

Homi Bhabha Curriculum for Primary Science
Pilot Version

S M A L L SCIENCE

• TextBook
• Class Three

Jayashree Ramadas

Small Science

TextBook

Class Three

Pilot Edition 1998

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GENERAL PREFACE

Not a day passes in our country when somebody somewhere has not criticized our system of education, particularly our school education. A great many ills and inadequacies of the system probably flow from extraneous causes and need socio-political initiatives that go beyond mere reforms in school curriculum. But some problems do arise directly from the curriculum - text books, teaching and evaluation practices. There is then a need to keep these problems in view and continually try to devise new curricula to overcome them.

Efforts in curricular reforms and innovations are not new to our country. Nearly every decade or so, there have been initiatives at the Central and State levels to effect changes in curricula. Several independent school networks and voluntary groups have brought out their own textbooks and related materials. There is no doubt that significant progress has been made by the country in increasingly better conceptualization of the school curriculum at primary, middle and secondary levels. The paradigms of school curriculum in India have steadily evolved and become more relevant and modern. Unfortunately, the over-all deterioration of the system due to extraneous factors has tended to obscure these gains. Also, and most important for our purpose here, there is a large gap between the generally agreed objectives of the curriculum and their actual translation into textbooks and teaching practices.

Homi Bhabha Curriculum is basically an attempt to close this gap as much as possible. It is not conceived to be a revolutionary curriculum. The broad aims of the curriculum are much the same as those articulated in countless reports and articles of different education departments and agencies. The idea is not to produce a fanciful, 'museum-piece' curriculum that nobody would adopt, but to attempt to discover a sound and wholesome curriculum that is practical to implement in our school system. 'Practical' is, however, not to be regarded as a euphemism for the status quo. As the users will find out, the alternative textbooks of the Homi Bhabha Curriculum are full of radical unconventional ideas that we believe are both urgent, necessary and, given enough efforts, feasible. But rather than describe here what we believe to be these innovative aspects, we leave the users, students and teachers, to find and experience them. In the simplest and most favourable situations, devising a curriculum and translating it into books, laboratories and teacher manuals is a daunting task. In the complex parameters and constraints that govern our country's educational system, the task is formidable. Only time will tell if and to what extent the Homi Bhabha Curriculum is an effort in the right direction.

Arvind Kumar

PREFACE TO SMALL SCIENCE: CLASS III

The series of students' and teachers' books for the Homi Bhabha Curriculum are the outcome of more than two decades of research and field experience at the Homi Bhabha Centre for Science Education (HBCSE). During these years, several projects have been undertaken to study problems related to pedagogy, students' conceptions, communication in the classroom, text and picture comprehension and cross-cultural issues in science learning. All the members of HBCSE, past and present, have in some way contributed to this curriculum.

The curriculum for primary science is largely inspired by observations made during a three-year research project at HBCSE, "Diagnosing Learning in Primary Science." The problem addressed by the curriculum is briefly as follows.

Primary school students, particularly in rural areas, have rich, interactive experiences of the natural world. But lacking systematisation and clear expression, their observations and skills do not contribute to school learning. Urban students from literate homes, on the other hand, are often encouraged to ignore their natural surroundings, and to concentrate on meaningless bookish learning. As a result, most students miss out on the concrete experiences of systematic observation and self-expression, which are so vital to science learning through the rest of their lives.

The books for Class III have few facts to remember. Unit 2 is the only one where the information content is important. The other three Units aim simply to provide experiences. To use these books, students must get out of the mind-set of copying the correct answers from the blackboard or from other students. Small Science should not be just read, it should be done.

The Hindi and Marathi versions of these books are under preparation. Any good curriculum should be dynamic, ready to face criticisms, and to change according to the needs of students and teachers. Please send us your ideas and suggestions in the feedback form provided at the end of the Workbook.

Jayashree Ramadas

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My husband, Ramadas and children, Rohini and Harishchandra, who were both supportive and devastating in their criticisms

Jayashree Ramadas

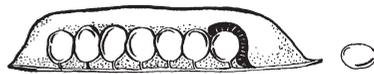
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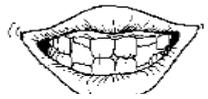
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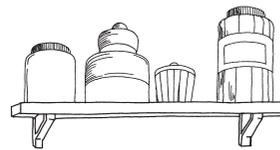
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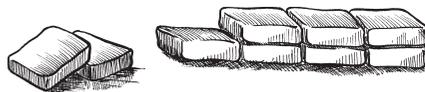
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UNIT 1

THE LIVING WORLD

Chapter 1

So many living things!

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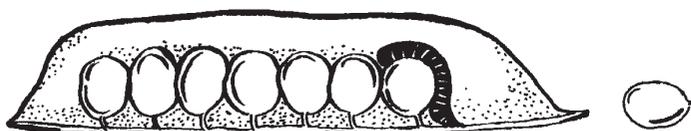
Grow your own plant

Chapter 4

Looking at animals

Have you ever watched a puppy play with a ball, a spider build a web, or a tree bloom with colourful flowers? Have you rolled a leaf to make a whistle? Have you listened to, and tried to imitate, the call of a bird? How dull the world would be, without living things!

In the next few weeks, you will look at living things, talk and write about them. Watch with care, and ask questions. You may not find the answers at once, but you will learn, and you will enjoy!



Pea Tale

Mini and Apu were shelling peas with Dada (and eating some too)! Mini was about to pop a pea into her mouth, when Apu cried, "Wait!"

A little green caterpillar lay curled around the pea. "Is it alive?" Mini touched it with her finger.

The caterpillar moved, but held on to the pea. "I'll put it back in the pod. Later we can leave it out in the garden."

"Do you know", said Dada, "in a few weeks this little green caterpillar will fly away - it will be a little brown moth then!" Apu and Mini looked in wonder at the caterpillar.

"Or a bird might find it first, and eat it up!" said Mini. Apu made a face at her.

"One day you too can watch a caterpillar turn into a moth or a butterfly", said Dada, "after you find out some more about living things, and how to take care of them."

"Let's start right away", cried Apu. "how many living things can we see in this garden, Mini?"





*Hush, hush, don't make a sound,
Walk softly, searching on the ground,
Under stones they creep and hide,
In puddles, ponds, they swim and dive*

*Some stand still, with roots so deep,
Home to others, that crawl or sleep,
On branches, barks and leaves they stay,
Or spread their wings, and fly away!*

Search for living things!

1. In the classroom

Make a list of all the living things in your classroom. You, your classmates and your teacher are living. What are the other living things in the classroom?

2. Outside the classroom

Now list the living things that you see in your school grounds, or near your house.

Look for different kinds of plants and trees. Look closely on the ground, under stones, inside puddles or ponds, in bushes, on branches, leaves and barks of trees, in the air, and in the sky. See who can notice and write down the largest number of living things.

(Ask your teacher the spellings of names that you do not know.)

Take Care!

Do not go too deep into grass or bushes. Do not put your hand into cracks, or turn over large stones. You may get a nasty surprise!



3. Summer and rains

Choose a small patch of land near your home or school. Count how many different kinds of plants and animals you see there during the summer season. How many of these plants are trees?

Look again after the rainy season has started. The old plants now look greener. But you also see many more, and many different kinds of small, baby plants. As the days go by they grow bigger.

