GOVERNMENT OF KARNATAKA

ENVIRONMENTAL STUDIES

TEXT CUM WORK BOOK

(REVISED)

PART-1

ENGLISH MEDIUM

@KTBS NOT TO BE REPUBLISHED

3

THIRD STANDARD

KARNATAKA TEXTBOOK SOCIETY (R.)
6th Cross, Malleshwaram,
Bengaluru - 560 003

Preface

The Textbook Society, Karanataka has been engaged in producing new textbooks according to the new syllabi prepared which in turn are designed based on NCF - 2005 since June 2010. Textbooks are prepared in 12 languages; seven of them serve as the media of instruction. From standard 1 to 4 there are the EVS, mathematics and 5th to 10th there are three core subjects namely mathematics, science and social science.

NCF - 2005 has a number of special features and they are:

- connecting knowledge to life activities.
- learning to shift from rote methods.
- enriching the curriculum beyond textbooks.
- learning experiences for the construction of knowledge.
- making examinations flexible and integrating them with classroom experiences.
- caring concerns within the democratic policy of the country.
- making education relevant to the present and future needs.
- softening the subject boundaries, integrated knowledge and the joy of learning.
- the child is the constructor of knowledge.

NOT TO BE REPUBLISHED @KTBS

The new books are produced based on three fundamental approaches namely-Constructive Approach, Spiral Approach and Integrated Approach.

The learner is encouraged to think, engage in activities, master skills and competencies. The materials presented in these books are integrated with values. The new books are not examination oriented in their nature. On the other hand they help the learner in the all round development of his/her personality, thus help him/her become a healthy member of a healthy society and a productive citizen of this great country, India.

Young learners in their initial stages of learning i.e., between the ages of 5 and 10, acquire most of the concepts which they need in consolidating learning in later stages. If this learning is properly planned and well executed in the classroom, children may find learning easy and enjoyable.

Based on these principles, in the early stages from class 1 to 5, the following subject areas have been introduced- Mother tongue, state language, English as a practice language, mathematics and environmental studies. Environmental studies include science and social science related to their daily life experiences, information about their environment, society, country, their duties and rights. These topics are presented through interesting situations and activities. Opportunities have been provided for self learning and creativity. In this stage importance is given to children sitting in pairs and groups and exchange their experiences. The efforts have been made to make illustrations colourful, attractive and meaningful. Teachers are expected to make use of these and help children learn meaningfully and with pleasure. The textbooks aim at making learning interesting, enjoyable and satisfying.

©KTBS NOT TO BE REPUBLISHED

The Textbook Society expresses grateful thanks to the chairpersons, writers, scrutinisers, artists, staff of DIETs and CTEs and the members of the Editorial Board and printers in helping the Text Book Society in producing these textbooks.

Prof. G.S. Mudambadithaya
Coordinator
Curriculum Revision and
Textbook Preparation,
Karnataka Textbook Society (R),
Bengaluru, Karnataka

Nagendra Kumar
Managing Director
Karnataka Textbook Society (R),
Bengaluru, Karnataka

CONSTITUTION OF INDIA

Part III (Articles 12 – 35)
(Subject to certain conditions, some exceptions
and reasonable restrictions)

guarantees these

Fundamental Rights

Right to Equality

- before law and equal protection of laws;
- irrespective of religion, race, caste, sex or place of birth;
- of opportunity in public employment;
- by abolition of untouchability and titles.

Right to Freedom

- of expression, assembly, association, movement, residence and profession;
- of certain protections in respect of conviction for offences;
- of protection of life and personal liberty;
- of free and compulsory education for children between the age of six and fourteen years;
- of protection against arrest and detention in certain cases.

Right against Exploitation

- for prohibition of traffic in human beings and forced labour;
- for prohibition of employment of children in hazardous jobs.

Right to Freedom of Religion

- freedom of conscience and free profession, practice and propagation of religion;
- freedom to manage religious affairs;
- freedom as to payment of taxes for promotion of any particular religion;
- freedom as to attendance at religious instruction or religious worship in educational institutions wholly maintained by the State.

Cultural and Educational Rights

- for protection of interests of minorities to conserve their language, script and culture;
- for minorities to establish and administer educational institutions of their choice.

Right to Constitutional Remedies

- by issuance of directions or orders or writs by the Supreme Court and High Courts for enforcement of these Fundamental Rights.

@KTBS NOT TO BE REPUBLISHED

About the book

This text book is developed based on the guidelines of the National Curriculum Frame work(NCF-2005), set by the National Council of Educational Research and Training(NCERT) considering the progress in the research and development and the new challenges that humankind is likely to face in the years to come.

While attempting to adopt the NCF-2005 framework to the text books of 'Environmental Studies' for classes 3 and 4 for the State of Karnataka, we have taken into account the socio-econimic, environmental and cultural aspects of the State for easy connect and better understanding. We have tried integrating the science and social science concepts by softening the subject boundaries in the text books of Environmental Studies. The idea is that the children should view the natural and the social environments in a holistic manner from the beginning of the school education. We have included a wide range of topics from family to plants and animals to festival on the lines of the NCF-2005 guidelines.

As students move from 2nd to higher standards, their observation skills using their senses to gather and record information improve. During this stage, the students are able to observe, explore, experiment, read, write, possess the knowledge of numbers, appreciate, empathise and ask questions about their immediate environment. They start understanding the perspectives. Students discover wider range of things and phenomena, though still predominantly focused on their immediate environment and day-to-day experiences. They begin to make links and apply knowledge of environment to their daily life. Considering these developments, we have introduced some of the basic concepts of their immediate natural and social environment in the textbooks. We have designed these books with objective of familiarizing children with their surroundings / local knowledge so that they start appreciating the environment they are living in and value every component that comes with it. We also have included simple activities involving observation, measurements, analysis, synthesis to engage them in the learning process and make the learning exciting and participative. The idea is also to stimulate children to enquiry - based learning. We have tried our best to make these books gender neutral in terms of language and presentation of the concepts. At the beginning of every lesson, we have given the competencies that the children should develop after each lesson, to help teachers facilitate the learning process. We have made the books as attractive as possible with illustrations. This has an added advantage of making communication simple and easy.

While the thought provoking para of Rabindranath Tagore from 'Civilization and Progress', which NCF 2005 opens with, is indeed inspiring for every teacher to search and adopt new and innovative teaching-learning approaches, encouraging children's creative spirit and enquiry-based learning, we welcome comments and suggestions from the teachers, parents and public for further refinement.

Environment Education is that Education of the Environment, through the Environment and for the Environment, natural and social.

Dr. R. Shailaja,
Chairperson, Textbook Committee.

© KTBS NOT TO BE REPUBLISHED

Text Book Committee

Chairperson:

Dr. R. Shailaja, Director, Regional Environmental Studies Center, South Zone, 143, Infantry Road, Bengaluru.

Members:

Smt. R.N. Vasantha Sujay, Asst. teacher, G.H.S, Hebbala, Bengaluru.

Sri Ashwathanarayana, C.R.P., Begli Hosahalli Cluster, Kolar.

Sri K.N. Madhusudana Rao, C.R.P., Hirehalli Cluster, Tumakuru.

Sri Raghavendra Sunagar, Asst. teacher, G.H.S, Marakamdinni, Manvi Tq., Raichur.

Smt. K.V. Geetha, Asst. teacher, G.H.P.S., Ayodhyanagar, Puttur Tq. Dakshina Kannada.

Sri V.B. Shinge, Drawing teacher, Karnataka High School, Dharwad.

Scrutinizer:

Prof. G.S. Mudambadithaya, Co-ordinator, Curriculum revision and Text book preparation, KTBS, Bengaluru.

Editorial Board:

Prof. M.R. Nagaraju, Educationist, Yelahanka upanagara, Bengaluru.

Prof. H.S. Lakshminarayana Bhatta, Professor of Physics(Retd.), Basaveshwaranagar, Bengaluru.

Dr. M.J. Sundar Ram, Professor of Zoology(Retd.), Girinagar, Bengaluru.

Translators :

Sri B.S. Gundu Rao, Principal(Retd.), Sir. M.V. P.U. College, HAL, Bengaluru.

Sri K.B. Raghavendra, H.M., Jnanavahini High School, Koppa, Chikkamagaluru.

Sri Edwin Christopher, H.M., G.H.S., Jyothipura, Bengaluru.

Chief Co-ordinator:

Prof. G.S. Mudambadithaya, Co-ordinator, Curriculum revision and Text book preparation, KTBS, Bengaluru.

Chief Advisors:

Sri Nagendra Kumar, Managing Director, KTBS, Bengaluru.

Smt. C. Nagamani, Deputy Director, KTBS, Bengaluru.

Programme Co-ordinator:

Smt. N.R. Shylaja Kumari, Senior Assistant Director, KTBS, Bengaluru.

©KTBS NOT TO BE REPUBLISHED

About the Revision of Textbooks

Honourable Chief Minister Sri Siddaramaiah who is also the Finance Minister of Karnataka, in his response to the public opinion about the new textbooks from standard I to X, announced, in his 2014-15 budget speech of constituting an expert-committee, to look into the matter. He also spoke of the basic expectations there in, which the textbook experts should follow: "The textbooks should aim at inculcating social equality, moral values, development of personality, scientific temper, critical acumen, secularism and the sense of national commitment", he said.

Later, for the revision of the textbooks from class I to X, the Department of Education constituted twenty seven committees and passed an order on 24-11-2014. The committees so constituted were subject and class-wise and were in accordance with the standards prescribed. Teachers who are experts in matters of subjects and syllabi were in the committees.

There were already many complaints, and analyses about the textbooks. So, a freehand was given in the order dated 24-11-2014 to the responsible committees to examine and review text and even to prepare new text and revise if necessary. Eventually, a new order was passed on 19-9-2015 which also gave freedom even to re-write the textbooks if necessary. In the same order, it was said that the completely revised textbooks could be put to force from 2017-18 instead of 2016-17.

Many self inspired individuals and institutions, listing out the wrong information and mistakes there in the text, had send them to the Education Minister and to the Textbook Society. They were rectified. Before rectification we had exchanged ideas by arranging debates. Discussions had taken place with Primary and Secondary Education Teachers' Associations. Questionnaires were administered among teachers to pool up opinions. Separate meetings were held with teachers, subject inspectors and DIET Principals. Analytical opinions had been collected. To the subject experts of science, social science, mathematics and languages, textbooks were sent in advance and later meetings were held for discussions. Women associations and science related organistation were also invited for discussions. Thus, on the basis of all inputs received from various sources, the textbooks have been revised where ever necessary.

© KTBS NOT TO BE REPUBLISHED

Another important aspect has to be shared here. We constituted three expert committees. They were constituted to make suggestions after making a comparative study of the texts of science, mathematics and social science subjects of central schools (NCERT), along with state textbooks. Thus, the state text books have been enriched based on the comparative analysis and suggestions made by the experts. The state textbooks have been guarded not to go lower in standards than the textbooks of central school. Besides, these textbooks have been examined along side with the textbooks of Andhra Pradesh, Kerala, Tamil Nadu and Maharashtra states.

Another clarification has to be given here. Whatever we have done in the committees is only revision, it is not the total preparation of the textbooks. Therefore, the structure of the already prepared textbooks have in no way been affected or distorted. They have only been revised in the background of gender equality, regional representation, national integrity, equality and social harmony. While doing so, the curriculum frames of both central and state have not been transgressed. Besides, the aspirations of the constitution are incorporated carefully. Further, the reviews of the committees were once given to higher expert committees for examination and their opinions have been inculcated into the textbooks.

© KTBS NOT TO BE REPUBLISHED

Finally, we express our grateful thanks to those who strived in all those 27 committees with complete dedication and also to those who served in higher committees. At the same time, we thank all the supervising officers of the Textbook Society who sincerely worked hard in forming the committees and managed to see the task reach its logical completion. We thank all the members of the staff who co-operated in this venture. Our thanks are also due to the subject experts and to the associations who gave valuable suggestions.

Sri. M.P. Madegowda
Managing Director
Karnataka Textbook Society (R.)
Bengaluru.

Prof. Baraguru Ramachandrappa
Chairman-in-Chief
Textbook Revision Committees
Karnataka Textbook Society (R.)
Bengaluru.

Revision Committee

Chairman-in-Chief :

Prof. Baraguru Ramachandrappa, State Textbook Revision Committees, Karnataka Textbook Society, Bengaluru.

Chairperson :

Dr.S.Shishupala, Professor and Chairman, Department of microbiology, Davanagere University, Davanagere

Members:

Smt.K. Mamatha, Asst. teacher, GHS, Kengeri Upanagara, Bengaluru.
Sri K.S. Gireesh, Asst. teacher, GHS, Jalige, Devanahalli Tq., Bengaluru Rural Dist.
Smt. G. Renuka, Asst. teacher, GHS, Honnashettihally, Gubbi Tq., Tumakuru Dist.
Smt. R.N. Vasantha Sujay, Asst. teacher, GHS, Hebbala, Bengaluru.
Smt. A. Lakshmidevi, Asst. teacher, GHPS, Kaveripura, Bengaluru.
Smt. B. Hemalatha, Asst. teacher, GLPS, K. Narayanapura, Bengaluru.

Artist :

Sri U. Hazarat Ali., Lecturer, Department of Fine Arts,Tumkur University, Tumakuru.

High Power Review Committee Members :

Dr. T.R. Anantharamu, Senior Scientist(Retd.), Geological Survey of India, Bengaluru.
Prof. V.S. Vatsala, Principal (Retd.), M.E.S College, Malleswaram, Bengaluru.
Dr. G.M. Nijaguna, Principal (Retd.), Vijaya College, Basavanagudi, Bengaluru.
Prof. K.S. Nataraj, Professor of Physics(Retd.), National College, Jayanagara, Bengaluru.

Translators :

Smt. Prameetha Adoni, Subject Inspector, Office of the DDPI, Bengaluru Rural Dist.
Sri K.B Raghavendra, Asst. teacher, Amratha Bharathi High School, Hebri, Karkala Tq., Udupi Dist.

Chief Advisors :

Sri. M.P. Madegowda, Managing Director, Karnataka Textbook Society, Bengaluru.
Smt. M.D. Usha, Deputy Director, Karnataka Textbook Society, Bengaluru.

Programme Co-ordinator :

Sri. Ashwath Narayana K.N., Senior Assistant Director, KTBS, Bengaluru.

© KTBS NOT TO BE REPUBLISHED

CONTENTS

L9H1K8

SL.NO.	LESSON	PAGE NO.
1.	A day in the garden	1 - 11
2.	Green wealth	12 - 19
3.	Judgement of the owl	20 - 27
4.	The story of a drop of water	28 - 43
5.	The family of water	44 - 53
6.	Variety of food	54 - 66
7.	Our kitchen	67 - 75
8.	Let us build a house	76 - 79
9.	Pretty house	80 - 86
10.	Our sense organs	87 - 96
11.	Importance of teeth	97 - 102
12.	Danger - Accident	103 - 107

NOT TO BE REPUBLISHED @KTBS

LESSON – 1

A DAY IN THE GARDEN

P8M8R7

After studying this lesson you,

- *describe the varieties in the colour, size, shape, food habits and habitats of the animals you see.*
- *describe the birds based on their voice, food habits and habitats etc.*

A group of children are talking as they go home in the evening.

Vanaja : Ah! look at that flock of cranes !

Likhitha : Ah! they are flying towards our garden. Now they are settling on the tree near the pond.

Aruna : Shall we go there and have a look at them? (Children move towards the pond in the garden)

Theresa : Come without making a noise. There are not only cranes on the tree but also squirrels, ants, spiders, bats, mynah ... Oh! so many animals. They may run away.



Write the names of the animals you see in the picture in the space provided.

© SCERT NOT TO BE REPUBLISHED

Likhitha : Oh! look at the fish and the frogs in the pond. A tortoise is swimming in the pond!

Aruna : The chirping of the birds is very melodious to listen to, isn't it?

Ali : Shall we mimic the birds?

Activity :

- *Write the names of the birds you have seen in your place.*

  _____

- *Which of the birds' voices have you heard? Write here.*

  _____

- *Imitate the voice of the birds. Ask your friends to do the same.*

Seema : Stop, stop. It's enough. Our mimicry will make these birds fly away.

Likhitha : Oh ! Rangappa, the gardener is coming this way. He loves birds, he gets angry if you make the birds fly away. Stop making noise.

Rangappa : Likhitha, what brings you here?

Likhitha : Rangappa, we have come here to see the cranes.

Rangappa : Do you know about birds?

Anand : Oh! We know many things.

Rangappa : Then, I'll ask you a few questions. Will you answer them?

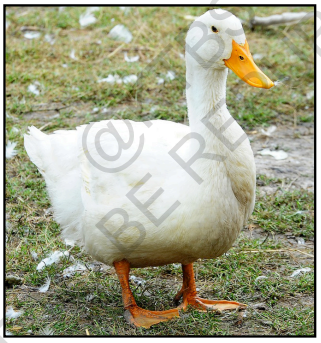
All : Oh.....yes, we will.

Rangappa : Tell me the names of the birds I describe.

- Which is the green bird? ☐
- Which is the black bird? ☐
- Which is the long tailed bird? ☐
- Which is the long legged bird? ☐

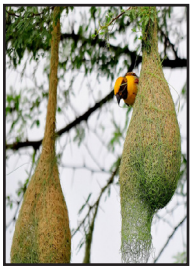
©TBS NOT TO BE REPUBLISHED

- Which is the bird that has a long neck? ☐
- Which is the bird that has a long beak? ☐
- What is the food of the crane? ☐
- What is the food of the eagle? ☐
- Which is the smallest bird that you have seen? ☐
- Which is the biggest bird that you have seen? ☐
- What is the speciality of the bird that you see in the picture given below?



duck

Rangappa : Good, you know something about birds. Now I'll show you a few nests. You have to identify them. Will you?






NOT TO BE REPUBLISHED

Ali : Oh ! Look at the nest of the weaver bird. It builds the nest better than a man. Who has taught this bird to build such a beautiful nest?

Activity : *Ask and know how a weaver bird builds its nest.*

Rangappa : Yes. It is true Ali. Do you know what happened a few days ago? Our friend Kalleshi was grazing sheep. A car came and stopped. A man got out of the car and tried to pluck the weaver bird's nest. Kalleshi ran and stoppped that man from plucking the nest. That man was surprised. He asked, "Why do you stop me?" Kalleshi replied, "You will take the nest and go away. When the weaver bird comes back, it will not find its nest, and it will be in trouble. I can't bear to see that."



© TBS NOT TO BE REPUBLISHED

That man was surprised to see Kalleshi's love for birds. He praised Kalleshi for teaching him a lesson. He returned without touching the nest.

