, five rupee coin, see the side with the impression of a lion. How many lions can you see?

There are four lions in our National Emblem but only three can be seen. To understand this let us do an activity.

Activity

One of you should stand in a place. In front of him/her, at a little distance away, four of your other friends should stand with their backs to each other. Now ask your friend standing alone - how many faces can he see? Others should take turns to see the number of faces visible. Similarly, the four lions in the National Emblem stand facing their backs towards each other. From whichever side we look at, we get to see only the three faces of the lions.

Our National Anthem

You must have memorised Jana Gana Mana......

This is our National Anthem, It was composed by Rabindra Nath Tagore.

Now tell-

How should we stand while singing the National Anthem?

Environmental Studies-5

Fill up the table given, with the states, mountain ranges and the rivers mentioned in the National Anthem.

S.No.	Name of rivers	Name of Mountains	Name of State
1.			
2.			

Our National Song

Vande Mataram.... is our National song. Its lines were taken from a book titled 'Anandmath' written by Bankim Chandra Chatterjee. This song instilled the feelings of patriotism and freedom in the hearts of the Indians, during the Indian freedom struggle.



When do you sing the National Song in school?

Our National Animal

The tiger is our National animal. It is a symbol of strength and agility. In the



past, India could boost of many tigers. But their numbers have dwindled fast . So, as an Indian, it is our duty to save our National Animal.

Which project has the Government of India taken to save the tigers? Find and write.

Our National Bird

Have you seen 'the peacock' in a jungle or a zoo? This is our National bird. It is famous for its colourful feathers. Find out more about this animal- for eg. what does it eat? Where does it live? etc.

What is the difference between a peacock and a peahen?



Our National Flower

You must have seen the lotus flower in ponds and tanks. This is our National Flower. How is the stem and fruit of a lotus used?



For the entire country, there is just one National Flag, National Anthem, National Song and National Emblem. But different states may have their own state bird, animal, flower etc. The state animal of Chattisgarh is the wild buffalo and its state bird is the Pahari Maina.



What have we learnt?

Oral

- 1. On what occasions is the National Flag hoisted?
- 2. From where is our National Emblem taken?
- 3. What is written beneath the National Emblem?

Written

- 1. Describe the significance of the National Flag?
- 2. Why is it important to save tigers?
- 3. Name our National Symbols?
- 4. What was the importance of our National Song 'Vande Mataram' in the freedom struggle?
- 5. Write the name of the state animal and state bird of Chhattigarh.

Find Around you

- 1. Have a collection of stamps of different countries with their National Flag, flower and animal on it.
- 2. Make a chart of pictures of different animals, birds, trees and flowers of different states of India and display it in your class.

S.N.	Name of stateState animal	State Bird	State Tree
1	Chhattisgarh Bison	Pahari Myna	Teak
2			
3			
4			

CHAPTER- 5 Mosquitoes and Malaria

After many days, Chandu came to school today. He looked quite weak. His friends enquired, what had happened to him. He told them that he had been suffering from malaria.

The children asked the teacher how malaria is caused? The teacher said, "Let us ask Chandu first.



Chandu told them that at first he started shivering with cold, followed by fever and body ache. When he was taken to the doctor, the doctor pricked a needle in his finger to take blood sample for testing. He spread the blood on a glass slide and kept it in a box.

The doctor asked them to take the report the next day. The next day, while giving the report, the doctor confirmed that Chandu was suffering from malaria and gave him some tablets.

The teacher asked Chandu - What kind of needle did the doctor use to take the blood out ?

Chandu replied that the doctor took a new needle.

The teacher told them that these days for giving an injection or for taking blood sample disposable needles are used.

Environmental Studies-5

	nyone at home stagnosed?	uffered from n	nalaria? Wh	at was done af	ter malaria
What and w	are the common	symptoms of	malaria? Di	scuss it with yo	our teacher

Mosquitoes and Malaria

You all must have suffered mischiefs of the mosquito. They buzz around whole night. They bite badly and disturb our sleep many times.