You also see new animals. Look for frogs, earthworms, and different kinds of insects, like caterpillars, butterflies, beetles and flies.

Count how many different kinds of plants and animals you see in the rainy season.

Think! Think!

Where did all these new plants and animals come from?

Where were they hiding in the summer?



Remember this

We see many different kinds of living things around us. All these living things are either plants or animals.

Plants stay fixed on the ground; animals move around.

When it rains, we see new plants, and new animals.

Know these words

living thing	summer	animal	sprouts	burrows
plant	rainy sea-	insect	moves	climbs
grass	son	caterpillar	flies	grows
bush		beetle		
tree				

EXERCISES

Name and draw

1. A plant that:
 - a. Climbs on other trees
 - b. Grows in water
2. An animal that:
 - a. Moves on the ground
 - b. Flies in the air
 - c. Lives under the ground
 - d. Hides under stones
 - e. Climbs on trees and bushes
 - f. Lives in water

Short questions

1. Give examples of these living things:
 - a. These living things always stay fixed on the ground.
 - b. These animals have no legs.
 - c. We have two legs. Which other animals have two legs?
 - d. These animals have four legs.
 - e. These animals have six legs.
 - f. These animals have eight legs.
 - g. These animals have so many legs, they are difficult to count.
 - h. These animals have hair on their body.
 - i. These animals stay on the undersides of leaves.
 - j. You see these animals in the rainy season.
2. Why do walls and rocks look green in the rainy season?

What's same? What's different?

1. Give two similarities and two differences between:
 - a. A mango tree and a peepal tree
 - b. A caterpillar and an earthworm
2. Find the odd one out:
 - a. coconut, frog, chikoo, mango
 - b. mosquito, butterfly, crow, bee
 - c. frog, cat, fish, crocodile

Talk and write

1. Remember and say any poems that you have learnt about any living thing (plant or animal).
2. Write five sentences about the plants in your school ground.
3. Write five sentences about the animals in your school ground.

Play with words

1. Make sentences with:
grass, tree, fruit, caterpillar, bulbul
flies, burrows, grows
2. Now make some more sentences. Each sentence should use two or more of these words.

Ask a question

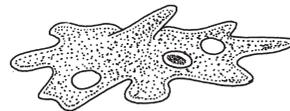
1. Ask questions about the plants and animals you saw while doing the activities.
Think of how you will try to find the answers.

DID YOU KNOW?

- *There are so many different kinds of living things on the earth, people have still not finished counting all of them! Of all the different kinds of living things we see, the maximum number is of insects.*
- *Some living things are so small, we cannot see them! There are countless numbers of them all around us: in the air, in the soil, in the water, and even inside us!*

A microscope makes things look much larger than they are. If you look into a drop of pond water through a microscope,

you might see this very tiny animal (Amoeba)



or this very tiny plant (Nostoc).



CHAPTER 2
LOOKING AT PLANTS

Our green friends

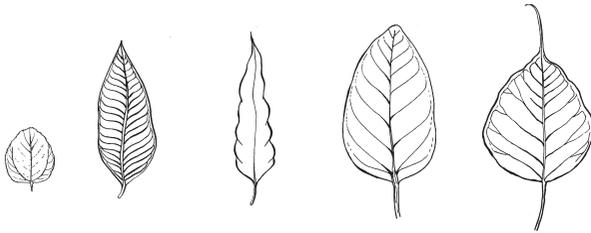
1. The plants you know

Write down the names of all the different kinds of plants that you know. Which of these are small plants, and which are tall trees?

2. Looking at leaves

Collect the leaves of different kinds of trees.

For example, you may collect:

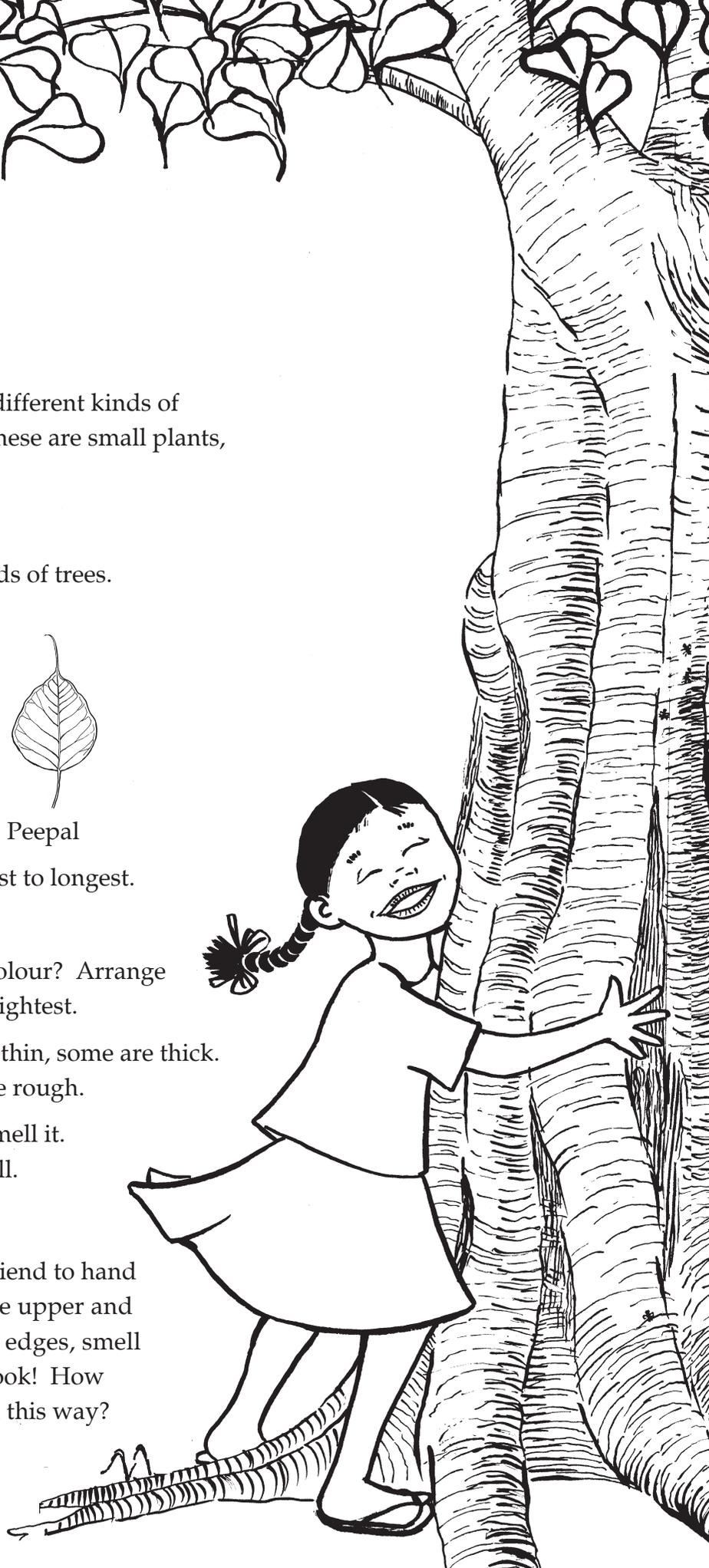


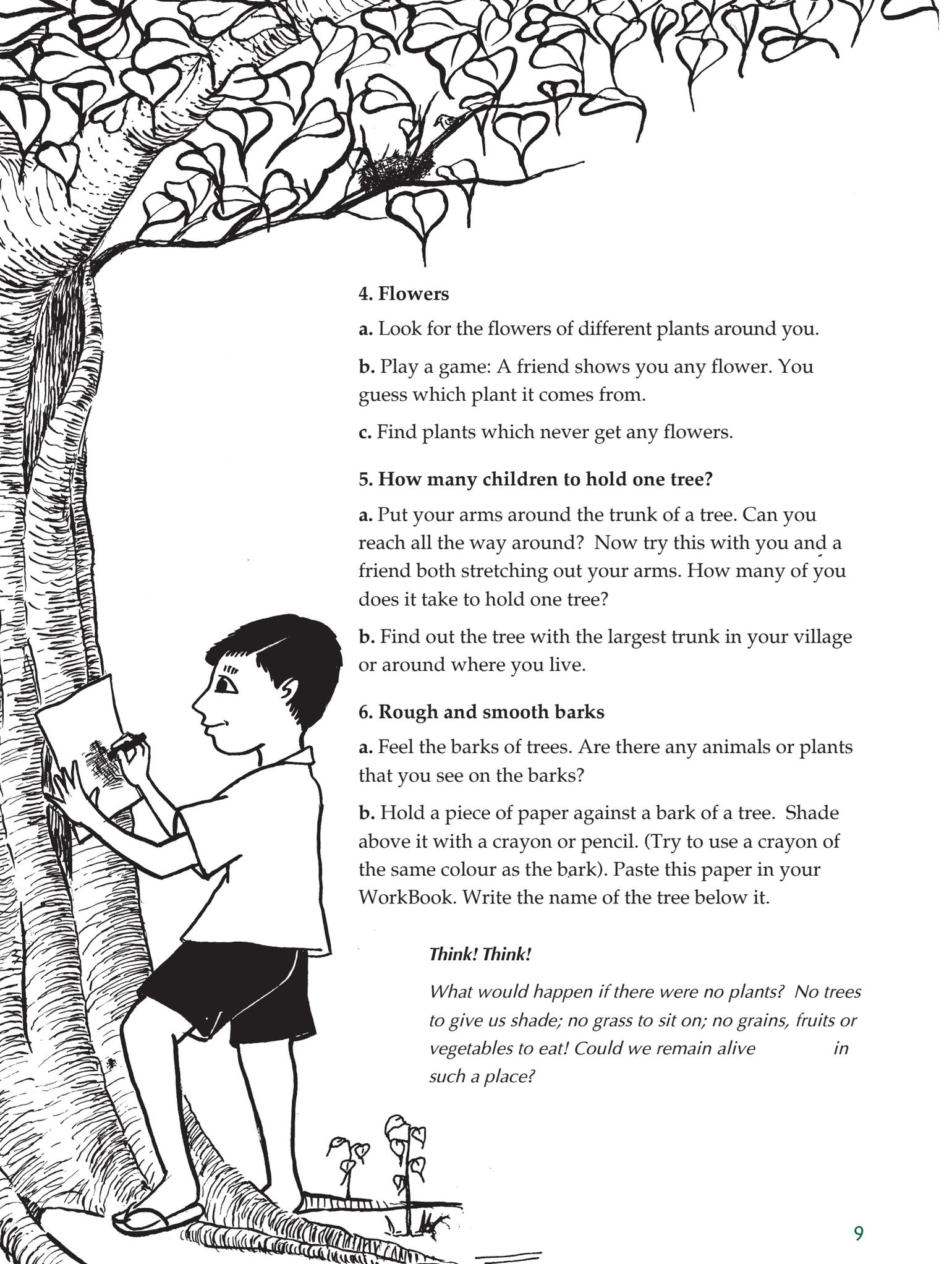
Ber Mango Ashoka Banyan Peepal

- Arrange the leaves from shortest to longest.
- Draw the shape of each leaf.
- Are all the leaves of the same colour? Arrange the green leaves from darkest to lightest.
- Feel each leaf. Some leaves are thin, some are thick. Some leaves are smooth, some are rough.
- Crush a part of each leaf and smell it. Each leaf has its own kind of smell.

3. Guess the leaf!

Close your eyes. Now ask your friend to hand you one leaf at a time. Touch the upper and lower surfaces of the leaf, feel its edges, smell it, but do not open your eyes to look! How many leaves can you recognise in this way?





4. Flowers

- a. Look for the flowers of different plants around you.
- b. Play a game: A friend shows you any flower. You guess which plant it comes from.
- c. Find plants which never get any flowers.

5. How many children to hold one tree?

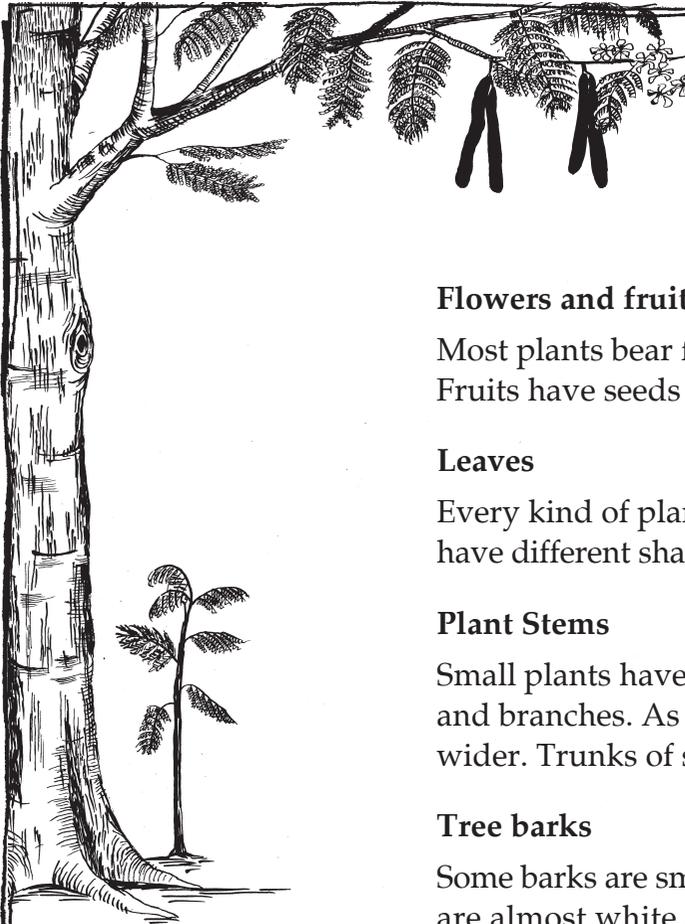
- a. Put your arms around the trunk of a tree. Can you reach all the way around? Now try this with you and a friend both stretching out your arms. How many of you does it take to hold one tree?
- b. Find out the tree with the largest trunk in your village or around where you live.

6. Rough and smooth barks

- a. Feel the barks of trees. Are there any animals or plants that you see on the barks?
- b. Hold a piece of paper against a bark of a tree. Shade above it with a crayon or pencil. (Try to use a crayon of the same colour as the bark). Paste this paper in your WorkBook. Write the name of the tree below it.