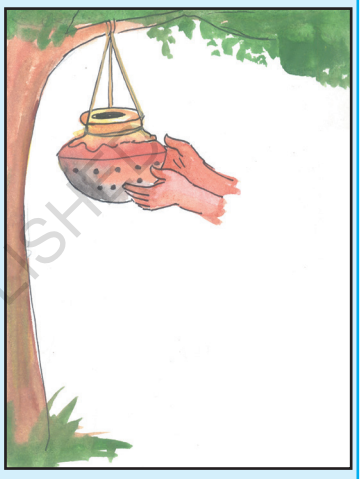
Likhitha : Rangappa, we also like to save the birds and their nests. What should we do?

Rangappa : Build small nests and hang them on the trees near the school or home. Keep small cups of water here and there for the birds to drink. Keep small plates of grains for them to eat. Grow more trees and protect them. It helps to increase the number of birds.

Do it yourself :

Build a nest for a bird.

Take a used pot. Close the mouth of the pot with a piece of cloth. Make a hole in the middle of the cloth, so that the bird can go in and come out. Make a few small holes at the bottom of the pot, so that water does not collect inside the pot. Now the nest is ready. With the help of elders hang the pot on a branch of a tree. Provide the birds with water and grains everyday.



© SCERT NOT TO BE REPUBLISHED

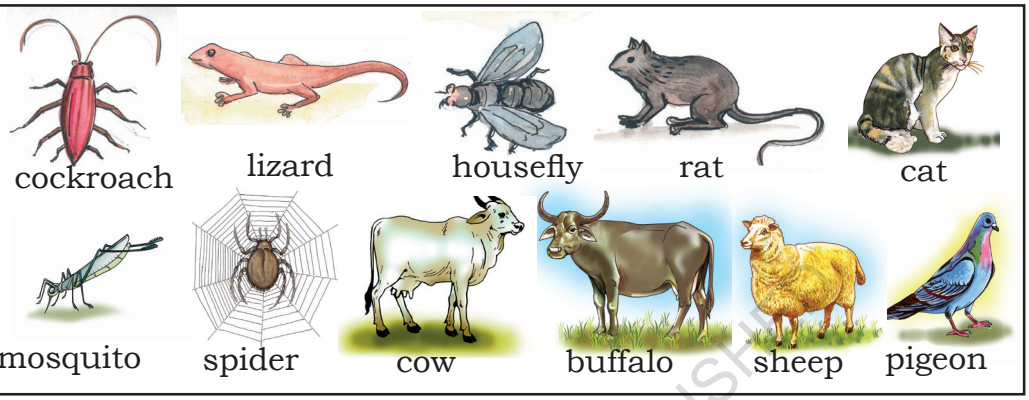
Vanaja : Don't the birds harm our fields?

Rangappa : No, child, on the other hand, these birds are very helpful. They eat the insects which harm the crops. It helps the growth of the crops.

Activity : *Collect the feathers dropped from the birds. Find out which bird's feathers they are. Take the help of teacher or elders. Paste the feathers collected in a used note book and prepare an album.*

Seema : Oh ! Look at the big spider! It is in the tree. These spiders also live in our houses, don't they?

Aruna : Yes, they do. There are lizards, cockroaches, houseflies, rats, cats, mosquitos along with spiders. Along with these there are domestic animals like cows, buffaloes, sheep, doves...., There are many animals.



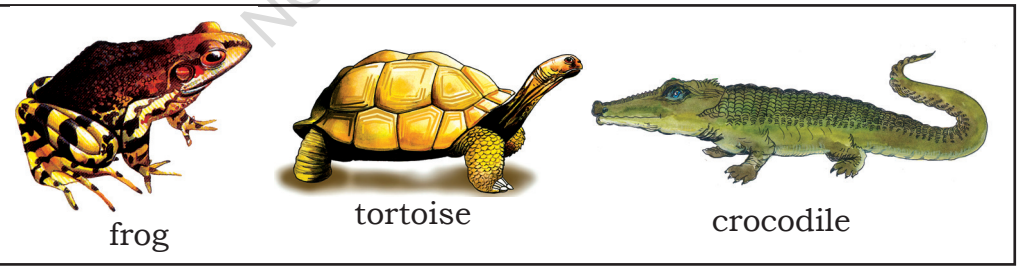
Theresa : Oh! What leaped there?

Likhitha : Don't be afraid. It is a frog. It leapt from the pond to the land.

Theresa : What does the frog do on the land?

Ananda : Don't you know Theresa, the frog, tortoise, crocodile etc., live both in water and on land.

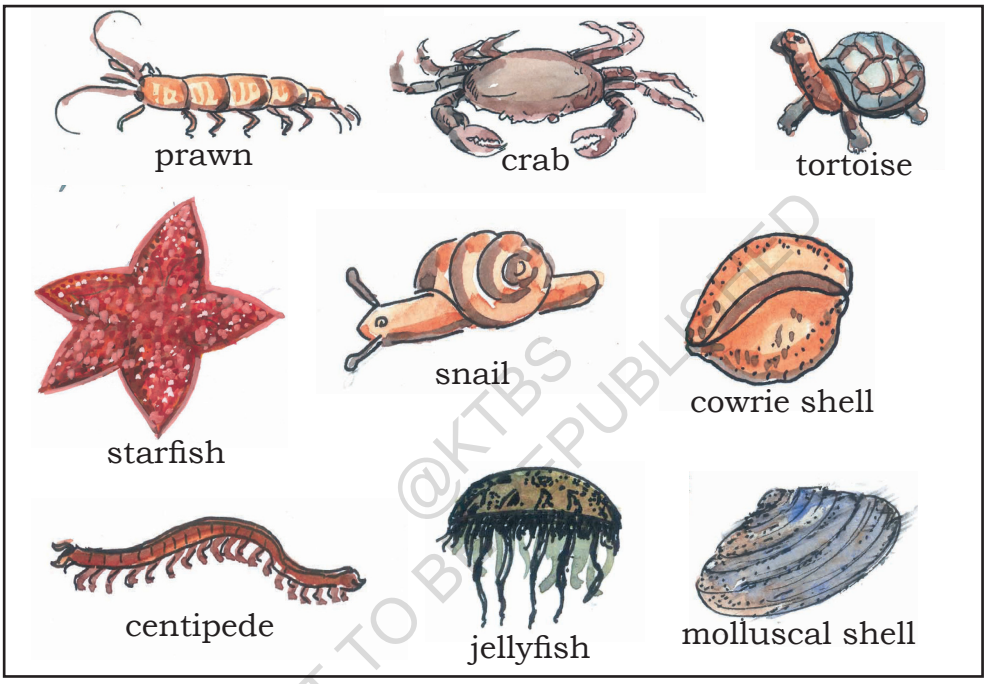
©DTEs NOT TO BE REPUBLISHED



Vanaja : Then, which are the animals that live only in water?

Ananda : Fish, prawn, etc.

Vanaja : My grandmother's house is near the seashore. My grandmother tells me that there are prawns, crabs, tortoises, starfishes, corals and snails. I have seen some crabs and starfishes there on the sand. Next time when I go, I shall get a few shells.



@KTBS NOT TO BE REPUBLISHED

Rangappa : Please don't bring the shells in which animals live. They might die. Leave them in the sea.

Vanaja : All right. I'll do so.

Rangappa : You have seen many animals. Do you think that the size, colour and shape of these animals are the same?

Likhitha : No, they are different from each other. Each animal has its own shape, colour and size.

Rangappa : Yes, there are so many kinds of animals, and it is difficult to keep count.

Activity : *A list of animals is given below. Arrange them in an order, starting from the smallest animal to the biggest animal.*

cow, dog, goat, pigeon, honeybee, ant, sparrow, elephant, grasshopper, cat.

_____ _____ _____ _____ _____

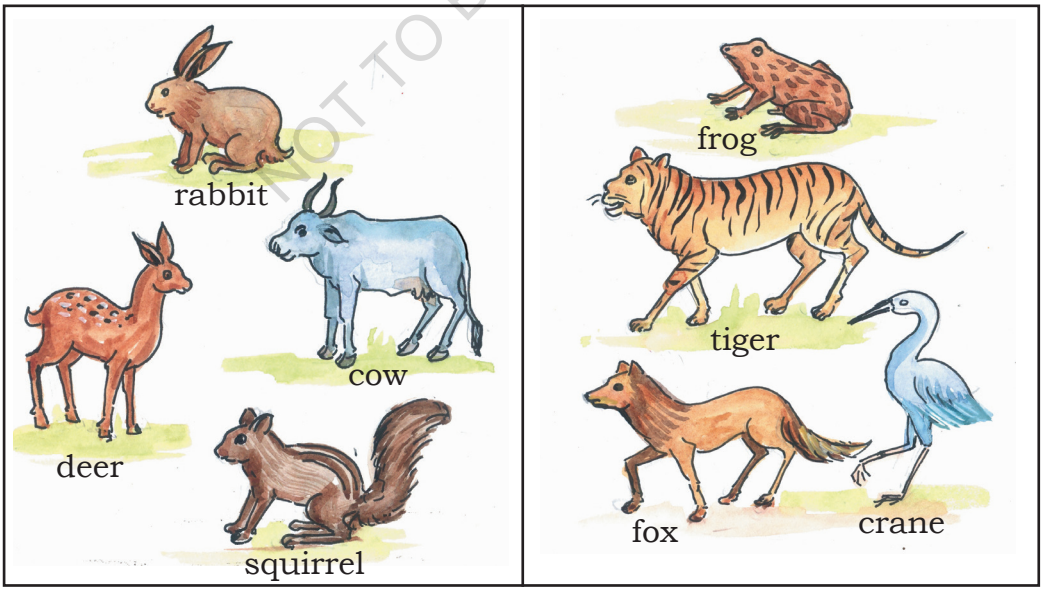
_____ _____ _____ _____ _____

Vanaja : Look, there are many kinds of insects and birds in this tree and pond.

Rangappa : Insects and birds are also animals.

Ali : Some animals eat grass, some eat grains, while some eat small creatures and flesh.

Rangappa : Yes, the animals which eat grass, grains, fruits and vegetables are herbivorous animals. The animals which eat insects, fish and other animals are carnivorous animals.



©KTBS NOT TO BE REPUBLISHED

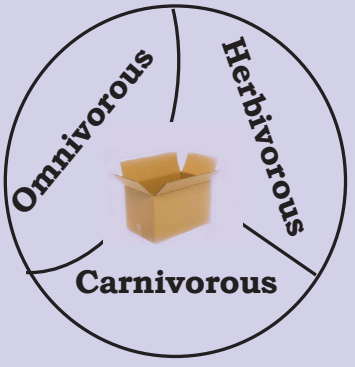
Seema : I eat both fruit and fish.

Rangappa : You are omnivorous. The animals like dog and cat are also omnivorous. The animals which eat products obtained from both plants and animals are omnivorous animals.



NOT TO BE REPUBLISHED

Play the game :



Draw a circle on the ground. Divide the circle into three equal parts and name them as herbivorous, carnivorous and omnivorous. The pictures of the animals are kept in a box which is in the center of the circle. All the children will stand around the circle. Each child will pick up a picture and stand in one of the three parts of the circle according to the food habit of the animal. If a child stands in the wrong part, the child is out of the game.

You can also play the game in the following way. You stand outside the circle with your friends. One will stand in the centre and call out the name of the animals. All the children will move to the part of the circle according to the food habit of that animal. The child who makes a wrong move is out of the game.

Theresa : Oh ! It is getting dark. Shall we go home?

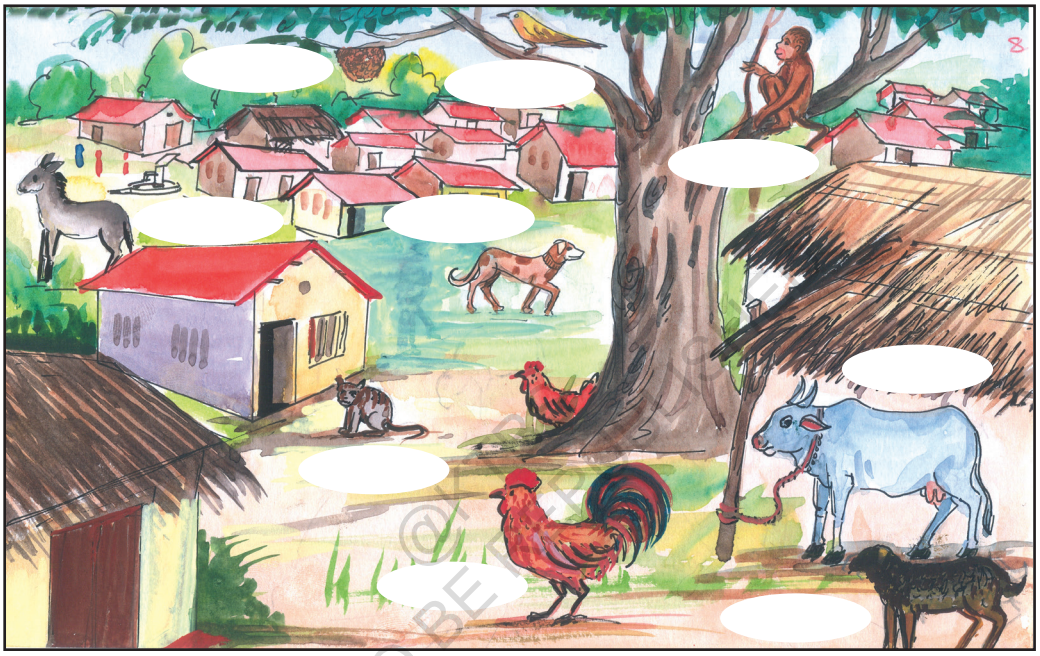
Rangappa : Yes, all of you go home. Tomorrow is Sunday. All of you wake up early and assemble in the garden. Let us watch the birds.

Where do these animals live? Match them by drawing a line.

A	B
lion	ant hill
snake	cave
fish	tree
monkey	pond
honey bee	hole
star fish	river
crane	nest
rat	sea
cockroach	hive
weaver bird	crevices

NOT TO BE REPUBLISHED @KTBS

Activity : *Write the names of the animals that you find in the picture, in the space provided.*



NOT TO BE REPUBLISHED

LESSON – 2

GREEN WEALTH

R1V9H9

After studying this lesson you,

- *mention the varieties in the sizes, the places of growth colours and shapes of plants and show interest to grow plants.*
- *understand the varieties of plants found in your locality.*
- *know about the crops.*
- *collect different types of leaves and discuss their shapes, colours, structures and smell.*
- *observe the shedding of leaves during certain seasons.*
- *understand the process of preparing manure using the shed leaves.*
- *identify the pictures of leaves drawn on different objects.*

© KTBS NOT TO BE REPUBLISHED

In the previous class, you have learnt a little about plants. You may have observed the plants that grow around you. Write the names of 10 plants that you know.

_____, _____, _____, _____,

_____, _____, _____, _____,

_____, _____ .

Observe the rose plant and hibiscus plant. The branches of these plants spread out from the lower part of the plants, don't they? As these plants look like clusters they are called **bushes** or **shrubs**.

You have written the names of ten plants. Now group them into herbs (small plants) \ shrubs \ trees \ creepers.

Why did you group them as herbs (small plants) shrubs, trees and creepers? Explain.



Herbs are small plants and their stems are very soft.



The stems of shurbs are a bit hard. The branches spread out at the lower part of the plant.



Trees have hard stem and they grow tall.



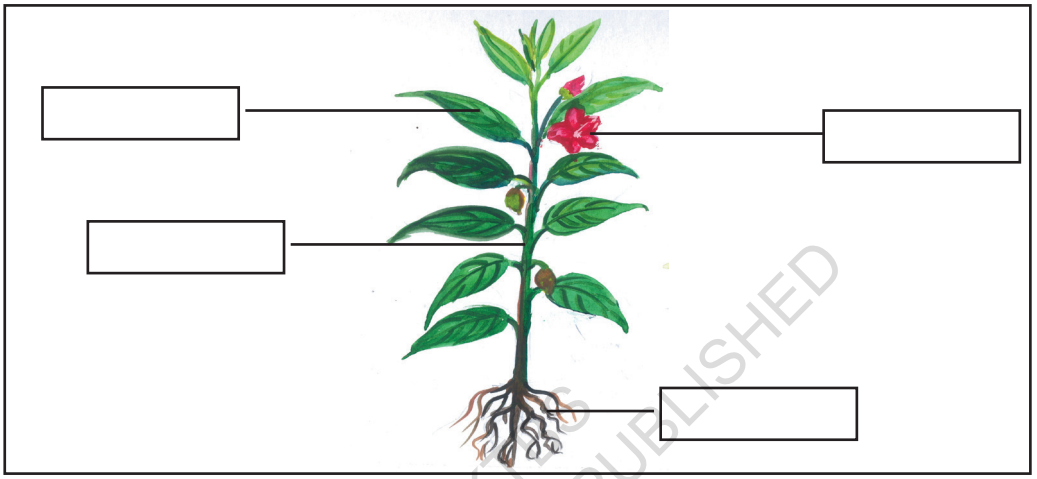
Creepers have long stems but they are smaller in size.

@KTBS TO BE REPUBLISHED

The plants are classified into herbs (small plants), shrubs, trees and creepers according to their height and hardness of their stem.

You know that plants provide food, fodder, manure, firewood, fruits and medicines etc. These are obtained from different parts of the plants.

Write the different parts of the plant in the space provided.



Write the colours of the different parts of the plant that you have seen.

leaf	_____	root	_____
stem	_____	unripe fruit	_____
flower	_____	fruit	_____

@KTBS NOT TO BE REPUBLISHED



Know this :

- *The leaves are generally green in colour.*
- *The stem is green, brownish grey or brown in colour.*
- *The flowers have many colours like brown, yellow, white, saffron etc.,*
- *The unripe fruit is generally green in colour.*
- *The fruits are in different colours-red, yellow, green etc.*

Write the details of the plants that are used in your house in the table given below. Follow the model given.

	Name of the plant	Plant /bush/ creeper/ tree/	part of the plant used	use
Model :	Creeper of pot herb	creeper	unripe fruit	vegetable

Activitiy :

- *Put together the details of the plants prepared by you along with your friends and prepare a big chart. Display it in your school.*
- *With the help of your friends count the number of different types of plants that grow around your houses and school.*
- *Why are coriander leaves, mint leaves and curry leaves used for cooking? Know about this. Write the names of any five types of plants which have good smelling leaves.*

_____ _____

_____ _____

_____

- *Collect different types of leaves. Observe their sizes and shapes. Dry them and stick them in your used note book.*

@KTBS NOT TO BE REPUBLISHED

Sing and Enjoy



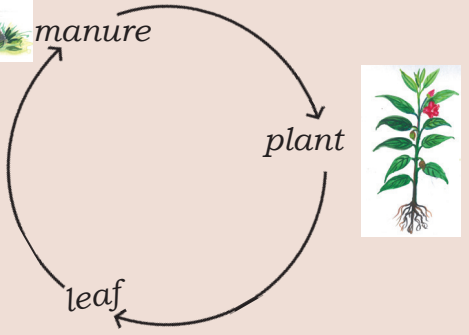
I am green,
The life of a plant.
See our size,
So different our shape
Though in colour
We rarely differ
And our smell
You all will love.