Malaria spreads by a particular kind of mosquito. The mosquito that bites us is female Anopheles.

The female mosquito sucks blood from living creatures like - cows, oxen, goats and humans. When it bites some one it sucks the blood very quietly. It is only when it finishes sucking blood that we get to know of the bite.

Can you name some more creatures which suck blood?

Do they also spread diseases? Ask your teacher about it?

While sucking blood, the female mosquito pricks its sting in to the skin. To prevent the blood from clotting it injects its saliva. The parasite which causes malaria can be present in this saliva. If these germs enter human blood through the saliva of mosquito the person may suffer from malaria in a few days. Male mosquitoes cannot bite as their sting is not sharp and piercing. It is necessary for the malarial parasite to enter female mosquito again if it has to complete its life cycle.

If a person is already infected with germs causing malaria and is bitten by female mosquito, then the germs are passed on into the body of the female mosquito. On biting another person, it transmits the germs into this body, thus, a female mosquito spreads the germs of malaria from one person to another.

After the bite of a female mosquito, when these germs enter a human body, it takes 10-15 days for malaria symptons to appear.

What should one do if one is suffering from malaria?

If a person is shivering with cold and has fever, he/she should immediately be taken to the hospital.

How is malaria diagnosed in the hospital? Find out from a doctor or a health worker.
Find out where malaria is tested in your area?
It is important for a person suffering from malaria to take a full course of treatment. If the full course is not taken it cannot be cured completely. The doctors advice that while taking medicines for malaria, the patient must eat properly and have lots of fruits, milk and water. At times a person suffering from malaria may vomit. But one must not stop eating for fear of vomiting.
How to protect oneself from malaria?
To protect oneself from malaria, it is important to prevent the breeding of mosquitoes.
In your area, is any insecticide sprinkled to kill mosquitoes?
In which season are the mosquitoes mostly found in your area? Think and tell?
Find out the places in your surroundings where mosquitoes are found in plenty?

Study the mosquitoes

Catch hold of a big mosquito.

What all can you see in a mosquito?

Now look at the mosquito with a hand lens.

How many legs and wings does a mosquito have? Count and write.

Draw a mosquito in your note-book.

Do you know where mosquitoes lay eggs? In your surrounding area, look for a place where you can find stagnant water. Observe this water carefully.

In this stagnant water, can you see a creature similar to the one shown in the picture above.

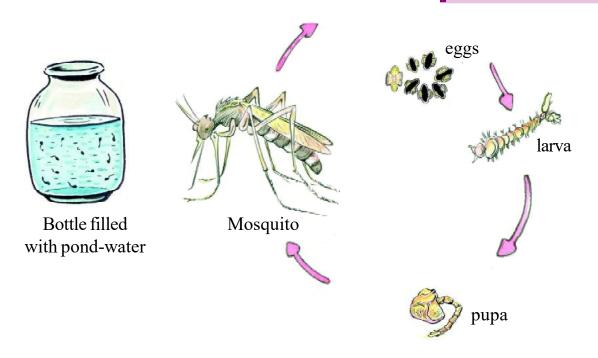
Draw this in your note-book.

Take an empty glass bottle and fill it with water from a pond. Make sure that the water filled in contains larva too.

Now tie the mouth of the bottle with paper or polythene and make holes for the air to pass.

Keep the bottle in a safe place. Now watch the bottle everyday. Given below are the different stages of the life cycle of a mosquito.

Can you find any mosquitoes inside the bottle?



Life cycle of a mosquito

By now you must have understood where mosquitoes lay their eggs.
By only killing the mosquitoes, can you get rid of them? Or is it necessary t kill the eggs & the larva too? Discuss in class and write.
Write the ways in which mosquitoes can be killed?
What should be done to prevent the breeding of the eggs and the larvae of mosquitoes? Discuss with your friends and write.
What efforts are made in your area by the Health Department to get rid o mosquitoes?

While sleeping at night, many people use mosquito nets to prevent mosquito bite. Some cover themselves with a thin cloth.