Think! Think!

What would happen if there were no plants? No trees to give us shade; no grass to sit on; no grains, fruits or vegetables to eat! Could we remain alive in such a place?



Remember this

Plants give us food to eat. They keep our surroundings cool and shady. They make the air fresh for us to breathe.

Flowers and fruits

Most plants bear flowers. Flowers turn into fruits. Fruits have seeds in them.

Leaves

Every kind of plant has its own kind of leaf. Leaves have different shapes, sizes, colours, feels and smells.

Plant Stems

Small plants have thin stems. Trees have thick trunks and branches. As trees grow older, their trunks grow wider. Trunks of some trees grow very wide.

Tree barks

Some barks are smooth, others are rough. Some barks are almost white, others are dark brown. Barks are homes for many insects. Barks protect the tree.

How plants stand up

Plants stand firmly on the ground. It takes a very very strong wind to knock down a big tree.

Plants have roots which go into the soil. Roots of big trees spread wide and go deep down into the soil. Roots fix the plant in the ground.

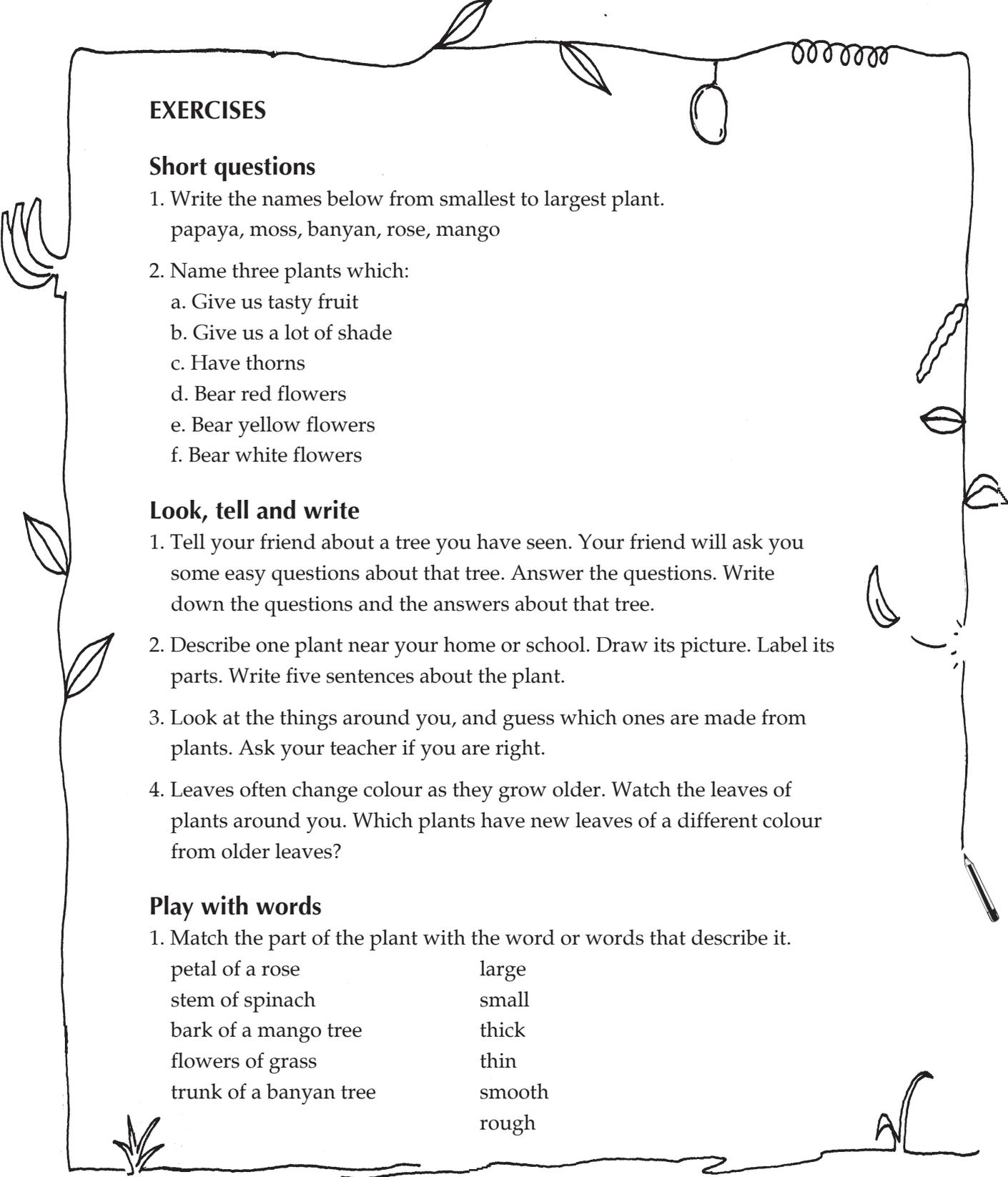
What else do roots do?

Roots also suck up water and different kinds of salts from the soil.

They send the water and salts up to the rest of the plant.

Know these words

root	bark	large	thick	smooth
stem	branch	small	thin	rough
trunk	leaf			



EXERCISES

Short questions

1. Write the names below from smallest to largest plant.
papaya, moss, banyan, rose, mango
2. Name three plants which:
 - a. Give us tasty fruit
 - b. Give us a lot of shade
 - c. Have thorns
 - d. Bear red flowers
 - e. Bear yellow flowers
 - f. Bear white flowers

Look, tell and write

1. Tell your friend about a tree you have seen. Your friend will ask you some easy questions about that tree. Answer the questions. Write down the questions and the answers about that tree.
2. Describe one plant near your home or school. Draw its picture. Label its parts. Write five sentences about the plant.
3. Look at the things around you, and guess which ones are made from plants. Ask your teacher if you are right.
4. Leaves often change colour as they grow older. Watch the leaves of plants around you. Which plants have new leaves of a different colour from older leaves?

Play with words

1. Match the part of the plant with the word or words that describe it.

petal of a rose	large
stem of spinach	small
bark of a mango tree	thick
flowers of grass	thin
trunk of a banyan tree	smooth
	rough

DID YOU KNOW?

- *Plants need air, just like we do. They breathe through their leaves, stems and roots.*



A secret life

Dada walked into the room with a merry twinkle in his eye. He held out his closed fist. "Guess what I have in here!"

"A caterpillar!" cried Apu.

"Don't be silly", Mini said, "the caterpillar would die if he held it so tight. Oh Dada, give us a clue!"

"Well, it *is* living, like a caterpillar", said Dada ..

*It's hard and round, but not a stone.
For in the ground, it grows on its own.
Water with a pail, and it sprouts a tail!
Then shoots up high, for it's alive!*

What is it?

"I know!" shouted Mini and Apu together, "it is a"





A plant is born

1. Seeds in your kitchen

Look for different kinds of grains in your kitchen. Learn to recognise:

rice, wheat, ragi, jowar, bajra ...

toor, udad, moong, masoor, groundnut ...

mustard, cumin (jeera), methi, coriander (dhania), tamarind ...