I grow on plants
Fall on the soil
Turned into manure
Join the plants again.



When on plant
I serve the plant
When I fall, I will dry
And join the plant again.



© NCERT NOT TO BE REPUBLISHED

Activity : *Collect the leaves that have fallen in your school premises with the help of your friends. Under the guidance of your teacher, prepare manure with your friends. Discuss with them its use and use it.*

Draw the pictures of different leaves.

©KTBS NOT TO BE REPUBLISHED

Do it yourself :

- *Take a lump of wet clay and press the leaves on to it and draw pictures.*
- *Cut the paper in the shape of leaves and colour them.*

Identify the leaves painted on these objects.

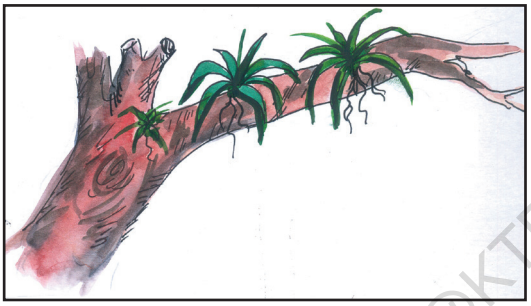


Do it yourself : *Make a string of buntings with paper leaves and decorate your school.*

You might have observed that some plants grow in water. Can you name them?

The plants like lotus and lily grow in water. Look at their leaves. They appear to be floating.





Do you know about small plants growing on the branches of big trees? Observe these plants in your locality. These are called epiphytes.

@KTBS NOT TO BE REPUBLISHED



Have you seen the cultivated fields? What crops are grown by the farmers in these fields, in your village? Write the names of crops in the space given. Take the help of your teacher.

_____, _____, _____, _____, _____,

_____, _____, _____, _____, _____.

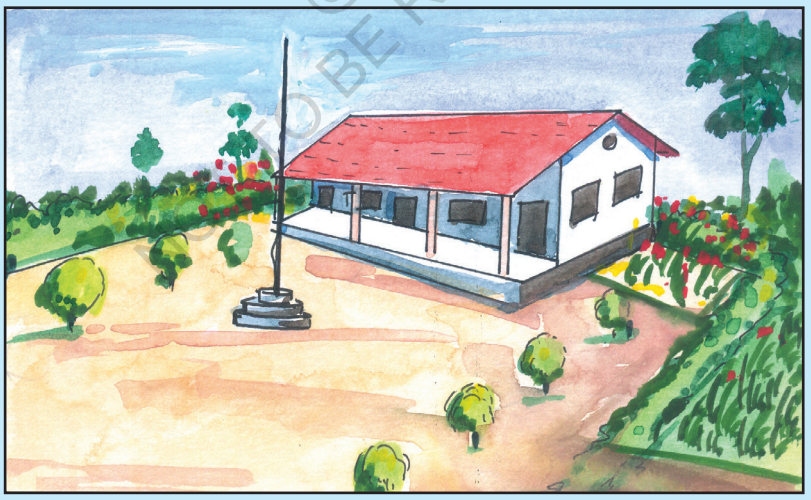
Know this :

We get food items such as rice, ragi, jowar, grains, oil seeds etc., from plants. These plants are grown in a large quantity. So vast places are needed for them. These places are fields. Crops are grown here.

Do you know how many types of plants grow around you and what things are obtained from them?

Do it yourself :

- *With the help of your family members grow a kitchen garden. Grow plants that give us flowers, vegetables and fruits. Put water and manure and look after them carefully.*
- *With the help of your teacher and friends grow different types of plants in your school and nurture them.*



- *Avoid plucking the plants and the leaves unnecessarily.*

© @KTBS NOT TO BE REPUBLISHED

LESSON – 3

JUDGEMENT OF THE OWL

Z4J2Z6

After studying this lesson you,

- *identify the differences between living beings and non-living things.*
- *identify the similarities and differences between animals and plants.*



Once there was an argument between a mango tree and the soil about who was greater. Their argument was very hot.

Hearing the noise, the cat, the monkey, the snake and the owl gathered there. Everyone requested the owl to decide the dispute. O.K! The owl cleared its throat and asked both of them to present their arguments.



NOT TO BE REPUBLISHED

Soil : Without me, where will be the mango? Without me it cannot take birth. I give the mango its food and water. So I am great.

Mango : I give sweet fruits to everyone. I give space to the birds to build their nests. Moreover, I am also a living being.

Owl : Oh! Mango, how do you say, that you are a living being?

Mango : Look, first of all, I give birth to the same kind of trees. Secondly, my seeds germinate into saplings and grow into plants, later into big trees like me.

Owl : All right, the soil cannot do the things you do. But for your growth, you need water and food. Where do you get them from?

Mango : I get them from the soil.

Owl : See, you need the soil for your growth.

Mango : But I get food from the leaves shed by me.

Soil : But it comes through me only.

Owl : See, we need both of you. Here no one is more or less important.

Squirrel : Dear Owl, Mango said that it is a living being. What about the soil then?

Owl : Soil doesn't grow, it doesn't need food. So it is a non-living thing.

Monkey : Why did you say that both are equal and we need both of them ?

NOT TO BE REPUBLISHED @KTBS

Owl : Look around, dear Monkey. There is soil, water and air. They are non living things. But you think a while, can we live without air, water and soil?

All : No, never.

All of them praised the owl and went away happily.

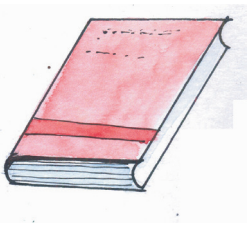
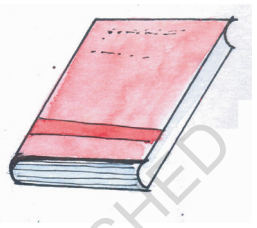
You see many things around you.Classify them as living beings and non-living things. Write in the table given below.

Living beings	Non-living things

@KTBS NOT TO BE REPUBLISHED

How can you identify the living beings and non-living things? Remember what the owl told.

Compare the pictures given below.

Before	After
	
	
	
	
	

@KTBS NOT TO BE REPUBLISHED

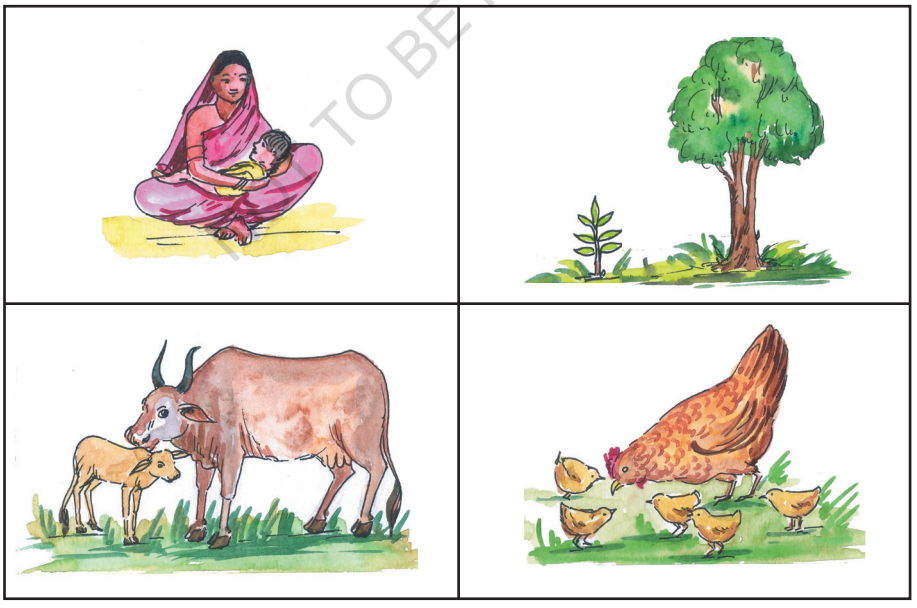
Which are the living beings here? How did you identify them?

Living beings grow.



Observe the above pictures. What do you understand?
Do the tables and chairs eat food?

All living beings need food.



What do you understand from these pictures?

@KTBS NOT TO BE REPUBLISHED

Does a book give birth to another book? Does a doll give birth to another doll? Think.

Living beings give birth to young ones of the same kind.

Look at the pictures given below.



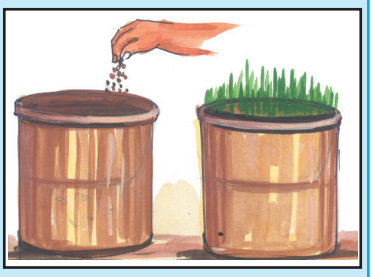


What do you understand from these pictures?

Living beings respire.

Do it yourself :

Collect the seeds of ragi or brinjal or tomato or chilli. Fill soil into an empty pot or box. Sow the seeds in the soil. Sprinkle water on it every day. Observe carefully the changes that take place in a week. Write here the changes that you have observed.



_____

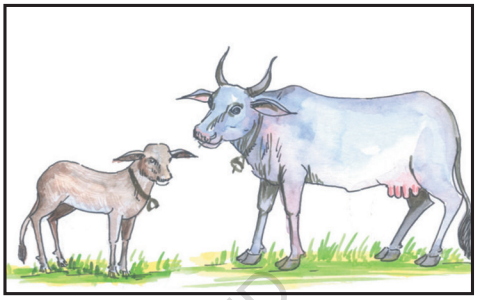
_____

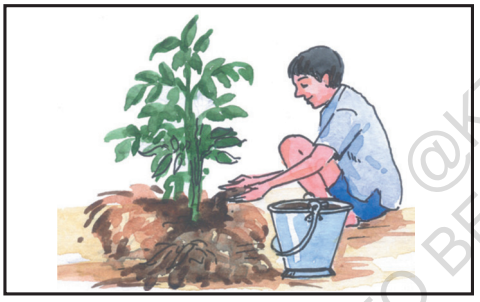
Plants and animals are living beings. Air, water, soil and such other things are non-living things. Air, water and soil are essential for the living beings to live. The system in which the living beings and non-living things live together is environment.

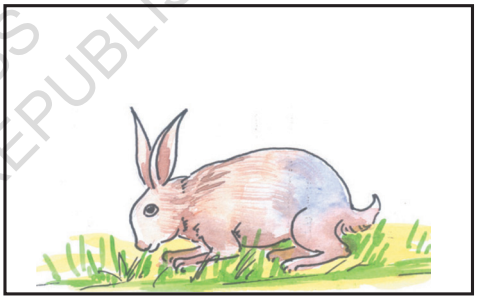
© KTBS NOT TO BE REPUBLISHED

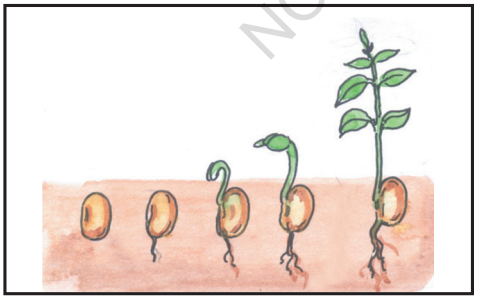
There are some similarities between plants and animals. **For example,** both plants and animals respire. Observe the pictures given below. Write the similarities in the space provided.

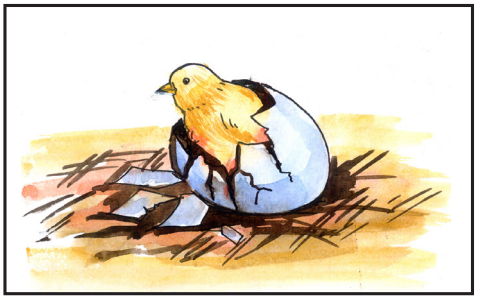






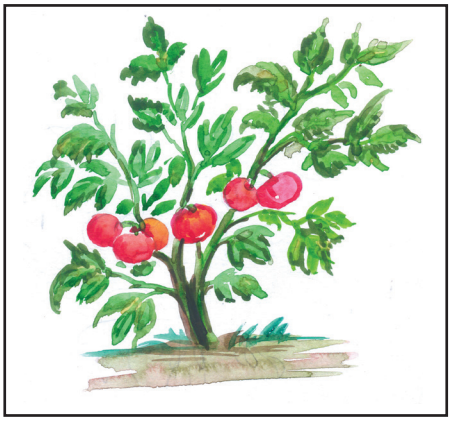


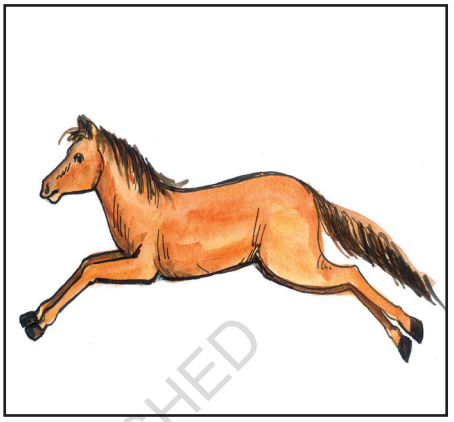


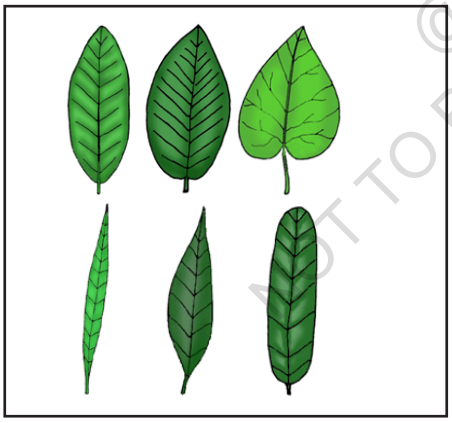


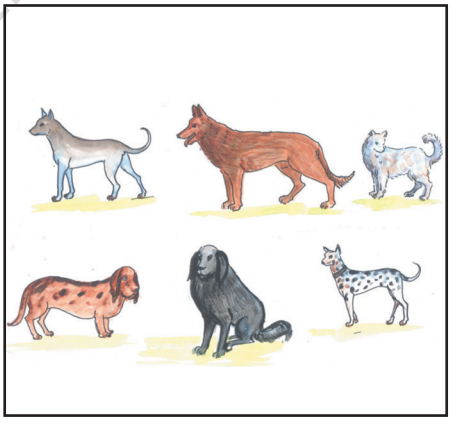
@KTBS NOT TO BE REPUBLISHED

You have observed the differences between plants and animals. Look at the pictures given below and write the differences in the space provided.









@KTBS
NOT TO BE REPUBLISHED

LESSON – 4

THE STORY OF A DROP OF WATER

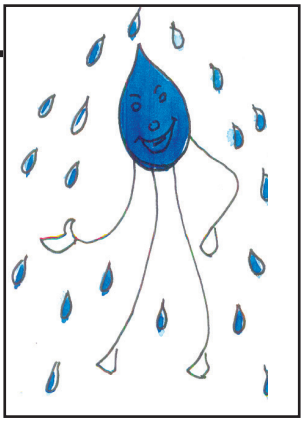
Y9R8Y6

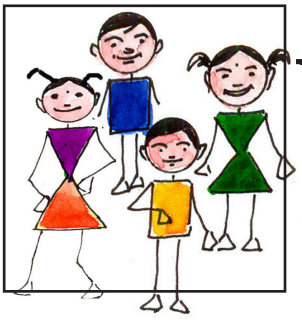
After studying this lesson you,

- *identify the different sources of water.*
- *explain from where you get water for your household activities.*
- *understand the necessity and quantity of water needed for day to day activities.*
- *discuss the size, shape and material used to prepare the vessels that are used to store water.*
- *understand the safety measures to be followed in storage and proper use of water.*

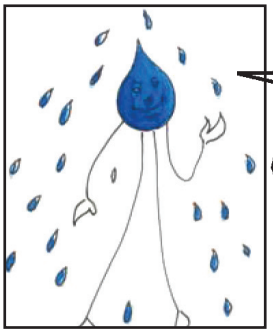
© KTBS NOT TO BE REPUBLISHED

Oh! dear child .... I am a drop of water. I am coming to the earth from the clouds, drop by drop as rain. I fall on you....you get wet! Go inside with your friends.....

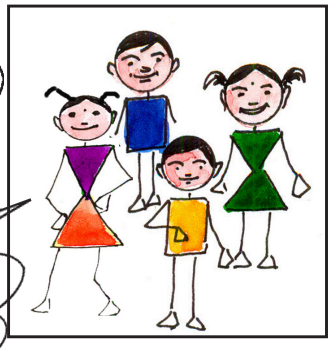




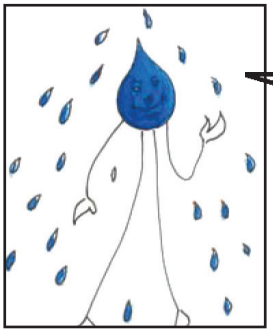
Oh! Dear drop of water. I love to get wet. Where are you going ? My friends and I will come with you. Dear drop, will you take us....?



I flow to different places. It may be difficult for you to come with me.



No!... we would like to come with you.

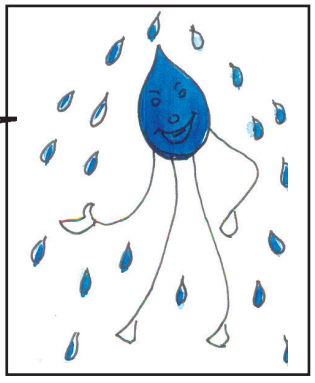


All right.... Look at the picture to know the places that I flow through, after I fall on the earth.

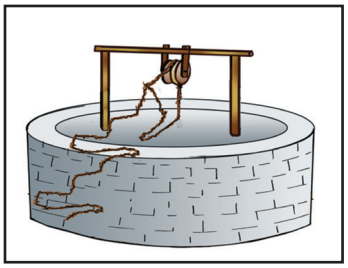


Oh! we are ready.

Children..... Look at the picture and write their names in the space provided.



© IBS NOT TO BE REPUBLISHED

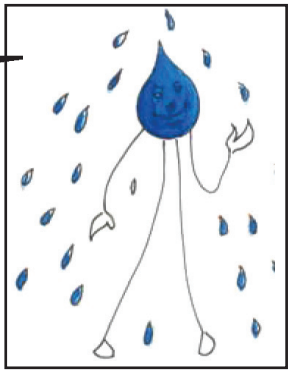








All right, children..... you already know that the places where I get stored are called sources of water.