You must be using other ways of protecting yourself from mosquitoes. Write about them

Apart from malaria, mosquitoes are carriers of other diseases as well. Discuss it with your teacher or elders.

Why was glucose drip given?

Other than malaria another disease is vomit and loose motion.

All day long Neetu was vomiting continuously; she was also having loose motion. Her mother made a drink with equal amount of salt and sugar dissolved in water and gave it to Neetu. On finding no betterment in her health, her parents took her to the doctor. The doctor asked them to admit her in the hospital and to give her glucose drip. In school, during sports teacher has given glucose drink but what was glucose drip and why? Doctor said "Your body is weak as food and water is not retained in your body. You have an upset stomach. With the glucose drip, you will get strength without food and water."

- Was you or anyone in your family given glucose drip? When and Why? Tell your friends about it?
- Why is sportsmen asked to drink glucose from time to time?

What is Anemia?

Deficiency of haemoglobin or iron in blood is known as anemia. To remove deficiency of haemoglobin or iron doctors advice to give jaggery (gud), gooseberry (amla) and green leafy vegetables along with the medicines. The normal range of haemoglobin in blood is 13.5 to 17.5gm per decilitre for men and 12.0 to 15.5gm per decilitre for women.

Ask any doctor or your elders and find out which food item have iron in them.

What have we learnt?

Orals

- 1. Name any one disease caused by mosquito bite.
- 2. What steps will you take to prevent mosquitoes from breeding in your area?
- 3. Name the different stages in the life cycle of a mosquito.

Written

- 1. What is the cause of malaria?
- 2. How can we protect ourselves from mosquitoes?
- 3. What are the main symptoms of malaria?
- 4. What must one do if suffering from malaria?

Find and do

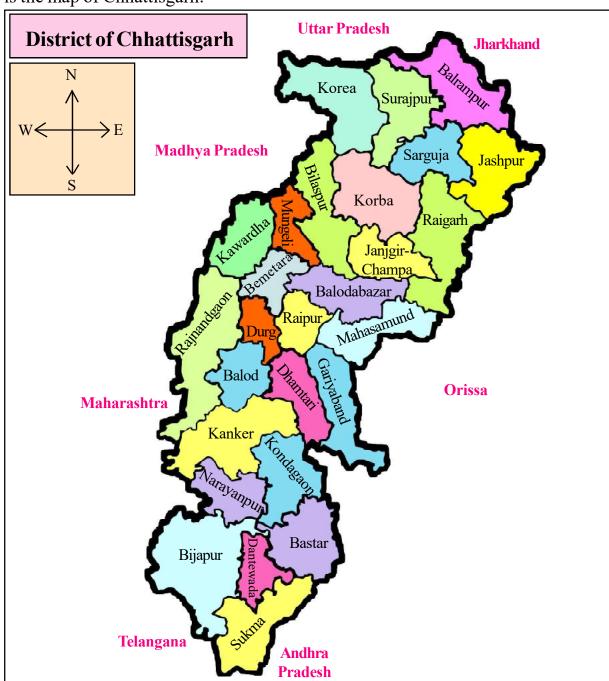
1. What steps should be taken to prevent mosquitoes from breeding?