2. Plant a seed

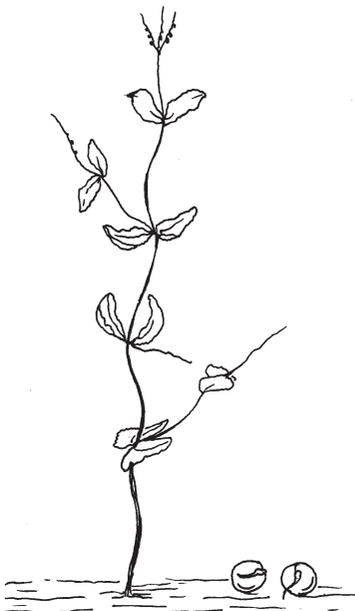
With your friends, plant a little of each kind of grain in empty boxes or small pots filled with mud. Water your seeds regularly. Watch the plants grow.

Try planting different dals, grains of rice, sago. Do they sprout? Make your own guess why they did not sprout.

3. Watch closely!

Which of the seeds sprouted first? Did you see the tiny root going into the soil? Which plants grew the tallest? Describe the colours and shapes of the leaves of different plants.

Watch your small plant grow bigger. After some time it may need more space to grow. You will have to put it in a bigger pot, or in the ground.





Remember this

How plants grow

Plants grow from seeds. When the weather is wet and warm, seeds sprout and plants grow well.

Some plants live for less than a year, others live for many years.

Only some plants become trees. Plants take many years to become trees. Some trees around you may be older than your parents or grandparents.

You have seen how many new plants and animals appear in the rainy season. Some of these plants may, after many years, grow into trees.

We grow plants

Different kinds of plants are grown by farmers in fields. Most of our food comes from plants that farmers grow.

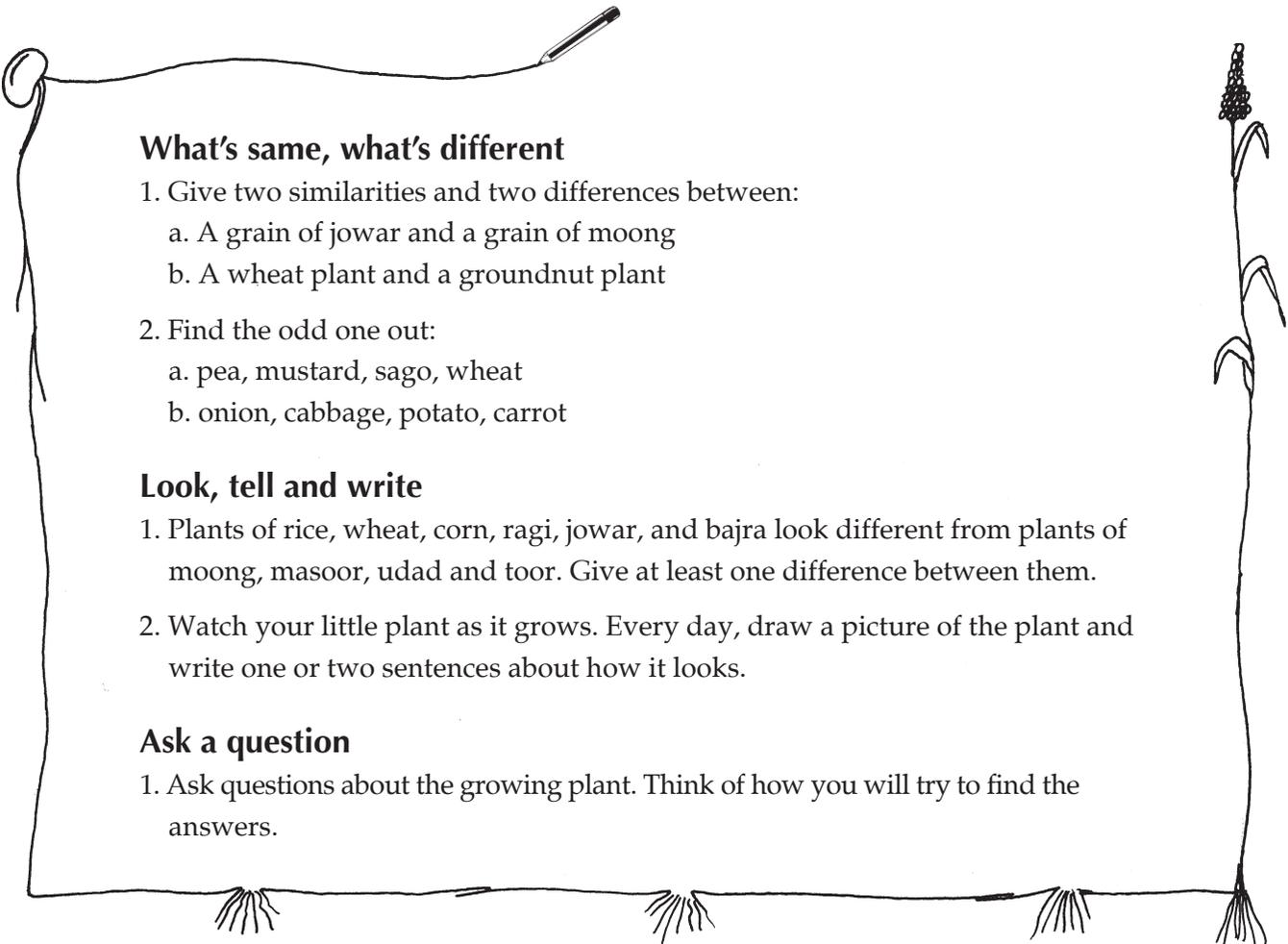
EXERCISES

Name and draw

1. Draw pictures of any five of the plants grown by your class in Activity 2. Below each picture write the name of the seed from which the plant grew.

Short questions

1. Name ten different kinds of seeds that are sown by farmers (think of all the grains you find in your kitchen).
2. Name some plants that you can grow without a seed.
3. Name some plants that grow into trees.
4. Name some plants that do not grow into trees.



What's same, what's different

1. Give two similarities and two differences between:
 - a. A grain of jowar and a grain of moong
 - b. A wheat plant and a groundnut plant
2. Find the odd one out:
 - a. pea, mustard, sago, wheat
 - b. onion, cabbage, potato, carrot

Look, tell and write

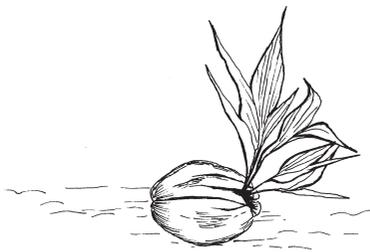
1. Plants of rice, wheat, corn, ragi, jowar, and bajra look different from plants of moong, masoor, udad and toor. Give at least one difference between them.
2. Watch your little plant as it grows. Every day, draw a picture of the plant and write one or two sentences about how it looks.

Ask a question

1. Ask questions about the growing plant. Think of how you will try to find the answers.

DID YOU KNOW?

- *Banyan, peepal and tamarind trees live for hundreds of years.*



- *The largest seed in India is the coconut.*

- *The caterpillar that Mini and Apu found, also eats toor, peanuts, beans, cotton, sunflower, corn, jowar, tomatoes, oranges...!*
Many such caterpillars together can destroy a whole field of crops.

Busy bodies

Apu was munching peanuts and jaggery and reading a book. "Look Apu! You have a line of tiny visitors!"