Dear drop of water..... do you know that there are many sources of water in our place also?

@KTBS NOT TO BE REPUBLISHED



Activity :

Children .....the names of the sources of water are hidden in the word grid given below. Identify them.

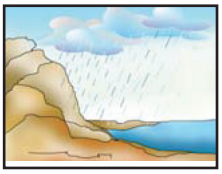
River



Pond

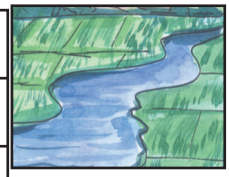


Rain

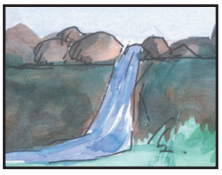


A	H	R	I	V	U	L	E	T
P	O	A	B	R	I	V	E	R
O	L	I	S	T	R	E	A	M
H	A	N	D	P	U	M	P	L
D	K	N	V	F	K	X	O	B
W	E	L	L	Y	D	A	N	C
V	W	Z	S	E	A	E	D	J

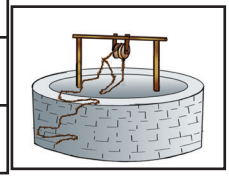
Stream



Rivulet



Well



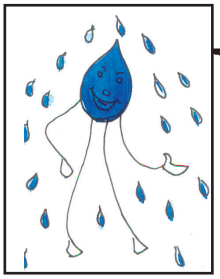


Sea

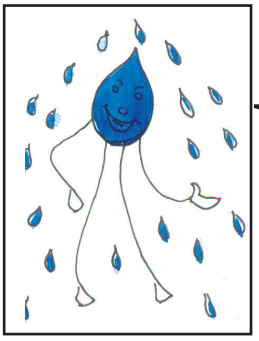


Hand pump

© KTBS NOT TO BE REPUBLISHED



Children .... write the names of my sources found in your place in the space provided.

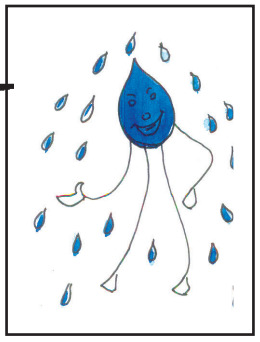


Did you write tap also ....? It is also correct.

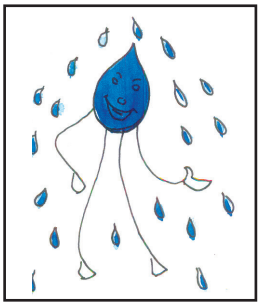


Drop of water..... Is it not a source of water..? We store water from the tap itself. Don't you know?

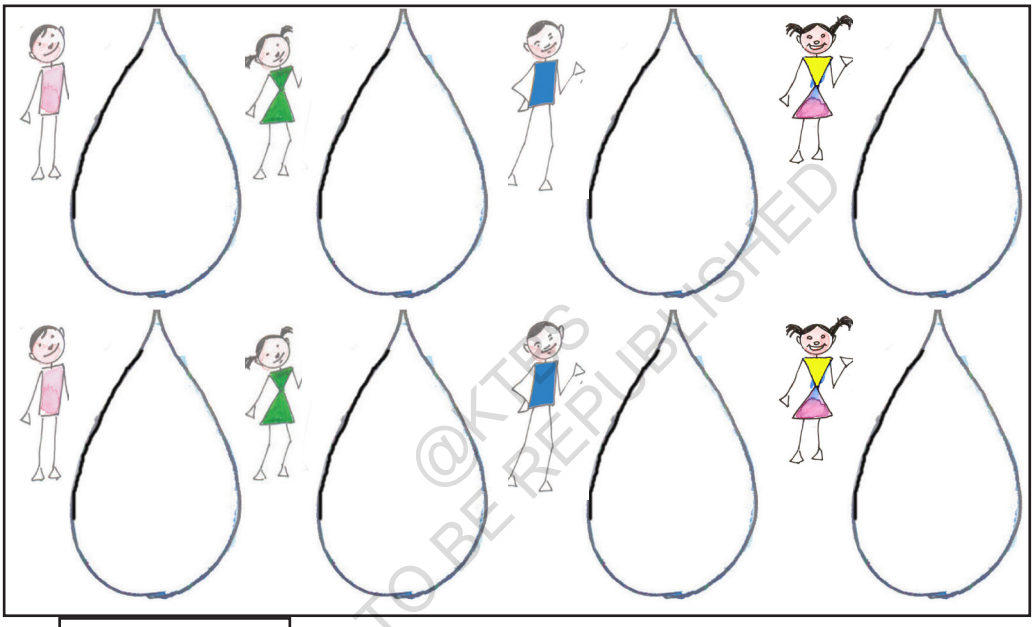
But the tap is not my source. I come in the tap from other sources. Understand ....? For example, I may come from a pond or a river.



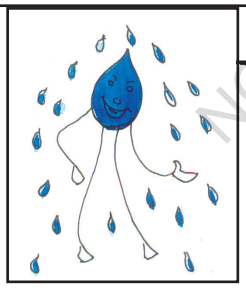
© KTBS NOT TO BE REPUBLISHED



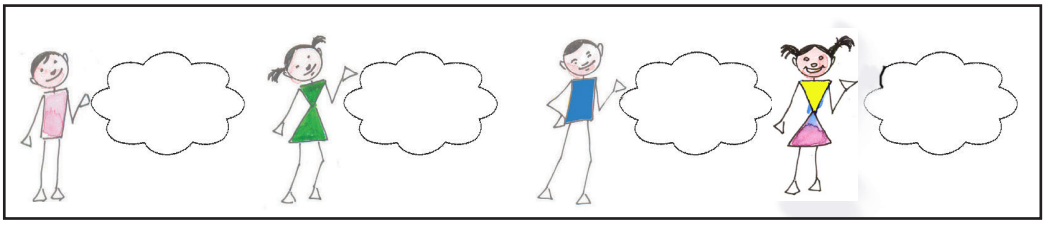
Children.... For what purposes do you use me? Write them in the pictures of drops given here.

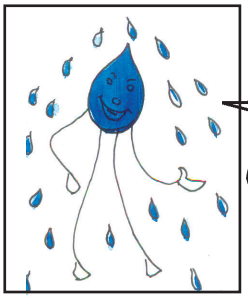


@KTBS NOT TO BE REPUBLISHED

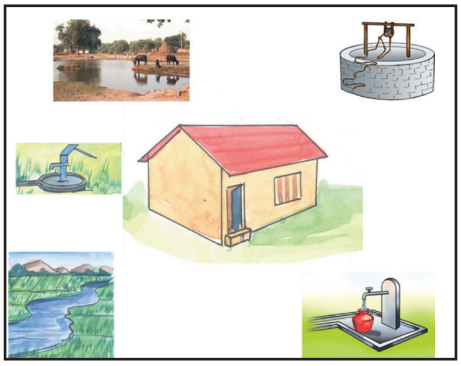


All right. Now tell me where do you bring me from, to your house? Write here.





How far are they located from your house?





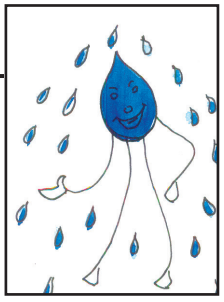


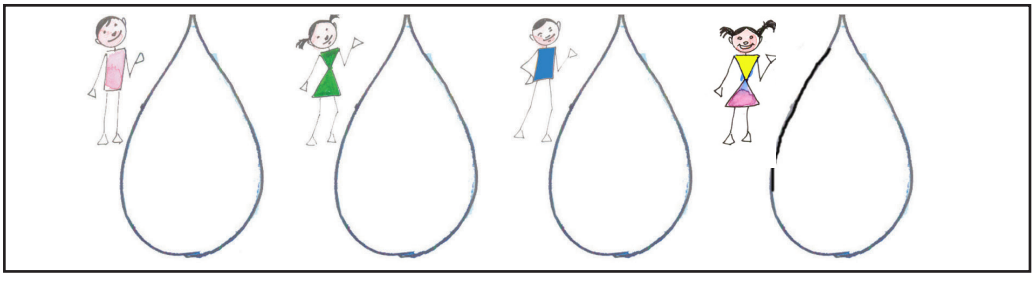


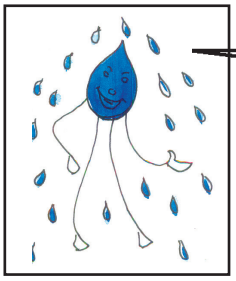


@KTBS NOT TO BE REPUBLISHED

Children.... who brings me to your house? Write the answer inside the drops given here.





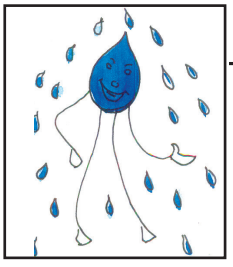


Activity :

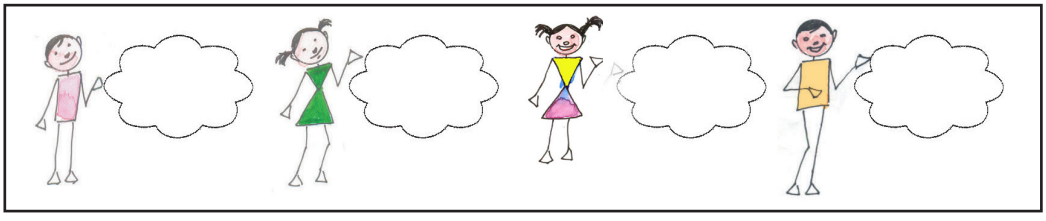
Read carefully the table given below.Then Put (✓)mark in the column of the source of water used for various purposes.

uses of water	River	Pond	Well	Hand pump	Stream	Sea	Rivulet
drinking			✓				✓
washing dishes							
washing clothes							
bathing							
cooking							
gardening							
washing domestic animals							
washing vehicles							

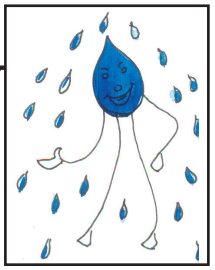
@KTBS NOT TO BE REPUBLISHED



Dear children, What is the source of drinking water in your school?



How do
you store me in your house?
Look at the pictures and put (✓)
mark in the box provided and also
write which materials
they are made of.





✓

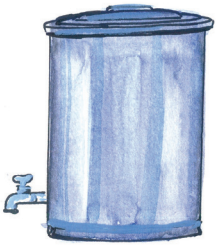
mud

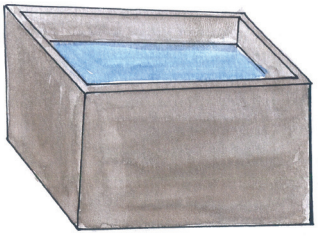




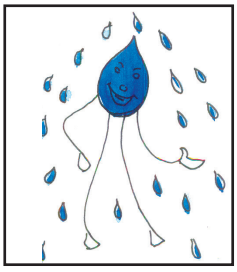




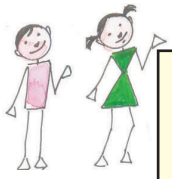




@KTBS
NOT TO BE REPUBLISHED



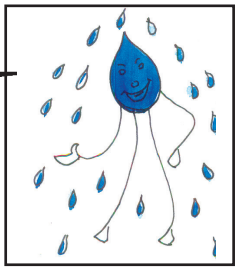
Apart from these, if you store me in any other vessel, draw their pictures and write their names.

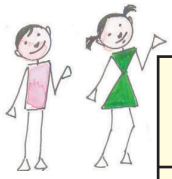


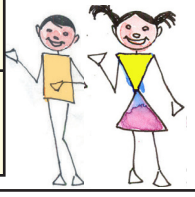


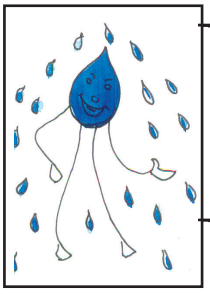
NOT TO BE REPUBLISHED @KTBS

Hm....Children....
which materials are these containers made of?
Write here.









The vessels made of mud, plastic, steel, copper etc., are used to store me.

Activity :

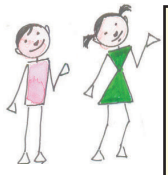
How many containers are there in your house? Count them and write here.

containers				
steel	4	2	—	—
plastic				
mud				
brass				
copper				
others				

@KTBS NOT TO BE REPUBLISHED

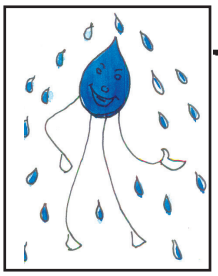
Draw the pictures of the smallest and the biggest container that you use to store water in your home.





The smallest container	**The largest container**

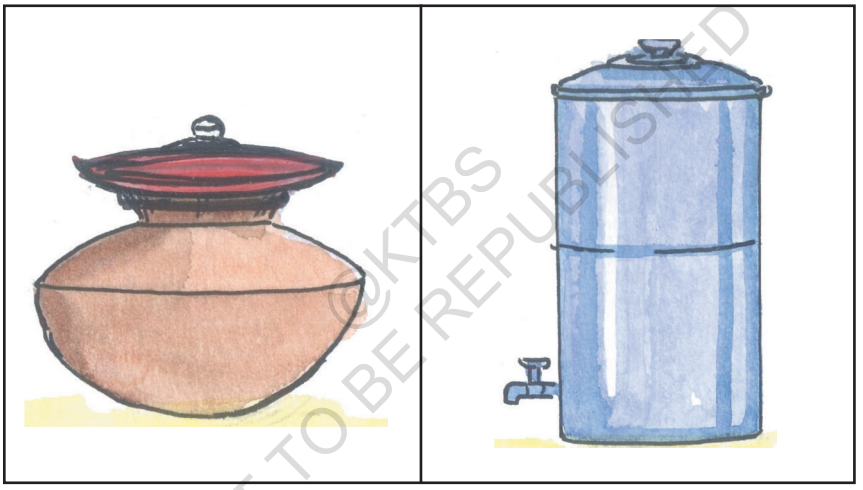


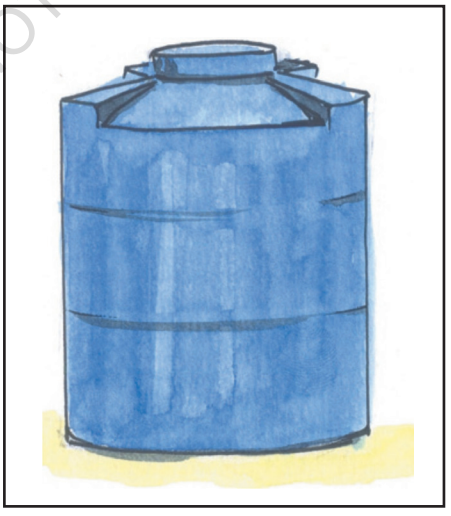


Oh! This is how you store me. How do you store drinking water?

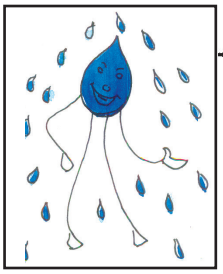


We store drinking water in a vessel and close it with a lid.





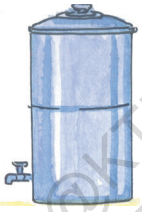
©KTBS NOT TO BE REPUBLISHED



Yes, children. Drinking water should be kept clean. The container should also be clean. Listen here....



Boil the water, cool it and store it in a vessel covered with a lid. Drink only this water to keep good health.



It is better to store drinking water in a container having a tap. So that we can avoid the water becoming dirty with the touch of our hands.



To take water from a big container, use a ladle.

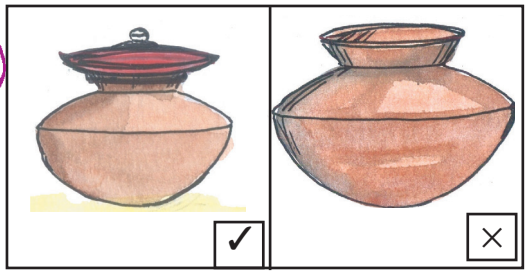
© KTBS NOT TO BE REPUBLISHED

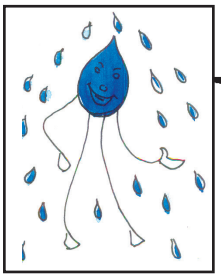


Know this :

We should drink only pure water. The lid of the water container should be closed always. Hands should be washed before taking water from the pot.

Observe this picture





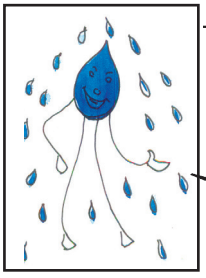
Activity :
Children....measure how much of water you need every day and write here.



O.K dear drop, we will measure.

Daily work	No. of glasses	No. of mugs	No. of pots	No. of buckets
washing hands, legs and face in the morning		5		
drinking	8			
bathing				
washing clothes				
washing dishes				
mopping the floor				
toilet cleaning				
others				
Total				

@KTBS NOT TO BE REPUBLISHED



Do you know how much of water you use everyday at home?

How many of you are there in your home ?



O.K. How much of water do you need in your house in a day? Write here.

members of the family	in glasses	in mugs/ jugs	in pots	in buckets
I				
my mother				
my father				
my brother/sister				
grand father/grand mother/others				
Total				

@KTBS NOT TO BE REPUBLISHED

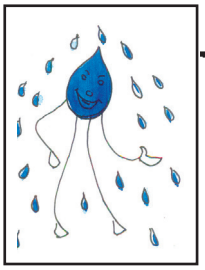


See.... how much of water do your family members and you use everyday ?



Dear children.... have you understood now how important I am? Remember, I am needed not only for you but also for the living beings living on this earth. So don't waste me. Use me carefully. Just as much as you need.

All right,drop of water..... we will always remember what you have told us.



Children. It is time to go home. Convey this to all others at home. Let us meet tomorrow. O.K?



O.K.! Drop of water....Bye, let us meet tomorrow.

Sing and Enjoy

Oh! drop of water, falling from the cloud
Please come and join the pond by flowing.

The oceans, rivers and tanks too
All are sources of water.

We want you to quench our thirst,
Come to our fields and save our crops.
Water for bathing and cooking.
The cow is thirsty without you.

We can't live without you
We save to conserve you,
We won't waste you and dirty you.
All this calls for goodwill from one and all.