CHAPTER-6

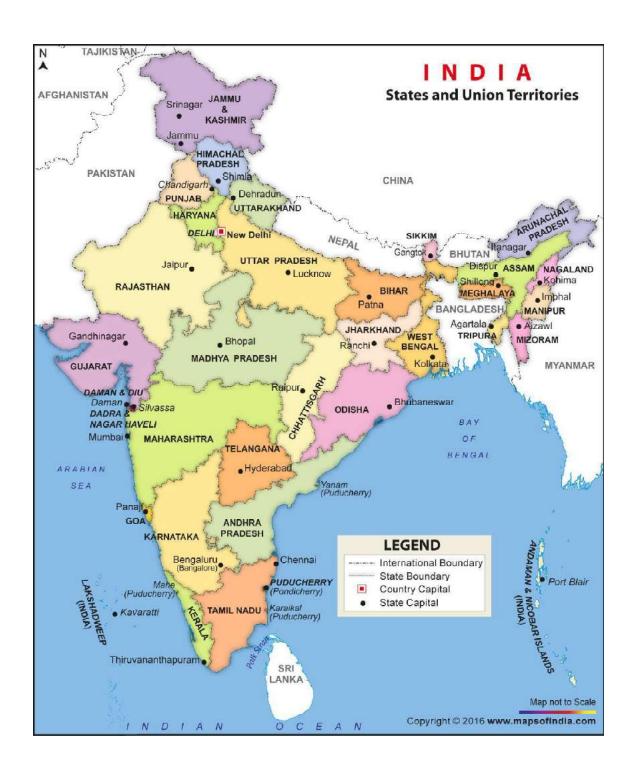
The Map Speaks

The town/village we live in is a part of the state of Chhattisgarh. Given below is the map of Chhattisgarh.



Environmental Studies-5

If somebody comes to visit your district, then in your opinion, what are the places one should visit and why?



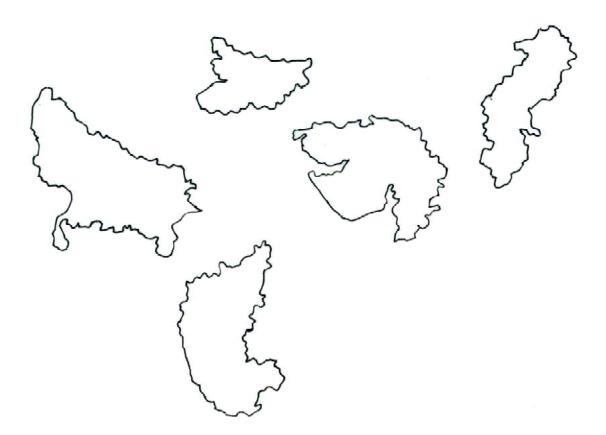
Map of India

Though India is a vast country which is hundreds of kilometres in length and width, it is shown in a small size.

On the previous page is given a map of India. You must have seen this map earlier. Tell where you've seen it?

There are many colonies in our villages and towns. Similarly, there are many states in our country. In the map given, you can see all the states of India.

Identify the shapes of different states given below and write their names?



Which are the neighbouring states surrounding the state of Chhattisgarh? Look at the map, mention the direction of these states.

North	 East	
South	 West	

Environmental Studies-5

Look at the lower most tip of India on the given map. There is no state or town shown beyond India's borders? It is because there is sea on the southern side of India.

Identify the sea on the sides of India and colour it blue.

On the map of India, you can see small dots. The dots indicates the location of the capital of that state.

Chhattisgarh is surrounded by land on all sides. Is it the same for Andaman and Nicobar Islands?

Nicobar is surrounded by water on all sides. A piece of land surrounded by water on all sides is called an island. Look for more such islands in the map.

What have we learnt?

Oral Questions

- 1. When was the state of Chhattisgarh founded?
- 2. How many districts are there in Chhattisgarh?
- 3. On the confluence of which three rivers is the Rajim pilgramage situated, in Chhattisgarh?

Written

- 1. Write the names of the neighbouring states of Chhattisgarh. Give their directions too.
- 2. Write the names of the coastal states of India.
- 3. On a map of India, mark the states and their capitals.

Look around

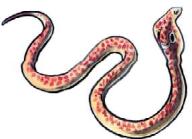
How many states and union territories are there in India? Make a list of their names with their capitals.



CHAPTER-7

Snakes

We see different kinds of creatures around us. Some are small, some big, some crawl, whereas some run very fast. There are some animals whose name itself scares people. One of them is the snake.



After all, what is there in a snake?	
Why are we scared of snakes?	
Where do snakes live?	
Draw a snake you've seen.	
Have you ever come across a snake in your house or your frienneighbourhood?	nd's house or in the
If a snake is seen in a house, what do people do to chase it out	t?
What do people do if a snake bites? Discuss and write.	