*See them come, in a wiggly line,
Out from a hole, in a wiggly line.
Up the box, back, and down again,
With a load of food much bigger than them.*

*Some hurry out and some hurry in,
Stop to bump heads, then rush on again.
Oh ants, oh friends, do tell me, be good,
How ever did you find this store of food?*





Watch and find out!

1. Who got the food

a. Take a piece of something sweet, like sugar or jaggery, or something fried, like chips. Keep this food in an open dish on the floor, and watch. How long did you have to wait before an insect found the sweet? The first insect to arrive near the sweet was probably an ant.

Watch the ants. Where are they coming from? How do you think they found the food?

Do you think they are eating the food, or are they carrying it away? Where are they taking it?

If you keep grains of sugar, you might see ants carrying them away. What do they do with a peanut or a lump of jaggery, that is too big for them to carry?

b. Drop some pieces of chapati or bread outside the house and keep a watch. Note which birds or four-legged animals come to pick them up. Which animals are the quickest and the boldest in picking up the food that you throw?



2. Flower visitors

Look for flowering plants near your home or school. Watch for flying or crawling insects which visit these plants. Do you see any butterflies?

When you see butterflies, stay still and watch them. Don't catch them! Do they come at all times of the day? Do they sit still or flit from flower to flower? Watch what they do when they sit on a flower.

3. Birds

Which are the most common birds that you see around your house? At what times of the day do you hear the sounds of birds? Listen to the sounds of different birds. Learn to make sounds like these birds. Make a collection of bird feathers. Guess which bird they belong to.

Do you see the same birds all through the year? Watch for new kinds of birds that might come in early summer, in the rainy season, and in the winter season.

Which birds are always seen in groups, and which birds are by themselves? Do birds come together in groups at some times of the day? Which times?

Think! Think!

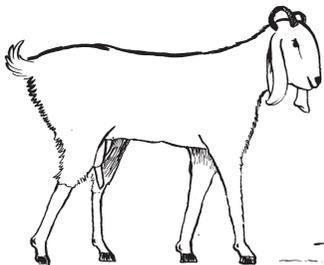
Do birds like to go to some trees more than to others? Why do you think that is so?

Remember this

Many animals live in and near our homes.

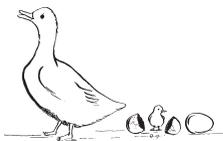
Some animals, like ants, cockroaches, rats, crows and dogs, eat the food that we leave around.

Some animals, like mosquitoes, bedbugs, lice and fleas, drink our blood.



Animals that help us

We keep some animals because they help us. They give us milk, eggs or wool, they guard our houses, or pull carts and ploughs. They are called 'domestic animals'.



Like all animals, domestic animals need food, water, shelter and exercise to stay healthy. We feed and take care of domestic animals. They need us, and we need them.

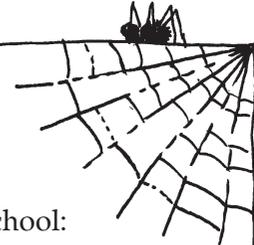
Other animals too help us in many ways. Frogs and birds eat mosquitoes and other insects. Earthworms loosen the soil and make it good for plants to grow. Snakes eat rats which eat our grain.

Know these words

domestic animals

plough

loosen



EXERCISES

Name and draw

1. Different kinds of animals which live in or around your home or school:
 - a. Two-legged animals
 - b. Four-legged animals
 - c. Six-legged animals
 - d. Eight-legged animals
 - e. Many-legged animals



Short questions

1. Name one domestic animal that is found in desert lands.
2. Why do crows, sparrows, rats and dogs live near our homes?
3. Name three animals which:
 - a. Give us milk
 - b. Give us eggs
 - c. Give us wool
 - d. Carry or pull our loads
 - e. Suck our blood
4. Write the names below from smallest to largest animal.
rat, donkey, dog, elephant, mosquito, camel

What's same? What's different?

1. Give two similarities and two differences between:
 - a. Dog and cow
 - b. Butterfly and cockroach
 - c. Crow and sparrow
2. Find the odd one out:
 - a. dog, cat, tiger, cow
 - b. flea, mosquito, bedbug, housefly



Look, tell and write

1. Talk about how different animals behave. Some are quick and bold, others are shy and do not come close even if you offer them food. Some are active in the day, others in the night. Some move in groups, others are alone.
 2. Write about any one animal that lives around you.
- 
- 
- 

Play with words

1. Match the animal with one or more actions:

frog	eats insects
mouse	pulls the cart
bullock	sucks blood
earthworm	jumps
flea	burrows
sparrow	
grasshopper	

Ask and find out

1. Do you have a pet at home? How do you take care of it? If you do not know, find out from older people.
2. Some of you eat fish at home. What are the different names of fish that you know? Do these fish live in fresh water (lakes and rivers), or in salt (sea) water?

Figure it out

1. A sparrow flew back and forth from its nest to bring insects for its baby sparrows. Every one minute, it brought two insects. How many insects did the sparrow bring in 30 minutes?

DID YOU KNOW?

- An owl can turn its head around in three-fourths of a circle!
- A small insect, called an ant-lion, lives in dry, sandy soil.



It makes a cone-shaped pit in the soil. Then it waits for ants or other insects to fall in, so it can catch and eat them.

Look around you for these ant-lion pits!



- The woodpecker's tongue is so long, it does not fit into its mouth.

The woodpecker keeps it folded at the back of its head.



Chapter 5

Our Body

Chapter 6

Our Food

Chapter 7

Our Teeth

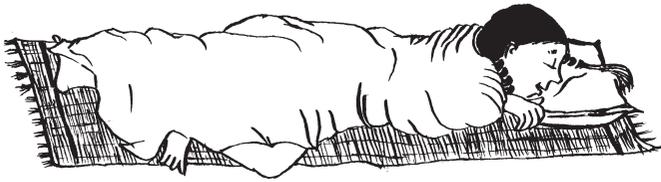
Chapter 8

Taking Care of our Body



*You run and jump, you
think and eat and sleep. Have
you ever thought of how you
do these things? Have you
wondered what is inside you?*

*You have a truly wonderful
body. You will find out many
things about it as you grow
up. But first, let us see what
your body is made of. Let us
see how you can help this
wonderful body to grow, to
be strong, healthy and happy!*



Mini's fall

It was Sunday afternoon. Mini was curled up in bed after a good lunch. The sun went low in the sky, but she was fast asleep.