© KTBS NOT TO BE REPUBLISHED

LESSON – 5

THE FAMILY OF WATER

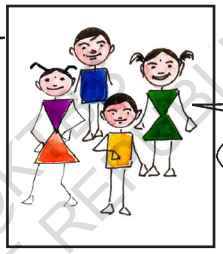
B6D3N2

After studying this lesson you,

- *identify the animals that live in rivers and seas.*
- *observe the responses of plants and animals to rain.*
- *express the response of plants and animals through songs, dance and other cultural expressions.*
- *identify the changes that occur in the quantity of water flow in different seasons.*

@KTBS NOT TO BE REPUBLISHED

Drops of water falling.It may rain,



Oh! drop of water, are you here?



Children.... look at these plants and trees enjoying. If it rains,they will be happy.

Yes, look at them. They are charming.



Drop of water...., today I had been to the river with my sister.

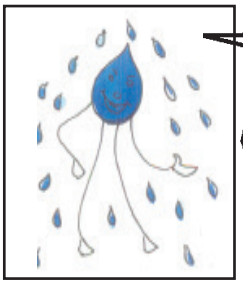


Did you?

The fish, frogs and crabs in the river were also happy.





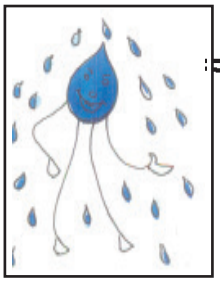


See..... when I come to the earth in the form of rain, all the living beings feel happy, don't they ?



Yes, drop of water

© KTBS NOT TO BE REPUBLISHED



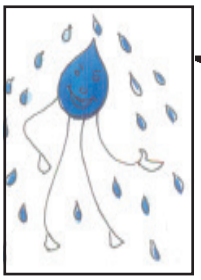
Drop by drop, in the form of rain I come to the earth. I flow in the form of streams and join the rivers. All the rivers flow into the sea. There are different kinds of plants and animals in the rivers and seas.

Activity :

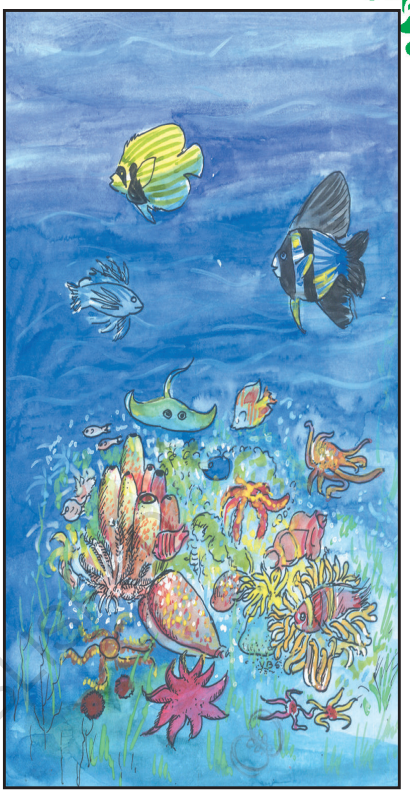
Look here, it is the picture of a river. Identify the animals. Write their names in the space provided.

NOT TO BE @KIDS REPUBLISHED



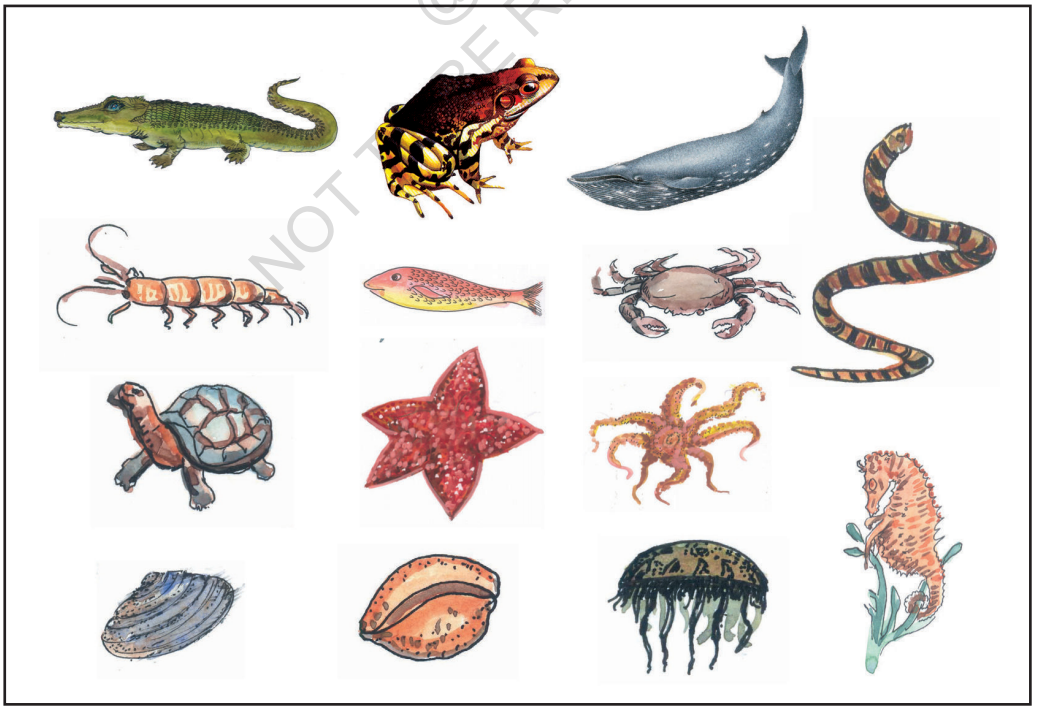


See, here is the picture of a sea. Look at the animals that live in the sea.



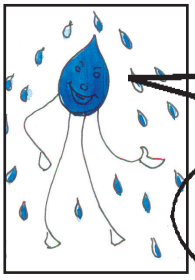
Activity :

Some of the animals are given below. Write their names below their pictures. To place them in the proper habitat, write their names in the suitable column.



@KTBS NOT TO BE REPUBLISHED

 River	 Sea



Have you seen a pond, a river or a sea? Collect the pictures of the plants and animals that live there. Paste them in a used note book and write their names.



© KTPS NOT TO BE PUBLISHED

See,when it rains, everything looks green! The plants and trees grow and become beautiful. The ponds and rivers flow full of water. Oh! How wonderful!

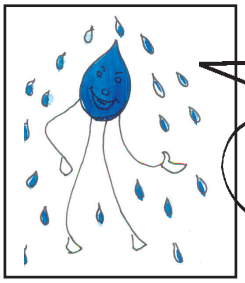
Oh! How many plants and animals are living in water!





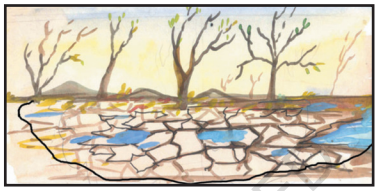
But, it will not be the same in summer.

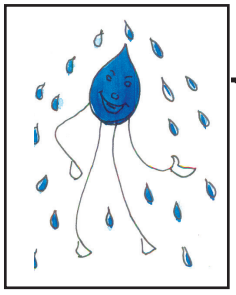




True, ponds and streams will dry-up. There will be less water in the rivers too.

Yes, drop of water!



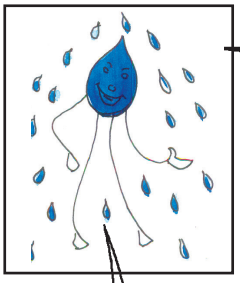


Activity:

There are ponds and rivers in your place, aren't there? To show the level of water in them Put a (✓) mark in the table given below.

© KTPS NOT TO BE REPUBLISHED

Sources of water	Rainy season			Winter season			Summer season		
	High	Average	Low	High	Average	Low	High	Average	Low
River									
Lake									
Stream									
Others									



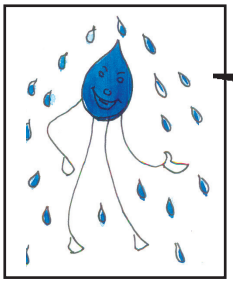
Activity :

Why does the level of water in the rivers, ponds and wells vary during different seasons? Ask your elders and know the reasons.

Children....have you observed plants, trees and animals in different seasons?

Yes, Drop of water. In summer, the plants and trees lose their shine due to the shortage of water. Even the birds and animals lose their liveliness.





During rainy season, the ponds and rivers flow with a lot of water due to rains.During summer, the ponds and rivers become dry due to heat and absence of rain.

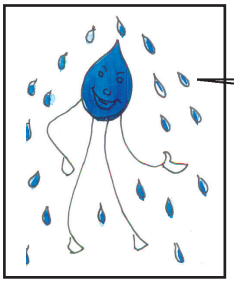
Yes, drop of water.... You are essential for all animals and plants. We also need you.





Yes....I am essential for all. Do you understand it?

© SCERT NOT TO BE REPUBLISHED



Shall we sing a rain song ?

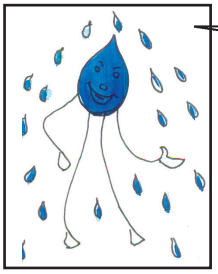
Sing and Enjoy

Rain, Rain, come, come,
The gardens are dry,
Rain, Rain, come, come
No water for banana garden.

Rain, Rain, come, come,
Help us grow crops,
The living beings are thirsty;
They are waiting for you,
Why are you so angry
Come and make them happy.
Rain, Rain, come, come
Help us to grow crops.

The rain fall on the earth
drop by drop
The crops on the earth
grow and grow
There is happiness
all around
The earth is beautiful
with greenery.

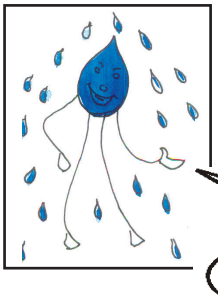
© NCERT NOT TO BE REPUBLISHED



You also write a poem on rain.







What do you do when it rains ?





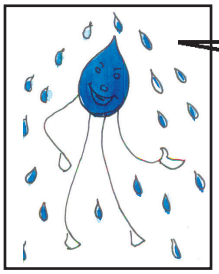








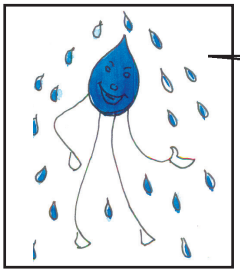
NOT TO BE REPUBLISHED @KTBS



Activity :

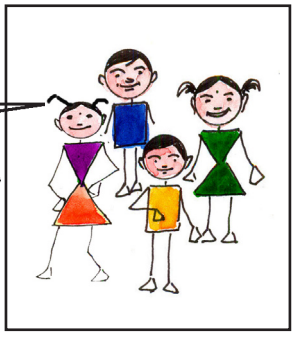
How do the living beings given below react during rain or after the rain? Enact and show it.

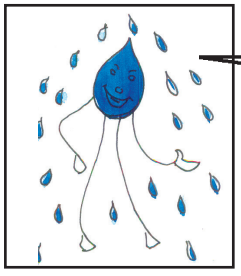
coconut tree	frog
banana plant	fish
grass	cow
pumpkin creeper	tortoise
paddy plant	bird



All right, children.....
I shall proceed forward.

Drop of water..... will you really go?





Yes, I have to go. Please collect small poems on rain, with the help of elders. Sing them melodiously.

@KIBS NOT TO BE REPUBLISHED

LESSON – 6

VARIETY OF FOOD

X3U2I9

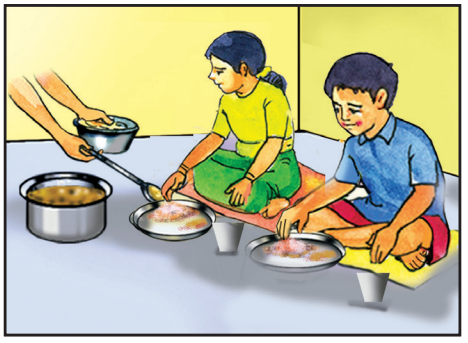
After studying this lesson you,

- *know the varieties of food.*
- *get introduced to the varieties of food used in your districts.*
- *make a list of food obtained from plants and animals.*
- *identify the quantity of food consumed according to sex, age and physical activities.*
- *identify the food of wild animals, domestic animals and insects found in home.*

@ITBS NOT TO BE REPUBLISHED

You know the food items that you eat everyday. Answer the following questions :

1. Write 5 food items that you eat everyday in the space given below.



_____, _____,

_____, _____,

_____.

2. Why do you eat those food items everyday ? Write the reasons in the space given below.

_____

_____

3. Write 5 food items that you eat on festivals or on special days.

_____, _____, _____, _____, _____ .

4. Write 5 food items that you like very much.

_____, _____, _____, _____, _____ .

5. Why do you like them ?

_____

_____

6. Write 5 food items which you do not like.

_____, _____, _____, _____, _____ .

7. Why do you not like them ?

_____

_____

Compare your answers with those of your friends. Are the answers the same? If not, why? Think and write.

_____

_____

_____

_____

@KTBS NOT TO BE REPUBLISHED

Activity : *Make a list of food crops that are grown in your place.*

_____ _____

_____ _____

_____ _____

_____ _____



Know this

- *Food habits differ from person to person. Similary the food habits of people vary from one place to another.*
- *We eat according to the taste, food habits and the crops that grow in that place or region.*

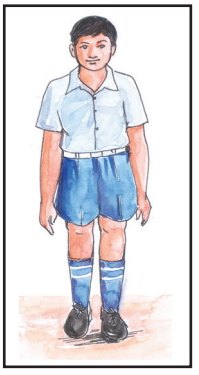
  For example, The people eat more of jowar in the region where jowar is grown in plenty. People who live on the sea shore, eat more of fish. So food habits of people differ from person to person.

© KTBS NOT TO BE REPUBLISHED

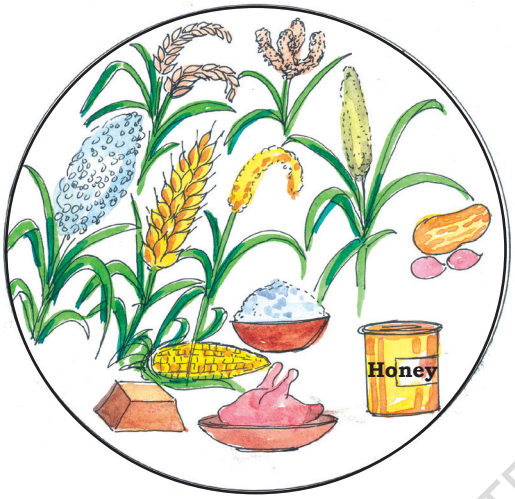
You already know why we need food. The different requirements of food are shown in the pictures given below. Observe the pictures.





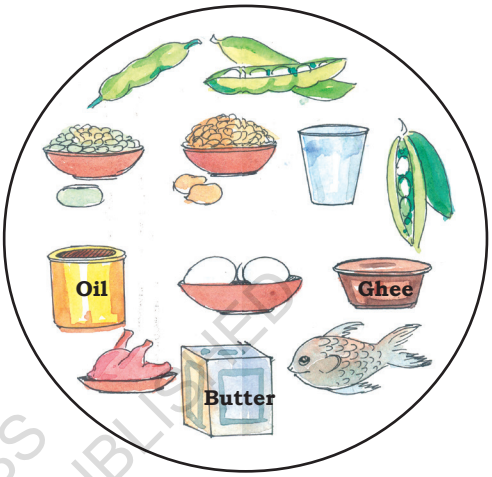


Which are the food items that give us strength ? Which are the food items that help us to grow? Which are the food items that are required to keep healthy? Know this from the pictures given below.



Food items that make us strong

Rice, ragi, jowar, wheat, millets, oil, ghee, sugar, jaggery, meat etc., give us strength.



Food items that help us to grow

Pulses like toordhal, cowgram and black gram, milk, egg etc., help us grow.

@KSEBS NOT TO BE REPUBLISHED

Write the names of other grains that you know.

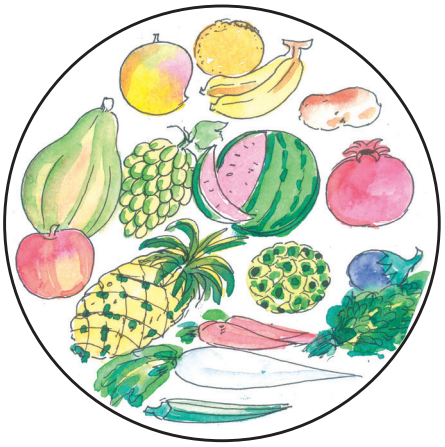
_____ _____

_____ _____

_____ _____

_____ _____

_____ _____



Food items that help us stay healthy

By eating more vegetables and fruits we can avoid diseases.

Know this

- *Raw vegetables, sprouted seeds and fresh fruits keep us healthy.*
- *Drink sufficient quantity of water to maintain good health.*

@KTBS NOT TO BE REPUBLISHED

What did you eat yesterday? Write it in this plate.



Make a list of the food items that are in your plate and your friends' plates

_____, _____, _____, _____, _____,

_____, _____, _____, _____, _____.

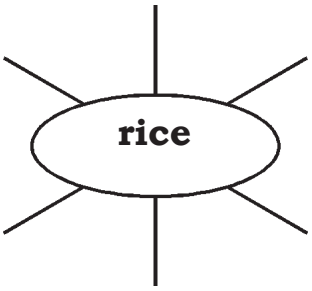
Write the basic food materials used to prepare these food items.

Food item	Basic food material
Example : Roti	ragi/rice/jowar/wheat
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____
6. _____	_____
7. _____	_____
8. _____	_____
9. _____	_____
10. _____	_____

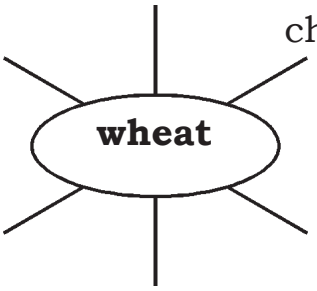
@KTBS NOT TO BE REPUBLISHED

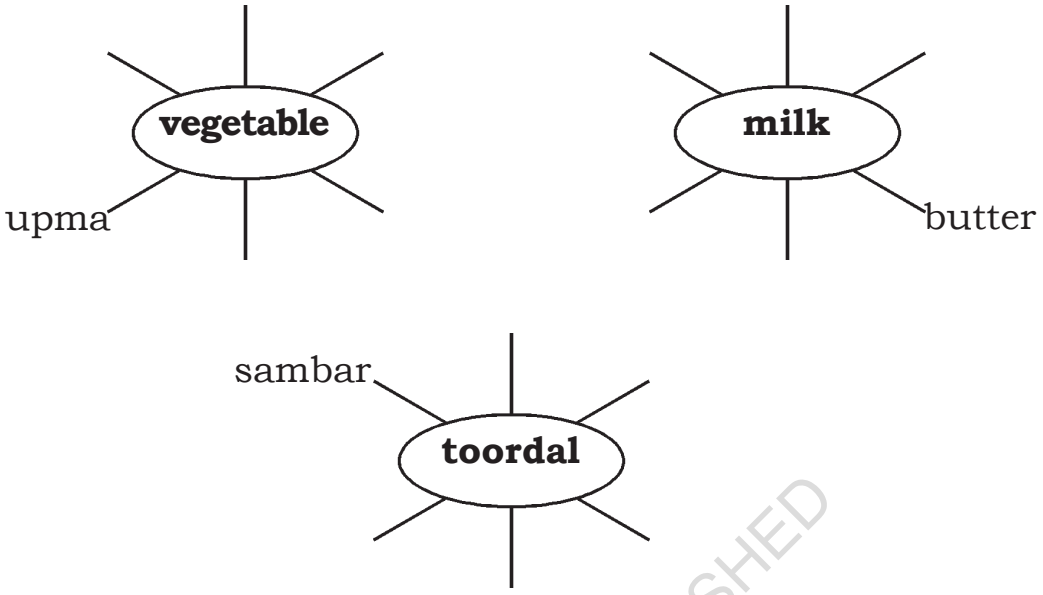
Activity : *Once again observe the list that you have prepared. Get clues from it and fill in the blanks.*

cooked rice



chapathi





Activity : *Do you know where we get the food materials that you have listed?* ***For example,*** *we get rice from the paddy plant.*

Classify the food items that are available in your place as plant source and animal source.