You yourself must be having several questions in your mind regarding snakes					
Make a list of some such questions that comes to your mind.					
Find out from your teachers or elders as to how many kinds of snakes are found in your area?					
Can snakes hear?					
Have you ever seen a cobra who seems to be dancing to the flute played by the snake charmer?					
Do, you think snakes can hear?					

Actually, the cobra does not dance to the music of the flute. But, it dances as per the movement of the flute. The cobra considers the flute a threat to him. It can swing its head even at the sight of a moving stick or a piece of cloth.

To find out whether a snake can hear or not, a scientist conducted the following experiment.

- He bandaged a snake's eyes and played the flute in a room. The music of the flute had no effect on the snake.
- Then he pulled a cot kept on the floor of the room. The snake immediately raised its hood.
- He then removed the bandage from the snake's eyes and pretended to play the flute in front of the snake. The snake started swinging to the movement of the flute.
- He conducted the same experiment using a stick instead of a flute. The snake still moved in the same way.



On the basis of this experiment, think over the following questions.

Do snakes dance to the tune of the flute?

When farmers and labourers go to the jungle, they carry with them a stick or a long staff. This, they bang on the ground while walking. People believe that by banging the stick or the long staff on the ground, the snake senses danger and moves away from there.

Can the snakes hear the banging of sticks or long staffs on the ground. Find out from the farmers in your village.

Kinds of Snakes

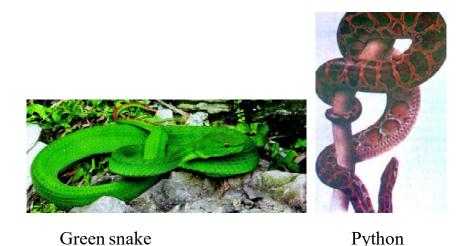
Snakes are of two kinds:- a) poisonous, b) non-poisonous

The snake, on biting a person, injects poison into his body through its teeth which is hollow like that of a needle of an injection. In its upper jaw there are two pouches of poison.

When poisonous snakes bite they inject poison into a person's body. That poison can at times be fatal.

There is no poison in non-poisonous snakes. They only bite when they are teased. But their bite not fatal.

Let's identify the non-poisonous snakes with the help of pictures.



41



Pitpiti



Water snake

Poisonous snakes

Cobra- This brownish black coloured snake can be found, all over India. It can be easily identified because of its hood. It is a deadly snake.

The symptoms of a Cobra bites are as follows:

- The bitten place gets swollen and sometimes there is a wound.
- The bitten person finds it difficult to see and his/her hands and feet start trembling.
- The tongue thickens and the person finds it difficult to speak. Froth starts coming out from the mouth.
- The person suffering from cobra bite feels sleepy and finds it difficult to breathe.

Ordinary Krait (करेत)- The Krait comes out at night.It is extremely shiny and has white diagonal stripes. Apart from this, it has a row of hexagon shaped scales. They live beneath stones, between bricks in brick kilns, in the piles of fire-woods and cowdung cakes kept in the fields.





The symptoms of its poison is more or less the same as that of a Cobra, except that there is no swelling or wound. At times, the symptoms appear very late and suddenly the patient feels restless. Once the poison of krait reaches the body, the victim experiences severe pain in his stomach and joints, followed by vomitings.

Krait normally bites at night. Because the symptoms appear very late, the patient, at times go unnoticed. It is said that a person bitten at night by this snake, does not live to see the morning sun. Hence, immediate treatment is a must.

Viper- Viper is approximately 1 meter long and has a flabby body. It is light

yellowish brown coloured and has a chain of round rings on its body. It has a pointed head and a thin neck. It is lazy and lies coiled up in one place. It bites farmers when they work in the fields during monsoons. Many bite cases of viper during the harvesting of soyabean, moong, urad etc. Its colour helps it to camouflage in the dried leaves and crops.