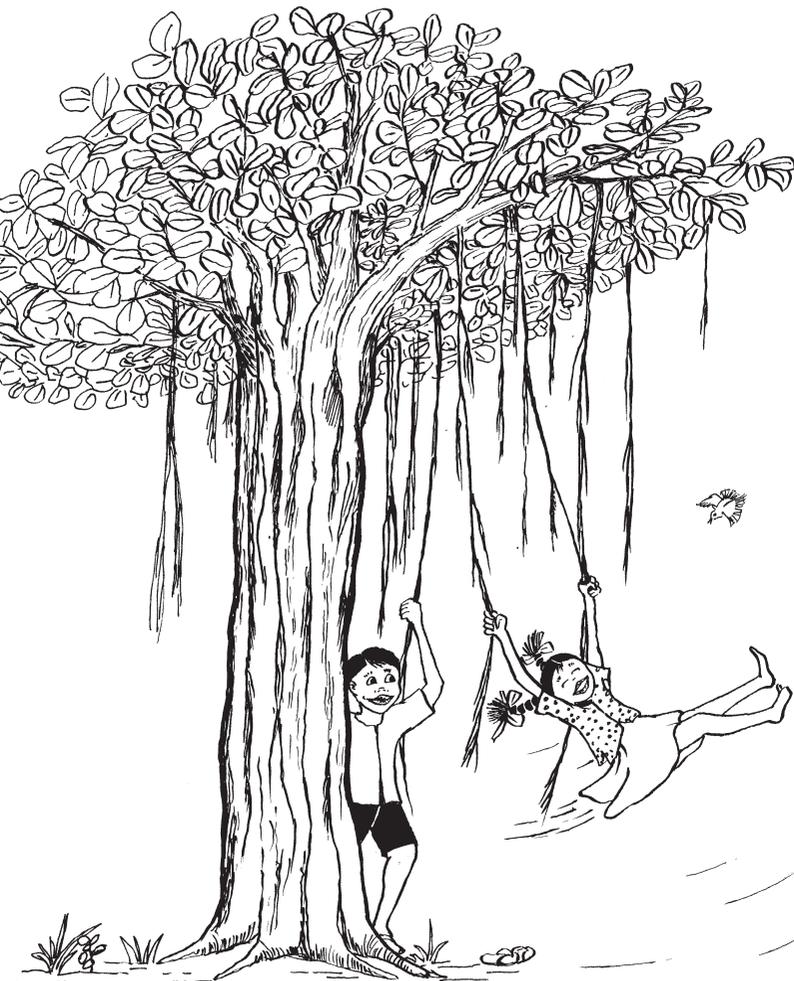
Apu came quietly up to her with a feather in his hand, his eyes shining with mischief. He tickled Mini's arm with the feather, then he tickled her leg. Mini did not stir.

He tickled her palm, and she moved a little. Then he tickled her nose.

Aa .. aachoo .. oo

Mini's sneeze blew the feather out from Apu's hand. "Wake up", cried Apu, "let's go out to play!".

They ran out to the big Banyan tree. Mini loved to swing from its smooth hanging roots.



*She held the roots with fingers tight,
And swung her legs with all her might.*

*She bent her knees and curled her toes,
She breathed so hard, it puffed her nose.*

*She arched her back, her feet went high,
"I'll greet the birds, I'll reach the sky!"*

Apu looked at her with envy, "You should be in the circus, Mini!". Just then Mini took an extra high swing - her fingers slipped from the root and she fell to the ground with a thud.

Mini's knees and elbows were bleeding, her chin was scratched. She tried not to cry, but tears trickled down her cheeks.

Apu took her home to Amma. He helped Amma clean her wounds.



"Where is this blood coming from?" Apu wondered.

"Blood flows in big and small tubes in our body", said Amma. "Just under our skin, there is a net of very thin tubes, with blood flowing in them."

"But why is the blood coming out of the tubes?"

"Mini's skin is torn; some of these tubes are torn too. That is why the blood is coming out."

"When will it stop coming out?"

"Apu, you ask so many questions! Get me the cotton now."

By now, Mini was forgetting her pain.

"What else is there under the skin?" she asked.

"Muscles. We call it flesh."

"And under that?"

"Bones"

"And under that?"

"Nothing. Bones support your whole body." Amma slipped her fingers under a large handkerchief, and lo! It moved like a puppet! "That is how bones hold us up and let us move. Without bones, .. " She took her hand out and the handkerchief flopped down.

Mini and Apu laughed. Amma had not answered all their questions, but they were going to watch, and ask, and read, until they found out everything! But now, they wanted to run out to play.

Know your body

1. Action words

Do these actions. Say which part of your body you are using.

Walk, jump, run, hop, skip, crawl, somersault

Nod, blink, wink,

Breathe, smell, sniff, sneeze, cough, blow,

Bite, chew.

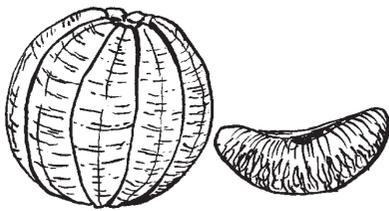
2. Touch and feel

Take a feather or a thin rolled-up corner of a handkerchief. Close your eyes. Ask a friend to touch you lightly with the feather, brush or handkerchief, anywhere on the body.

Do you feel the touch on all parts of your body?

On which parts of your body do you feel even a very gentle touch?

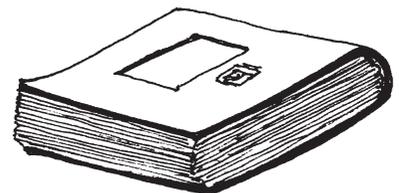
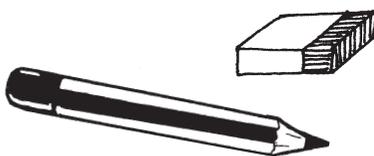
On which parts of your body do you not feel any touch?



3. Smell and tell

Close your eyes and smell different things. Which of them can you recognise? You may smell:

Water, milk, any fruits, your favourite food, onion, garlic, spices in the kitchen, a new book, a very old book, a fresh newspaper, pencil, eraser, any flowers, leaves, kerosene, leather ..

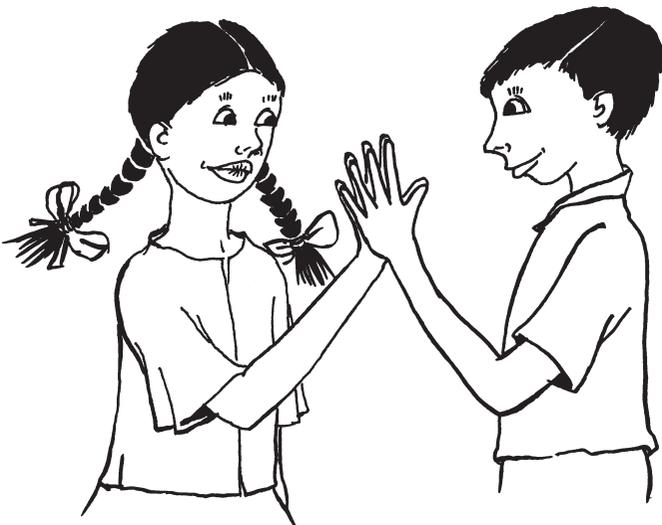
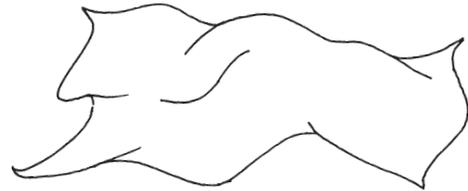


4. Finger puppet

Take a large handkerchief. Put your hand under it. Tie a string or a rubberband as in the picture. Do not tie it too tight.

This is your finger puppet. Make your puppet clap hands, bend forward ... What else can your puppet do?

Now take your hand out. Say what happened. What is it inside your body that lets you stand, sit, move and dance?



5. You are growing

- a. Do this with an older or younger friend: put your palms against one another. Compare the size of your hand, the length of your fingers, the length of your arms, your feet and your legs.
- b. Draw the outline of your palm in your WorkBook. Write the date next to your drawing. At the end of the year, put your palm on the drawing again to check if it fits.