Plant source

Animal source

@KTBS NOT TO BE REPUBLISHED

Play the game :

With the help of your friends, write the names of the food items on small pieces of paper. Stick the picture of an animal that you like on one box and the picture of a plant that you like on the other box.

Distribute the bits of paper among all. Put them into the suitable box.

Observe the quantity of food eaten by young people and elders.

Activity : *Observe the children of different classes eating during the midday meals in your school. Write your observations here.*

@KTBS NOT TO BE REPUBLISHED



know this :

People eat according to their age and the nature of the work they do. The quantity of food eaten by boys and girls of the same age differs.

- What is the food of a baby?

  _____

  Milk is the main and complete food for a child.

- Can you live drinking milk only?

  _____



You have learnt in the previous class that animals also need food like you. Some animals are given below. Write their food in the space given.

	Name of animals	**Food**
1.	dog	_____
2.	cat	_____
3.	cow	_____
4.	monkey	_____
5.	hen	_____
6.	bandicoot	_____
7.	mosquito	_____
8.	lizard	_____
9.	bear	_____
10.	tiger	_____

@KTBS NOT TO BE REPUBLISHED

11. hawk _____

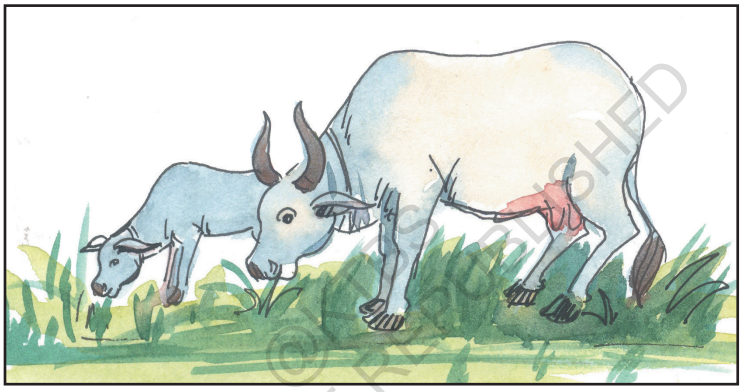
12. snake _____

13. fish _____

14. deer _____

15. frog _____

16. bison _____



Observe the quantity of food eaten by a cow and a calf. In the same way, observe the food and quantity of food eaten by other animals.

Write the names of the domestic animals you know and the food given to them.

Name of the animal	**Food given**
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____

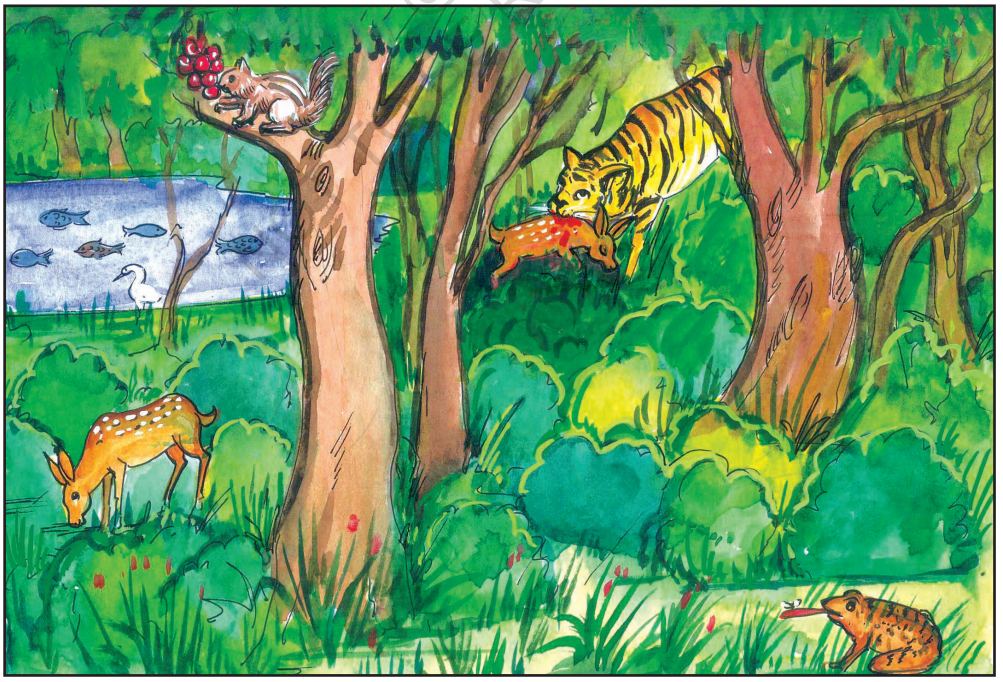
© KSCERT NOT TO BE REPUBLISHED

Play the game :

With the help of your teacher, go to the play ground with your friends and stand in a circle. Each of you receive a chit from your teacher which has the names of animals or their food. Let each one stick the chit on the shirt. When the teacher says 'move', start moving in the circle. When the teacher says 'stop',one who has the picture of the animal should stand near the other who has the picture of its food. Those who missed to do so will be out of the game. Others will continue the game.



@KTBS NOT TO BE REPUBLISHED



Know this :

- *Animals which eat plants and their products are called* ***herbivorous animals.***
- *Animals which eat other animals and their products are called* ***carnivorous animals****.*
- *Animals which eat both plants and animals and their products are called* ***omnivorous animals****.*

Activity : *Here is a problem. The animals are tied with a thread to the food they eat. As the thread is knotted, it is difficult for them to find their food. Can you help them to find their food?*



@KTBS NOT TO BE REPUBLISHED

Activity : *Here are the pictures of a few animals. There are 3 bags in the middle. Divide these animals on the basis of their food habits. Then draw a line to the bag related to the animals.*



© TBS NOT TO BE REPUBLISHED

LESSON – 7

OUR KITCHEN

F9V6Z2

After studying this lesson you,

- *identify the different utensils and fuels used to prepare food.*
- *identify the different roles of the family members in preparing food.*

You have learnt in the previous lesson that all living beings need food.There are different types of food. People of different places have different food habits. Now let's know how food is prepared in your home.

@KEBS NOT TO BE REPUBLISHED

- Who helps in cooking food in your house ?

_____

_____

_____

- How do you help in cooking ?

_____

_____

_____

- Name 5 things that are used for cooking in your house.

_____, _____, _____,

_____, _____ .

In this picture, Ramu, his sister, his father and his mother are cooking together. Answer the questions with the help of the picture :



- What type of work are they doing?

  mother _____ father _____

  Ramu _____ sister _____

- Write the names of the things that are seen in the picture.

  _____, _____, _____, _____, _____,

  _____, _____, _____, _____, _____ .

- Here is a list of different materials used for cooking. Put a (✓) mark to the ones you see in the above picture.

cup	spoon	water container
steel vessel	plate	glass bowl
water drum	pot	pot
gas stove	knife	charcoal stove
cooker	ladle	vegetable cutter stand
firewood stove/oven	tongs	kerosene stove.
chapathi roller stand	flour stirrer	chapathi roller

@KTBS NOT TO BE REPUBLISHED

Make a list of all the utensils used in your house to prepare food.

_____, _____, _____, _____,

_____, _____, _____, _____,

_____, _____, _____, _____,

_____, _____, _____, _____.

Activity : *How will you help?*



1. Preparing lime juice

brother	*sister*	*I*
cut the lemon	*brought sugar and water*	

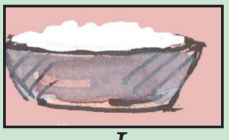
2. Preparing hot chapatis



I	*father*	*mother*
	kneads the flour and makes dough balls	*rolls the dough balls into chapati*

sister	*all of us*
cooked the chapathi on the pan	*ate the chapathis together*

3. Cooking rice



grandpa	*I*	*sister*
put the rice in a bowl		*Mix water to the rice, put the vessel on the stove and prepared rice*

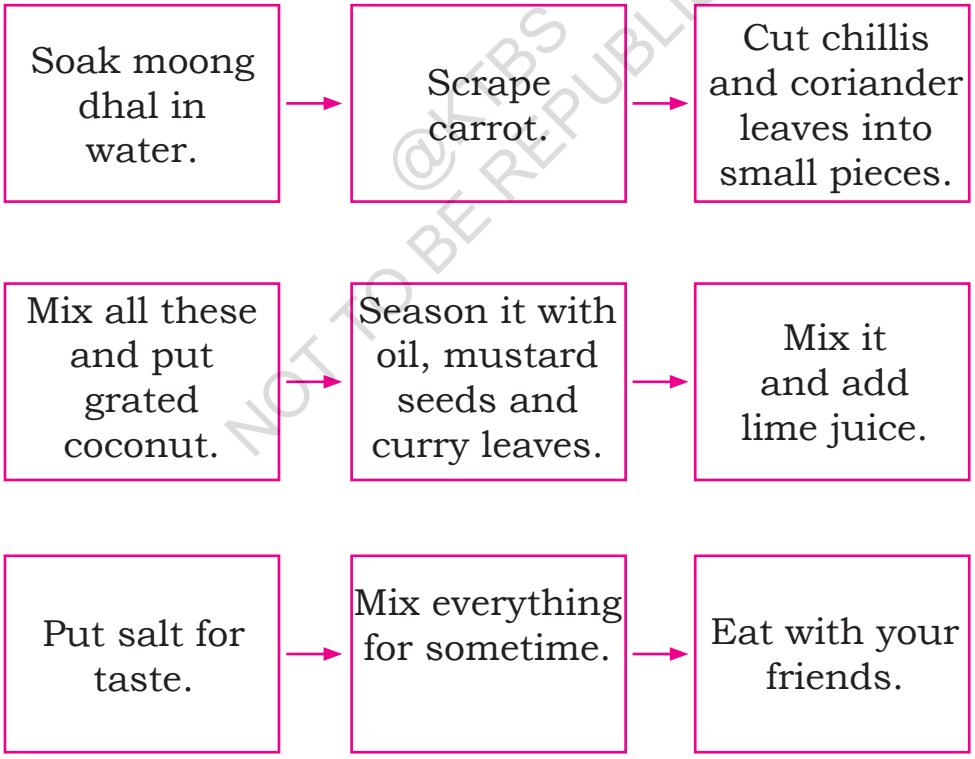
@KTBS NOT TO BE REPUBLISHED

- Have you eaten raw (uncooked) food ?

  _____

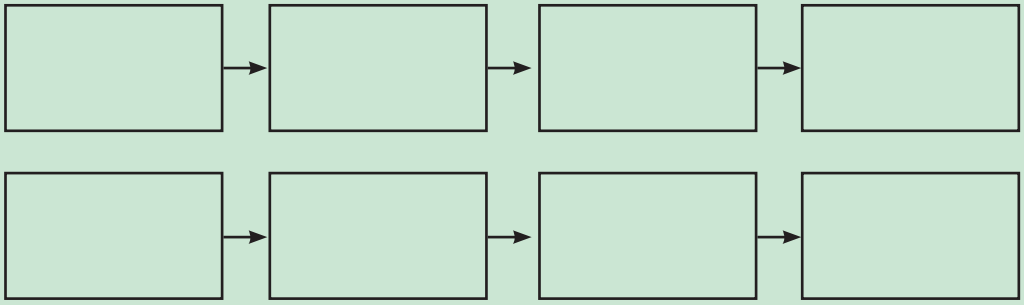
- Name 3 raw food items that we can eat.
  (Remember what you learnt in the previous class)

- Now your friend Latha is going to tell us the method of prepaing moongdhal Kosambari.

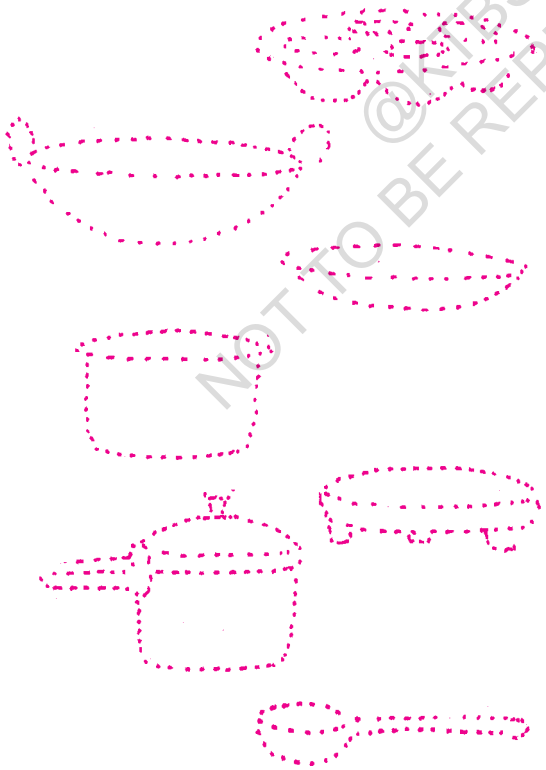


@KTBS NOT TO BE REPUBLISHED

Activity : *Write the procedure of preparing any food item that you know.*



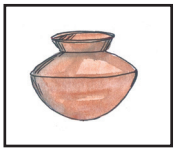
Activity : *Join the dots given in the picture and colour them. Write the names of the utensils in the space provided.*

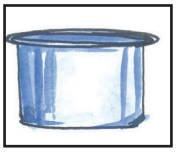


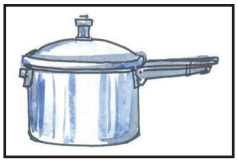
1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

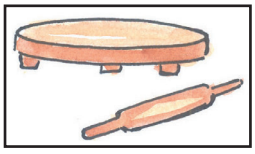
@KTBS NOT TO BE REPUBLISHED

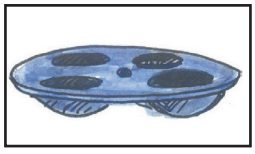
Which items of food can be prepared using the utensils shown in the pictures.

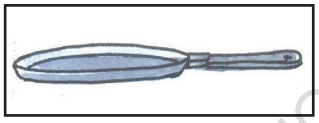












_____ _____ _____

_____ _____ _____

_____ _____ _____

_____ _____ _____

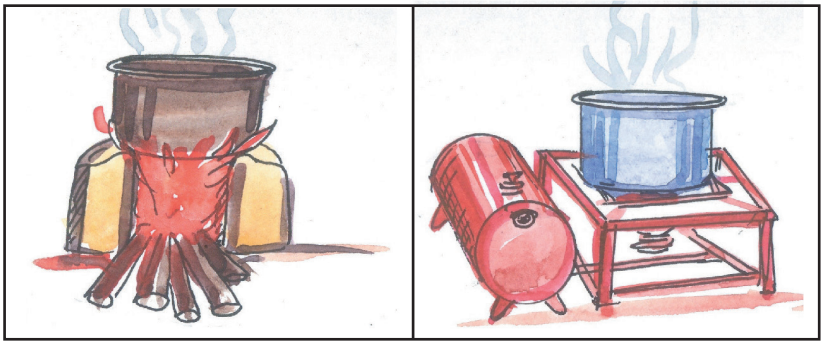
_____ _____ _____

_____ _____ _____

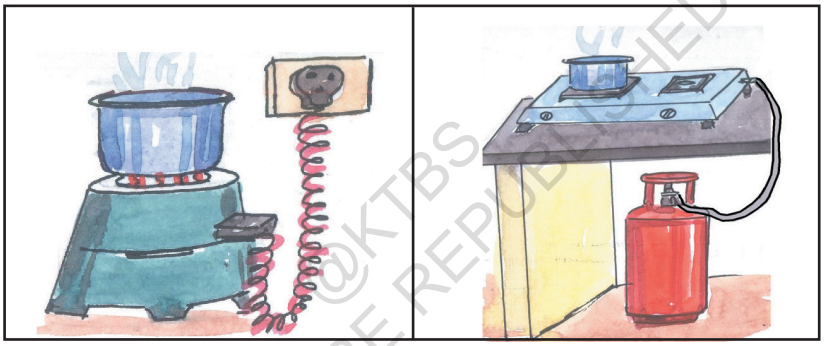


@KTBS NOT TO BE REPUBLISHED

How is the flame produced in these stoves?



_____ _____



_____ _____

Firewood, kerosene, electricity and gas are the fuels, used to prepare food.

Which are the fuels that are used in your house for cooking?

_____

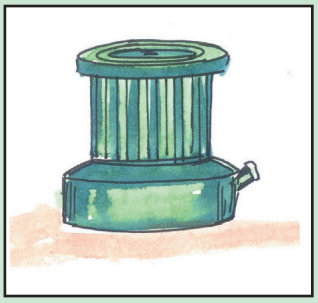
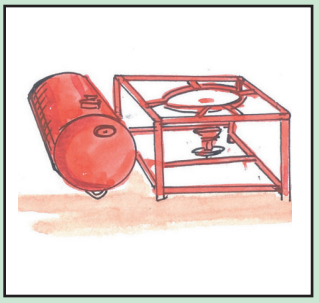
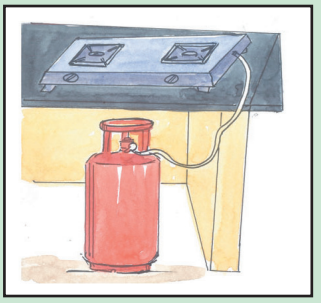
Which are the other fuels that are used for cooking ?