The viper's poison affects the blood

- Its poisonous teeth are big, so they leaves a deep wound.
- The blood flows out continuously from the wound.
- If timely vaccination is not given, the affected part gets infected.

Phoorsa/ **Saw-Scaled viper-** It is a small sized snake. This uneven-scaled snake has big eyes, broad head and a heavy body. It is commonly found in open places.

The symptoms of its poison are quite similar to that of a viper's. In comparison to the other poisonous snakes it ejects less poison and hence, its bite is not fatal.



What should and what should not be done if bitten by a snake?

- Do not let the bitten person get excited. He/she should remain calm.
- Tie a piece of cloth, above and below the bitten place. Tie it in such that the index finger be put through.
- Give the person hot drinks like tea, coffee etc. Give him a pain killer and mental support.
- Rush the patient immediately to the hospital and do not waste time on charms and incantations and getting the evil spirits expelled.
- Do not let the person run, fall asleep or ride a bicycle or a motorcycle.

Vaccination given to neutralize the effect of a snake's poison is readily available in the hospital.



Is the vaccination to neutralise the effect of snake's poison available in your nearest government hospital.

If somebody is bitten by a snake, advice to rush him to the hospital.

What do people who perform charms and incantations do to a person bitten by a snake? Find out. If bitten by a snake, do not believe in expelling the evil spirits.

In every village or town you'll come across someone who treats people bitten by snakes. Charms are commonly used to neutralize the affect of snake's poison. There are people in town who claim to neutralize its effect on telephones too. Such names can be seen on name board hanging here and there giving their contact address and numbers. Though people who indulge in driving away evil spirits claim to neutralize the snake's poison, many a time they fail to save the lives. Now tell, if a person has been bitten by a non-poisonous snake, will the poison enter his/her body?

If a narron hitton by a non noisonous snake is treated by a narron who

If a person bitten by a non-poisonous snake is treated by a person who claims to be an expert in driving away evil forces, will he survive or not?

When a person bitten by a non-poisonous snake is taken to the hospital, he is not given any anti-poison vaccination. Only his wounds are treated and he given pain killers to over come the pain caused due to snake bite.

Find out whether a person bitten by snake was cured after being taken to the person who drives away the evil spirits?

At times a person bitten by a non-poisonous snake dies or falls unconscious due to shock.

Snakes our Friends too

Snakes are great friends of farmers. They eat the rats and other creatures who destroy the crops in the fields. Find out in what ways are snakes helpful.

What have we learnt?

Oral

- 1. How can we protect ourselves from snakes?
- 2. Are all snakes poisonous?

Written

- 1. What should one do if bitten by a snake?
- 2. Classify the snakes mentioned here into two categories- poisonous and non-poisonous.(Black cobra,Python Saw-scaled viper, Two headed snake, Krait viper,Green snake, Cobra)
- 3. Draw a Cobra and write its special features.
- 4. Write the difference between a viper and a karait.
- 5. What are the symptoms of snake bite?

Look around

- 1. Find out from your elders, snakes found around you.
- 2. Who are the person other than snake charmers who depend on animals for their livelihood?



CHAPTER-8

Bank

Everyone is engaged in some work or the other. Whether one is an artisan or a farmers, labourer or an industrialist, employee or an officer; all are paid wages for their work. Some amount is spent on household necessities and the balance money is kept as savings for the future.

Find out where people deposit the money that they save?



One day Lalita went to a bank with her mother. Her mother took a withdrawl form from the clerk, filled it up and submitted it. The clerk after receiving the form gave her mother a coin like token. After some time a clerk called out her mother's name from the Cash cabin box. Lalita's mother gave him the token and she received the money in return Lalita wanted to know how money is deposited and withdrawn in a bank. Her mother told her that first she should open an account before by depositing some money. The money desposited is safe in the bank. In times of need the money can be withdrawn.

wnere ao you	nave a bank?	wnat is the name	e of the bank?	

Do your parents have an account in a bank?