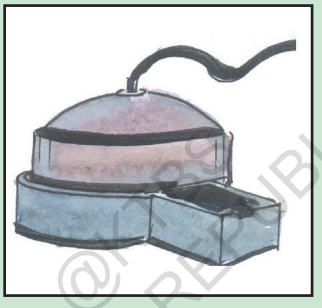
_____

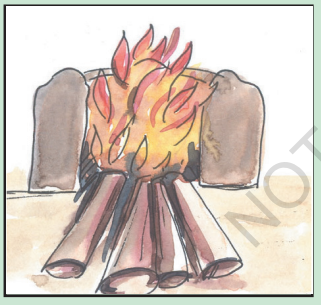
Firewood, cowdung cakes, kerosene, electricity, gas, gobar gas, charcoal are the important fuels used for cooking .

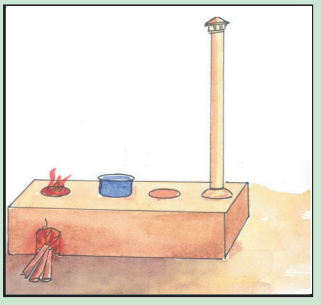
© KTBS NOT TO BE REPUBLISHED

Activity : *Each fuel has to be used in a particular kind of stove. Observe the pictures given below. Then mark as the instruction given below.*





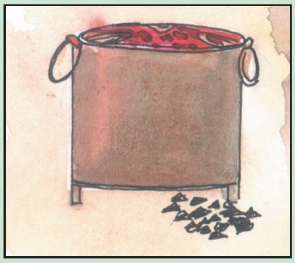


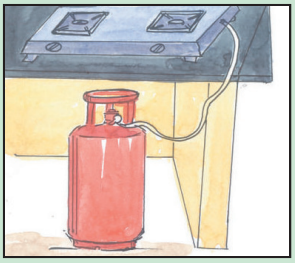
- Put ◯ mark to the stoves that are used in your house for cooking.
- Put ▭ mark to the stoves that are used in your friend's house.
- Put △ mark to the stoves/tools that you have seen.

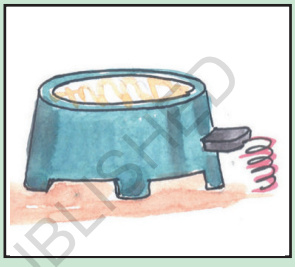
@KTBS NOT TO BE REPUBLISHED

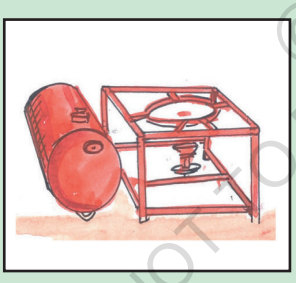
Activity : *Name the fuel which is used in these stoves.*

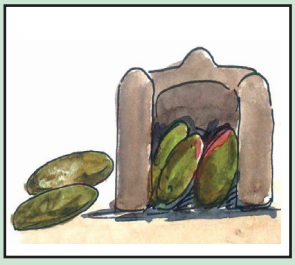


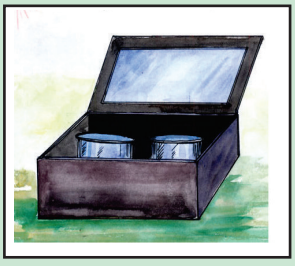












@KTBS NOT TO BE REPUBLISHED

LESSON – 8

LET US BUILD A HOUSE

I7G3V5

After studying this lesson you,

- *identifiy the different types of houses.*
- *get introduced to the different materials used for the construction of a house.*

You know about your house. You have seen different types of houses in your locality. Some of them are shown below. Identify them and write their names in the space provided.















@KTBS NOT TO BE REPUBLISHED

Activity : *Which are the materials used to build the houses that are shown in the pictures? Make a list of them with the help of your friends.*

Type of house	Materials used
1. _____	_____, _____, _____, _____.
2. _____	_____, _____, _____, _____.
3. _____	_____, _____, _____, _____.
4. _____	_____, _____, _____, _____.
5. _____	_____, _____, _____, _____.
6. _____	_____, _____, _____, _____.
7. _____	_____, _____, _____, _____.

@KTBS NOT TO BE REPUBLISHED

Do it yourself :

Visit different types of houses in your locality with your friends. See the materials used there. See the houses which are under construction. Observe the materials used there.

How are the houses constructed? Explain in your own words.

_____

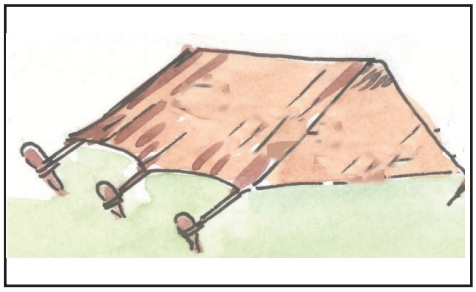
_____

_____

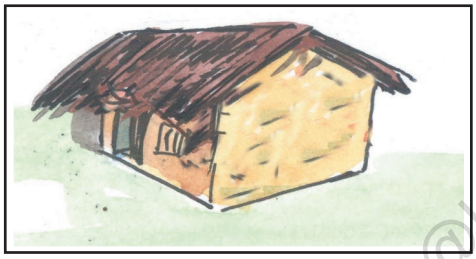
_____

_____

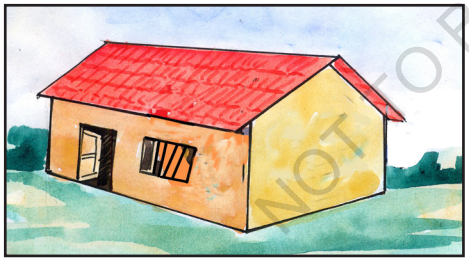
The pictures of different houses are given below. There is information also beside the picture. Fill in the blanks and complete the information.



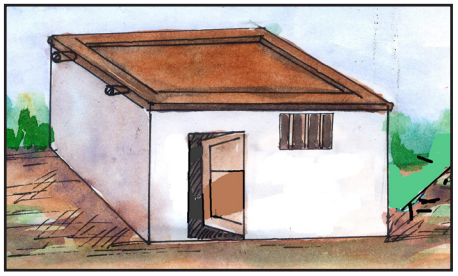
I am a tent. I am not a permanent house like other houses. You can stay inside me for some time! To build me ____, ____, ____, ____, ____ are enough. It is also easy to shift me from one place to another.



I am a hut. Too many materials are not needed to build me. For my construction ____, ____, ____, ____, ____, are enough. I am very simple.

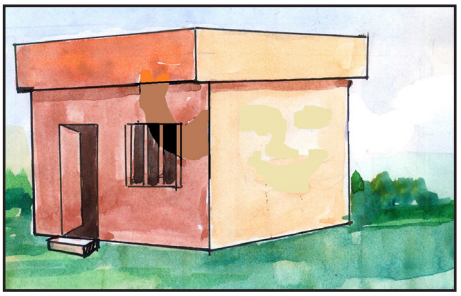


My roof is made of tiles. The materials required to build me are ____, ____, ____, ____, ____, ____, ____, ____, ____.



My roof is thick. It will be cold in summer and warm in winter. Do you know why? My roof is built with ____, ____, ____, ____, ____.

@KTBS NOT TO BE REPUBLISHED



Look at my terrace. How nice ! I can resist heat, rain and wind. Therefore many people appreciate me. Make a list of the materials needed to build me.

walls _____, _____, _____, _____, _____.

doors _____, _____, _____, _____, _____.

windows _____, _____, _____, _____, _____.

roof _____, _____, _____, _____, _____.

floor _____, _____, _____, _____, _____.

© KTBS NOT TO BE REPUBLISHED

Sing and Enjoy

The tent is easy to carry
A hut is easy to build
House of red and brown tiles
House with a thick roof
Terraced house with cement
All houses are beautiful
All of us need a house to live in.



LESSON – 9

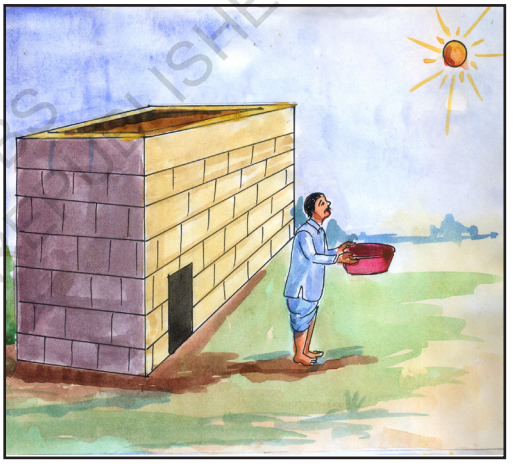
PRETTY HOUSE

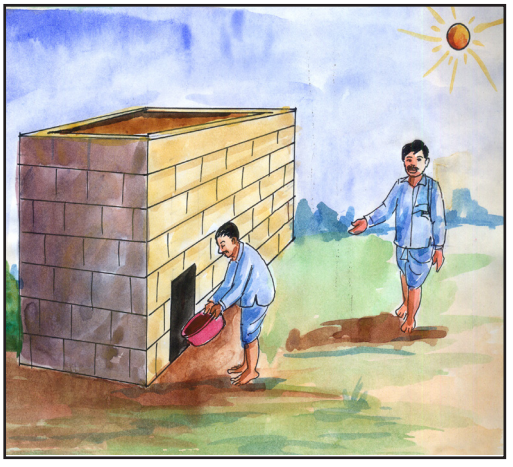
G6R3E8

After studying this lesson you,

- *identify the features of a good house.*
- *know the method of decorating the house according to different cultures.*

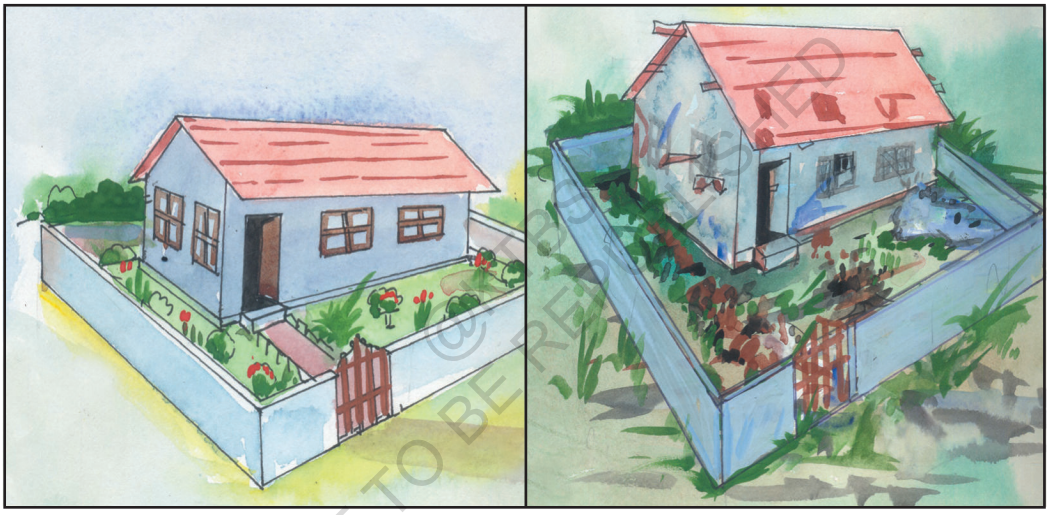
Once a man wanted to build a strong house. He built a terraced house using bricks and steel. Later he went inside the house. It was very dark! It had no ventilation. To get light and air, he took a big vessel and held it outside the house. After sometime thinking that the vessel contained light and air he took the vessel in and poured the light and air in the house. He did this several times, but there was no light and air. A wayfarer saw him and laughed. He helped him get enough light and air. What might the wayfarer have done to get light and air? Explain in your words.





© KTBS NOT TO BE REPUBLISHED

Know the features of a good house and write here.



Look at the two houses. Which house do you like to live in? Why ? Write in the space given.

© SCERT NOT TO BE REPUBLISHED



Know this :

How should a good house be ?

1. *There should be sufficient light and fresh air in the house. So it should have large windows and doors.*
2. *There should be sufficient space around the house. There should be a kitchen garden in this space.*
3. *There should be protection from thieves and robbers. So the windows and doors should be strong.*
4. *To avoid the worms and insects, the house should be cleaned everyday.*
5. *To protect it from rain and to avoid the entry of snakes and rats, the roof should not have cracks or holes.*
6. *Wastes should not be put around the house. It should be swept and the surroundings kept clean. The wastes must be put in the dustbins. The wastes in the dustbins should be kept far away from the house.*
7. *Care should be taken to avoid the stagnation of water around the house and in the drainage. Dunghills and drainage stagnation around the house should be avoided.*

© KSEEB NOT TO BE REPUBLISHED

- What kind of waste gets collected in your house?

  _____, _____, _____, _____, _____.

- How do you dispose of the waste of your house ?

  _____, _____, _____, _____, _____.

- How do you keep your school clean ?

  _____

  _____

- What kind of waste gets collected in your school?

_____

_____

- Where do they dispose of the wastes of your school?

_____

_____

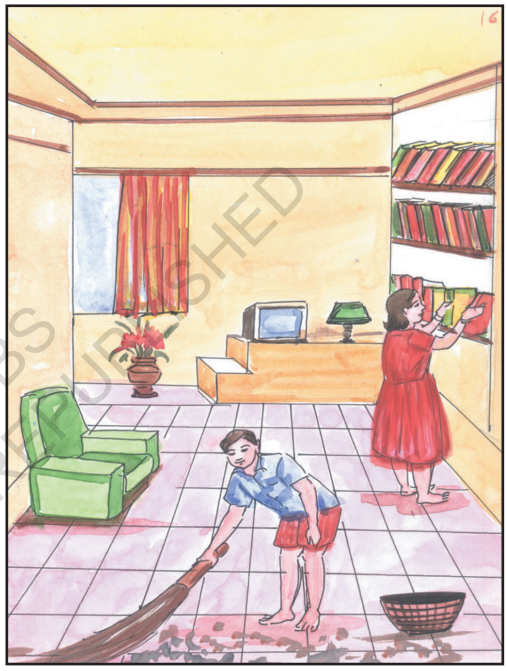
Priya is studying in class 3. Her house is very clean. She puts different kinds of rangoli every day in front of her house. On festivals she puts rangoli using different colours, so it looks very attractive. On holidays she keeps flowers in flower vases. She decorates the doors with buntings of mango leaves on festivals. She has kept the dolls also inside the house. The things in the house are arranged properly. Her house is very beautiful. She likes to decorate the house.

©KTBS NOT TO BE REPUBLISHED



Write 4 lines about the decoration of your house.

How do you help your elders to keep your house clean ?



@KTBS NOT TO BE REPUBLISHED

Activity :

- *Visit your friends' houses and observe the decoration of their houses.*
- *How do you and your friends decorate the house on festivals and special days ? Explain.*

Activity : *Observe the pictures. Write the speciality in the decoration of these houses.*



_____

_____

_____

_____

Activity : *This is a shop where decoration items of the house are sold. Put a (✓) mark on the items which you want to decorate your house with.*



© KTBS NOT TO BE REPUBLISHED

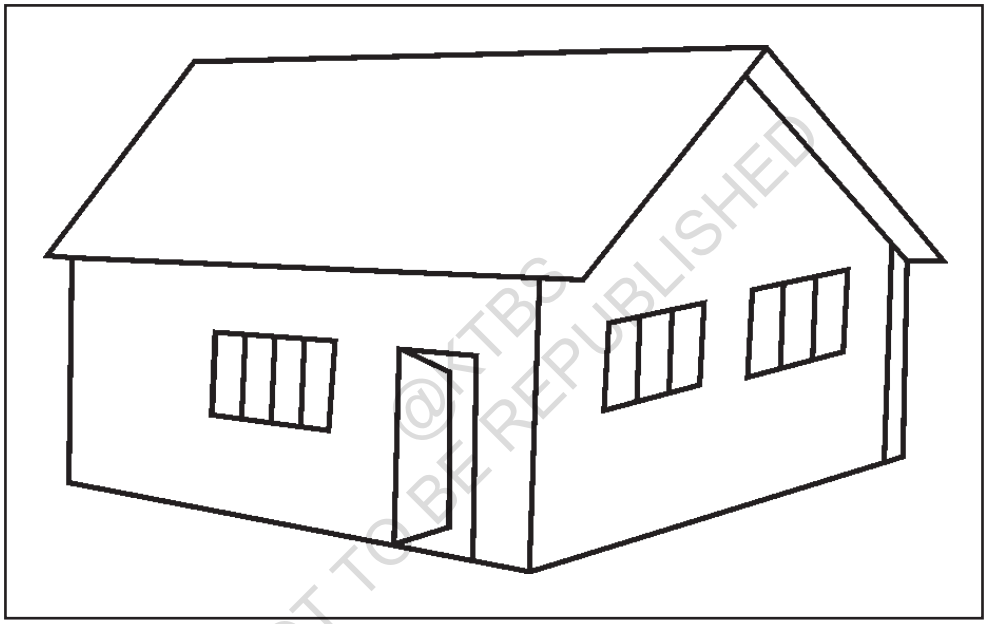
- Make a list of the things that are needed to decorate a house.

  _____, _____, _____, _____,

  _____, _____, _____, _____,

  _____, _____, _____, _____.

- Decorate the house given in the picture.



@NTBS NOT TO BE REPUBLISHED

Do it yourself :

Make a model of a house with your friends, using mud, card board, clay or plaster of paris. Then decorate the house with your friends.

LESSON – 10

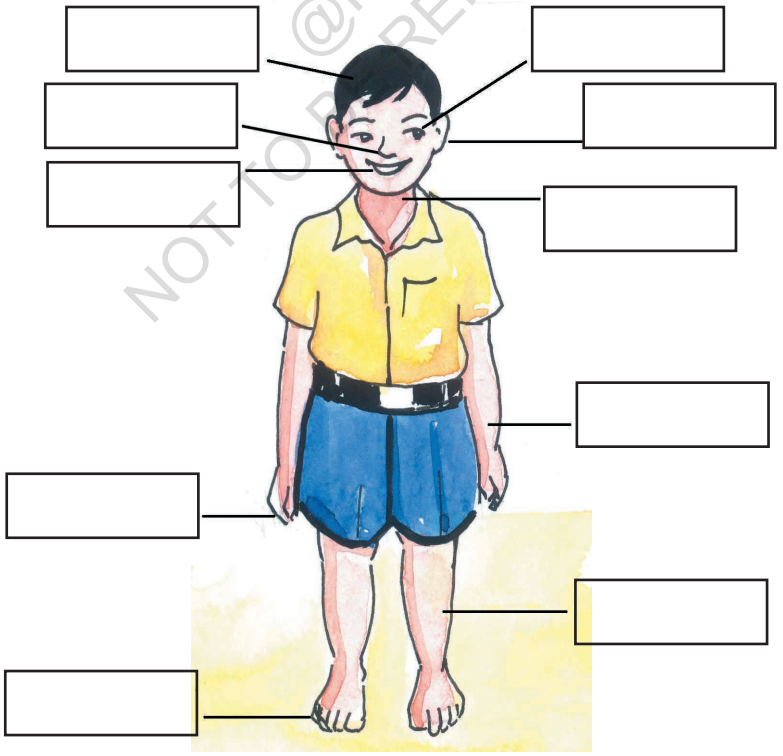
OUR SENSE ORGANS

U9A4J1

After studying the lesson you,

- identify the sense organs of the body and understand their functions.
- understand the need of cleanliness and protection of sense organs.

The teacher of class 3 was on leave. Students were making a lot of noise. One of the other teachers came to the class to stop the noise. He asked the students to identity the parts of the body. You have already identified the parts of the body in class 2. With your friends, identify the parts of the body given in the picture.



NOT TO BE REPUBLISHED @KTBS

You have identified the parts of the body, haven't you ? Now sit down silently. Write here what you have observed or experienced.

For example, the fragrance of a flower, the sound of a bus, sight of a kitchen garden.

_____

_____

How did you get these experiences ? Which organs helped you to exprience them ? Write in the space given.

_____

_____

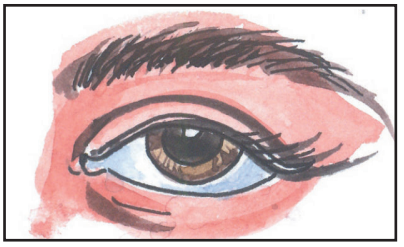
Eyes :

A few children were playing the blind fold game. When Chitra was blind folded, she suddenly screamed, "Oh, I can't see anything ! How can I search ?

Why did Chitra not see anything ?

_____

_____



@KTBS NOT TO BE REPUBLISHED

Blind fold yourself. Try to identify your friends or things. Share your experiences with your friends.

Know this :

- Eyes help us to see the surrounding environment.
- They help us to identify the sizes, shapes, and colours of the things and their distance from us.

When Manju was coming to school, some dust fell into his eye. He rubbed it.The eye became red and started watering. The teacher took him to the doctor. The doctor treated him immediately. He also gave him some information about the eyes, “Eye is a very sensitive part. If dust, insects, etc., enter the eyes you should not rub it. It causes problem to the eye. You should wash the eye with clean water and consult a doctor. You should take care of your eyes.”

Take care of your eyes.

Put a (✓) mark to the pictures which are right and (×) mark to the pictures which are wrong.








Discuss with your friends what you learnt from the above pictures.

Ears :

Blindfold the eyes of your friends. Produce different sounds like ringing of the bell, cry of a bird, blowing of a whistle etc., Ask your friends to recognise the sound. In the same way ask them to identify the other sounds also. They should also say the direction from which the sound is coming.

Know this :



- Ears give us a sense of sound.
- With the help of the ears we recognise various sounds.

Dhoom ! blasted the cracker. Tommy, frightened by this sound, started to run in the direction of the sound. A bursted particle fell on Tommy's ear and wounded it. Tommy was Chandana's pet dog. Chandana took Tommy to the Veterinary doctor immediately. The doctor treated Tommy's ear and showed a poster to Chandana about the "Protection of ears."

© SCERT NOT TO BE REPUBLISHED

Protection of ears



✗



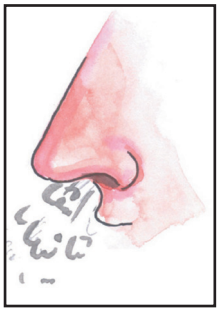
✓



✓

Observe the above pictures. Why have they put the (✓) or (✗) marks below them.

Nose :



Get a flower or a leaf that has good smell. Rub it against your palm and keep it in your palm. It is good to take jasmine flower, tulasi, curry or eucalyptus (nilagiri) leaves which have strong smell. Ask your friends to identify what is in your palm. Ask them to know how they identified it.

Know this :

- The nose smells everything.
- The nose is an essential organ of respiration.

Make a list of 10 items that we can identify by their smell.

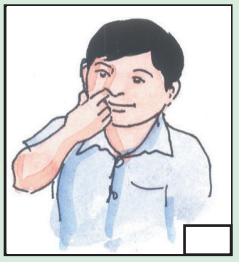
_____, _____, _____, _____, _____,

_____, _____, _____, _____, _____.

Can you smell when you have cold ? Try smelling.

Activity : Identify whether the activities given in the picture are right (✓) or wrong (×). If it is wrong, write below the picture why it is wrong.






_____ _____ _____ _____

_____ _____ _____ _____

_____ _____ _____ _____

@KTBS NOT TO BE REPUBLISHED

Tongue :

Today there is something special in the midday meals in Ramesh's school. There is payasa, lemon rice, chilli bonda, bitter gourd gravy etc., Which of these items do you like most? Why?

Write the taste of these items.

payasa _____

lemon rice _____

bittergourd gravy _____

chilli bonda _____

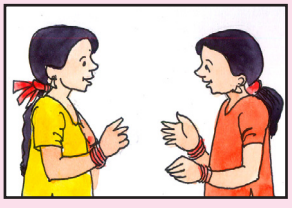
How do you know the tastes of these items ? For what other functions do you use your tongue?

@KTRS NOT TO BE REPUBLISHED

Know this :



- Tongue helps to taste food items.
- Tongue pushes the food items towards the teeth to chew.
- Tongue helps us to speak.



Try to speak without using your tongue.

Activity : There are a few sentences below. Read them carefully. Correct the wrong sentences and write them.

1. When we brush our teeth everyday, we should not clean our tongue with our fingers. This will prevent emission of foul smell.

_____

_____

_____

2. After taking food we should not wash our mouth. This will help us to keep the tongue and teeth clean.

_____

_____

_____

3. We should eat food items which are too hot and too cold. This will help the tongue to taste it better.

_____

_____

_____

4. If you keep sharp things in your mouth, tongue will not be wounded.

_____

_____

_____

© @KTBS NOT TO BE REPUBLISHED

Skin :

"Mummy, it is paining!" cried Tara. Everyone around was surprised. Tara pointed at Asha and said that she had pinched her. Why did Tara experience pain when Asha pinched her?

How will you know that the food served to you is hot or cold?

Blindfold your eyes and start touching the things that you come across. Will you be able to identify them?

How were you able to identify them?

Know this :

- Our entire body is covered with skin.
- We feel hot, cold, softness and hardness of things when they come in contact with the skin. We also experience touch and pain.



© KTBS NOT TO BE REPUBLISHED

How do you protect your skin ?

Fill in the blanks with appropriate words.

1. We take bath and keep our body_____.
2. Eating fruits and vegetables keep our skin _____
3. If we don't keep our skin clean, we may get _____ diseases.
4. Taking oil bath once in a while will keep our skin _____
5. We experience _____ when a blade or any sharp objects touch the skin.

Know this :

Eyes, ears, nose, tongue and skin help us to see, hear, smell, taste and touch. Therefore these five organs are called as sense organs.

Activity : Observe the pictures. Match them with suitable sense organs,



@KTBS NOT TO BE PUBLISHED

Draw simple line diagrams of sense organs in your note book.

Read the posters about the sense organs when you go to the hospital.

There are a few people who are not able to see and hear. They may need special facilities. Do not tease them. Show compassion.



© TSTBPUBLISHED

LESSON – 11

IMPORTANCE OF TEETH

W2I5A3

After studying this lesson you,

- know the importance of teeth, types of teeth, and their functions and develop the habit of cleaning your teeth.

A rabbit and a dog were friends. One day they were walking near a pond.

Rabbit : Oh ! The grass has grown in plenty. I will eat quickly.

Dog : Oh ! See there, a large piece of flesh. I will bite it and eat.

(The rabbit was surprised to see the dog tearing the flesh.)

Rabbit : Oh, my friend how quickly you tear the flesh!

Dog : Look at my teeth. They are so sharp. But I can't eat grass like you.

Rabbit : (Laughing) Look at my incisors. These help me cut the grass.

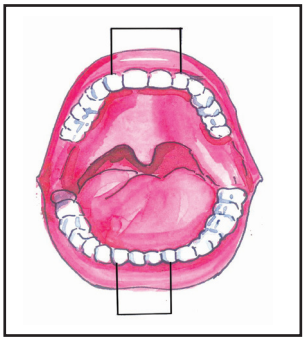
Dog : It's true. Just as my canines help me tear the flesh.

You have heard the conversation of the dog and the rabbit. Now stand in front of a mirror and observe your teeth.

Look at your friend's teeth. Count how many teeth are there. Are all the teeth alike ? Observe the front teeth.

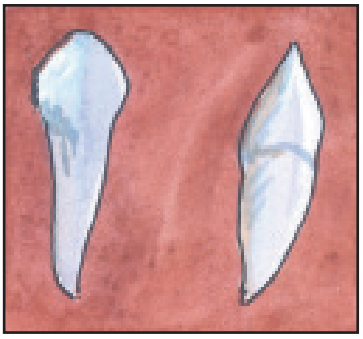
@KTBS NOT TO BE REPUBLISHED

These are broad. They have sharp edges. These are incisors. How many incisors do you have?



Observe the function of these teeth when your friends are eating fruits and vegetables.

Incisors help to cut the food items.



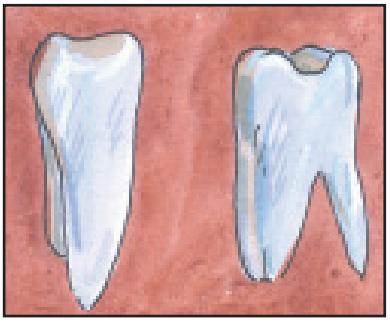
Observe the teeth next to the incisors in your friend's mouth. These are a little long and sharp, aren't they? These are canines. Observe the function of these teeth when your friends are eating hard items like sugarcane.

@KTBS NOT TO BE REPUBLISHED

Canines help to tear the food.

The canines in dogs, tigers and other carnivorous animals are very long and sharp. Why ? Think about it.

Chew a piece of coconut. In which part of the mouth do you chew? The teeth which are in the part of jaws are molars.Observe the molars in your friends' mouth. They are big and flat.



Molars help to grind the food

Activity : Observe the mouth of old people, who have lost their teeth. Observe which type of food items they eat and how they eat.

Do it yourself :

With the help of your teacher or friends prepare a model of a set of teeth (denture) using clay. Then name their types.

Karim is a seven months old baby. Now his teeth are appearing. These are milk teeth. John is 8 years old. His teeth have started falling and in their place new teeth are appearing. Now John has 20 teeth. Now Suresh is 35 years old. He has 32 teeth. Now Rangajji is 70 years old. Some of her teeth have fallen. They will not grow again.

© KTBS NOT TO BE REPUBLISHED

Activity : Count your teeth and write. ☐

Count your teeth that have fallen and write. ☐

The total teeth that you have ☐



Know this :

The teeth that appear in children of 1 year to 6 years are milk teeth. They start falling from the age around 7-8 years. New teeth will appear in their place. These are permanent teeth. If the permanent teeth fall, they will not grow again. So we have to protect the permanent teeth. An adult person has totally 32 teeth. Among them 8 are incisors, 4 are canines and 20 are molars. Small children have totally 20 milk teeth.

Kanthi is studying in class three. She was very fond of sweets. She was eating chocolates and other sweet items everyday. She was lazy too. She did not brush her teeth properly. She did not wash her mouth after eating sweets. Gradually food got struck between the teeth and a foul smell started to come from her mouth. Teeth started to decay. This caused pain in her teeth, bleeding and pus in gums. Her father took her to a dentist. The dentist examined her teeth and told, "Kanthi, You are not brushing your teeth daily after eating food. The food particles get struck between the teeth. You are also not cleaning your teeth immediately after eating sweets. So three of your teeth have decayed.There is a foul smell in your mouth. I have to remove two of them. I will treat the other teeth suitably.

©KTES
NOT TO BE REPUBLISHED

What should Kanthi have done to save her two teeth?

_____

_____

_____

_____

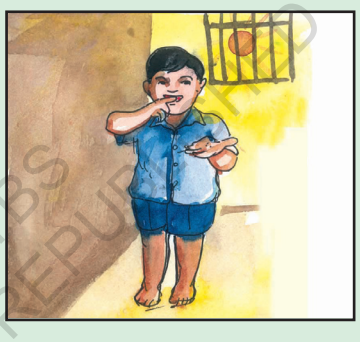
- Teeth help to increase beauty of the face.
- Teeth help us to pronounce correctly.

Activity : Observe these activities. Put (✓) mark to the right ones and (×) mark to the wrong ones in the boxes given.

















© KTBS NOT TO BE REPUBLISHED

Know this :

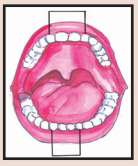
- Eat hard food items such as raw carrot, sugarcane, dry coconut etc., once a while. The teeth and gums are exercised and remain healthy. Drinking milk will also keep the teeth strong.
- If you have any problem with teeth, consult the dentist immediately.
- If there is a dentist in your locality, get information about the cleaning of teeth.

Activity : With the help of your friends, prepare a poster about the cleanliness of teeth and display it in your class.

Observe the cleanliness of teeth of 10 of your friends everyday for a week. Tell them whose teeth are not clean and about the necessity of cleanliness of teeth.

NOT TO BE REPUBLISHED @KBPS

Sing and Enjoy



Teeth, Teeth, the incisors
To bite vegetables and fruits.



Sharp and long Canines
To tear the sugarcane



Just behind them are molars
To grind the food really soft

I know you help one and all
To chew their food and eat it up.

LESSON – 12

DANGER - ACCIDENT

U1T4T6

After studying this lesson you,

- identify the situations of accident in the house and outside.

Observe the pictures given below. What is happening in each of the pictures? Write in the space provided. Why did this happen? Think.









©KTBS NOT TO BE REPUBLISHED







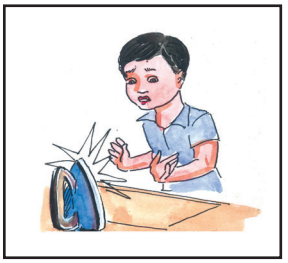






@KTBS NOT TO BE REPUBLISHED





These are all situations of accidents. Some may occur inside the house and others may occcur outside the house. They are dangerous.

Activity :

- *Have you or your friend ever been in such a dangerous situation before? Discuss your experiences with your friends.*
- *Collect the information from the news papers about the accidents occured as a result of burning crackers and display it in the notice board of your school.*



Know this :

- *Don't board a moving vehicle.*
- *Follow the queue to board a bus.*
- *Don't put your head or hands outside the window, while you are travelling in a vehicle.*
- *Don't play in the streets.*
- *While going near the well, tank, pond, or river you should be with your elders.*

Make a list of precautionary measures that you have learnt from your experiences and the experiences of your friends.

If we are careful, we can avoid accidents.

© KSEEBS NOT TO BE REPUBLISHED

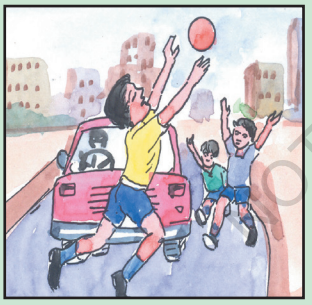
Activity : *In the situations given below, put a (✓) mark to the right siuations and (×) mark to the wrong situations. Discuss these situations with your friends.*

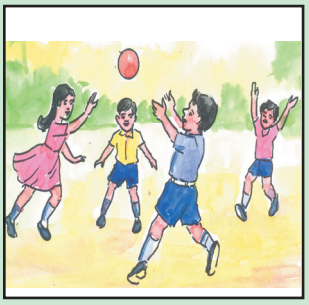
















@KTBS NOT TO BE REPUBLISHED

Sing and Enjoy

Swinging and swinging
Up and down
Vyshali pushes it fast
Shalini fell down.

Up and down the tree
Playing the monkey prank
Climbing and slipping
He fell down.

Leg got fractured
Can't walk oh! friend.
It has to be plastered
Be careful my friend

Bursting the cracker
Enjoy with pleasure
The cracker bursted
With a great sound.



Dum, Dum, sui, sui, cracker
Go round on the floor
Trying to escape
The cracker hit the eye.

Oh! the eye got burning
The doctor bandaged around
I can't see and can't play
No more crackers in future.

NOT TO BE REPUBLISHED @KTBS

Constitution of India

Part IV A (Article 51 A)

Fundamental Duties

It shall be the duty of every citizen of India —

(a) to abide by the Constitution and respect its ideals and institutions, the National Flag and the National Anthem;

(b) to cherish and follow the noble ideals which inspired our national struggle for freedom;

(c) to uphold and protect the sovereignty, unity and integrity of India;

(d) to defend the country and render national service when called upon to do so;

(e) to promote harmony and the spirit of common brotherhood amongst all the people of India transcending religious, linguistic and regional or sectional diversities; to renounce practices derogatory to the dignity of women;

(f) to value and preserve the rich heritage of our composite culture;

(g) to protect and improve the natural environment including forests, lakes, rivers, wildlife and to have compassion for living creatures;

(h) to develop the scientific temper, humanism and the spirit of inquiry and reform;

(i) to safeguard public property and to abjure violence;

(j) to strive towards excellence in all spheres of individual and collective activity so that the nation constantly rises to higher levels of endeavour and achievement;

*(k) who is a parent or guardian, to provide opportunities for education to his child or, as the case may be, ward between the age of six and fourteen years.

Note: The Article 51A containing Fundamental Duties was inserted by the Constitution (42nd Amendment) Act, 1976 (with effect from 3 January 1977).

*(k) was inserted by the Constitution (86th Amendment) Act, 2002 (with effect from 1 April 2010).

@KVIES NOT TO BE REPUBLISHED

Hello Children!

If you feel uneasy about someone touching you inappropriately, you should not keep quiet. You must

1. Not blame yourself
2. Tell someone whom you trust
3. You can also inform National Commission for Protection of Child Rights through the **POCSO e-box**.

When you get an unsafe touch, you may feel bad, confused and helpless
You need not feel "bad" because it's not your fault



POCSO e-box available at NCPCR@gov.in

नए समाज की ओर
Towards a new dawn

© NCTBS NOT TO BE REPUBLISHED

If you are below 18 years of age, and are troubled or confused or abused or in distress or know some other child who is...

*Call **1098**...because some numbers are good!*
They change lives!!!



CHILDLINE 1098 - a national 24 hours toll free emergency phone service for children in distress is an initiative of CHILDLINE India Foundation supported by Ministry of Women & Child Development

नए समाज की ओर
Towards a new dawn

Swachh Bharat
Ek Kadam Swachchhta ki or

NOTE

@KTBS
NOT TO BE REPUBLISHED