Ramesh's mother is a teacher in a school. Every month her salary is deposited in the bank. Whenever she needs money, she goes to the bank and withdraws it.

Your money desposited in the bank is not only safe but you also earn an interest on it. eg. Ramesh's mother has Rs. 5000/- in her account. She'll get interest on it. If this amount is kept at home, it will neither increase nor will it be safe.

Discuss with your parents or teacher 'what is interest?' and write what you have understood.

Any one can open an account in the bank.- a shopkeeper, green grocer, labourer, officer, lawyer, doctor, farmer etc. At the time of opening the account, a passbook is issued. It has all the details of the money deposited and withdrawn.

Find out from your elders or teachers, the necessary documents required at the time of opening an account.

An account in which one can withdraw the money as and when he/she wishes is called 'Savings Account'. The pass book for such an account has 'Savings Account' written on it.

It is a rule that the "Saving Account" must have a minimum amount in it.

What is the minimum amount which is to be compulsorily deposited in the banks of your town/village? Find out from your teacher.

Faiza's father is a sculptor. He sells beautiful things made of clay. He deposits the balance money left after the household expenses in the bank. As he has been continuously depositing his savings in the bank he now has Rs. 10,000/- in his account. A bank clerk advised him to deposit his saving in Fixed Deposit for a fixed period of time. He also told him that he would get more interest in fixed deposit. Faiza's father, as advised by the clerk, deposited his saving in Fixed Deposit for a period of five years. After five years, he got his principal amount of Rs. 10,000 back along with a good amount of interest. This is how the Principal amount keeps increasing.

What is the maximum limit of keeping your money in fixed deposit

What are the other	accounts that ca	n be opened	in the	bank?	Find	out.

How to deposit and withdraw money from the bank?

There are different forms for withdrawl and desposit of money.

Given below is a form for depositing money. Read it. If someone has an account in the bank and wants to deposit money, he will have to fill up this kind of form.

Fill up the given form yourself.



					QUE DEPOSITED		
होन से बेंक पर आहरित हैं DRAWN ON BANK	TIMI BRANCH	ち OF CHEQUE 電φ 事。 CHEQUE NO.	राशि	मृत्य वर्ग	नोट/सिकॉ की सं. No. of Pieces	राशि ANC	
			ALUTTER!	Description of	2000		
					1000		
					500		
					100		
					50		
					20		
					10		
					5		
					2		
					1		
					सिक्के COINS		
					कुल/TOTAL ह		

Get a deposit form from a bank nearby and try to fill it.

There is another rule in the bank- A third person can deposit the money but cannot withdraw it.

Environmental Studies-5

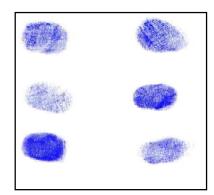
If at all the money has to be withdrawn, it cannot be possible without the signature of the accountee.

A copy of specimen signature of the accountee is with the bank. Illiterate people have to give their thumb impression. Whenever a person withdraws the money, his signature or thumb impression is verified. If the signature or the thumb impression do not match the specimen signature/impression, the bank refuses to give the money.

People who are illiterate put their thumb impression,in place of their signature.

Does the thumb impression vary from person to person?

You along with your five friends take chances to put your right thumb impression in a copy. Now, carefully observe the thin inner lines.



Are these thin lines the same in all the impressions?

Another important thing is that no over writing or cutting is permitted in any of the bank forms. If any overwriting is done, the form is rejected. Hence, the form should be carefully filled up.

Withdrawals using a Cheque

There is another provision for withdrawing of money. For this the accountees or account holders are given cheque books. If the accountee has to make payment to somebody instead of giving him money he can give him a cheque of the same amount. For example. Faiza's father has to make purchases for his work, he does not carry money but a cheque book. He makes his payments by cheque. Similarly, out station payments can also be made by cheque and delivered by mail.

Money transaction by shopkeepers, traders etc. is made by cheque. For eg. a trader Govind Singh, gives a cheque of Rs. 20,000 to Nirmala Sahu. This cheque