Think! Think!

As you grow, your bones grow bigger, your muscles grow bigger. More material is added to your body. Where does this material come from?

Remember this

What you are made of:

Skin

Your body is covered with a skin, just like a mango is covered with a peel. The skin protects your body from dirt and germs. You touch and feel things with your skin.

There are some parts of your body that are not covered with skin. Guess what these are!

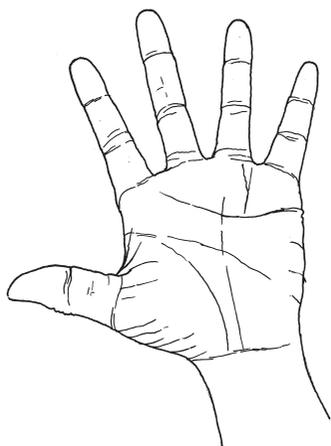
Which parts of your body can you cut off without feeling anything?

If you get scratched by thorns, or fall down and graze your skin, then the thin outer part of this cover comes out. You see the smooth and pink inner part of the skin. Underneath the skin are our muscles.

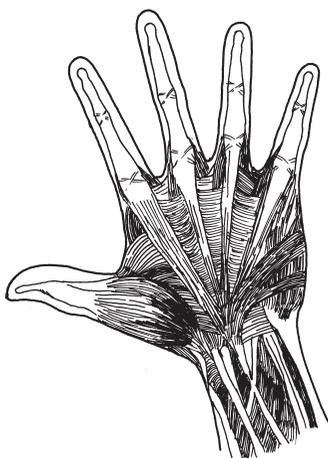
Muscles

Muscles are the fleshy parts of your body. Feel the muscles of your face, your upper and lower arms, your thigh and ankle. Your largest muscle is in the hip and thigh. Muscles help us to move.

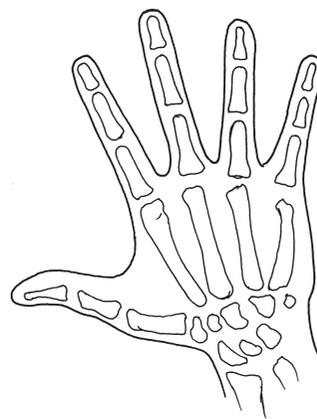
Do you eat mutton, chicken or fish? What you eat are mostly the muscles of these animals.



skin



muscles



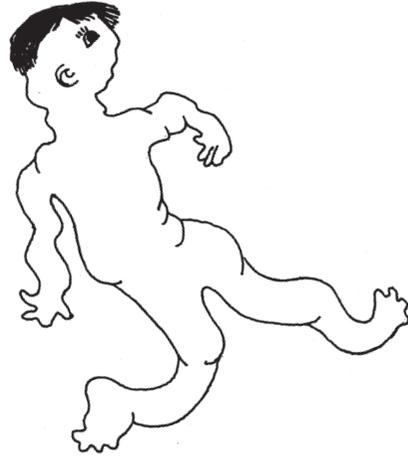
bones



Bones

Bones are the hard parts of your body. You can feel bones where they are close to your skin: in your wrists, elbow, base of the neck and knees.

In some parts of your body, the muscles are quite thick. Here you can not easily feel the bones. But they are there! If you did not have bones, you would collapse like a lump of dough.



Blood

When you hurt yourself, you see blood coming out from the wound. Blood reaches all parts of the body through many thin tubes.

Joints

Our bones are hard and stiff. We cannot bend bones. But with the help of our muscles, we can bend some parts our body. These are the parts where two bones meet. We call them joints.

Move your fingers, toes, arms, legs, neck, waist. Guess which parts of your body have joints.

Growing bigger

Your body is growing every day. Clothes that you wore two years ago do not fit you now. They are too tight, and too short.

When you were a baby, older people in your family used to carry you easily. Now it is not so easy for them to carry you.

You cut your nails and hair, but they keep growing longer.

All parts of you grow. Your bones grow, your muscles grow, your skin grows. Your body makes more blood.



Know these words

Show these different parts of your body.

head	back	arm	leg	face	lips
hair	chest	elbow	thigh	forehead	teeth
neck	waist	wrist	knee	eyes	tongue
shoulder	belly	hand	shin	ears	chin.
trunk	hips but- tocks.	palm fingers thumb nails.	calf ankle foot toes.	nose mouth	

EXERCISES

Count!

1. You have one nose. What other things do you have only one of in your body?
What things do you have *two* of?
 - a. I have one _____
 - b. I have two _____
 - c. I have ten _____
 - d. I have more than 20 but less than 30 _____
 - e. I have so many of these, I cannot count them _____

2. Count with your fingers.

You know how to use your fingers to count numbers up to 10. How can you count numbers bigger than 10 with your fingers? Think!

Short questions

1. The three pictures on page 27 show the same hand. Is it a left hand or a right hand?
2. Which parts of your body do you use in the different games you play:
marbles, lagori, hopscotch, cycling, swimming, .. ?
3. What are all the different things you can do with your:
eyes, nose, mouth, ears, hands ?
4. Which parts of your body do these things?
see, hear, taste, smell, feel ?



5. Which parts of your body let you know these things?

- a. There are stars in the sky.
- b. The mango is sweet.
- c. A fly is sitting on your forehead.
- d. A baby is crying in the next room.
- e. There is fish in the covered basket.
- f. The paper is smooth.
- g. A truck is passing behind you.
- h. A man is coming along the road.
- i. The pot is warm.
- j. There is too much salt in the food.
- k. Someone has lighted an agarbatti.
- l. A cool breeze is blowing.

6. Feel these parts of your body and say if they have bones:

leg, palm, lips, ears, head, belly

What's same? What's different?

1. Give two similarities and two differences between:

- a. Arms and legs
- b. Fingers and toes
- c. Mouth and nose
- d. Bones and muscles

Talk and write

1. Tell your teacher:

- a. What I do with my arms
- b. What I do with my legs
- c. What I do with my mouth

(Think about all the things you do through the day with your arms, legs and mouth.)

2. What my puppet can do

(What are the different actions that your finger puppet can do?)

3. How I hurt myself or When I fell down

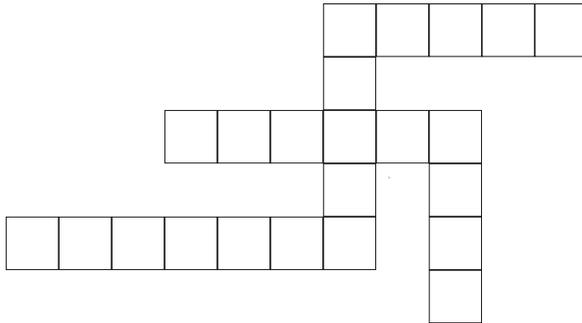
(Where did it happen? How did it happen? Which parts of your body did you hurt?)

Play with words

1. Fill these blanks to make five different sentences from each of the following:

- I use my _____ to _____ .
- My _____ joins my _____ to my _____ .

2. Fill the squares!



Across:

1. It flows through our body in tubes.
2. Places where two bones meet.
4. Fleshy parts of the body. They help us to move.

Down:

1. Hard and white and inside our body.
3. We touch and feel things with this.

Ask and find out

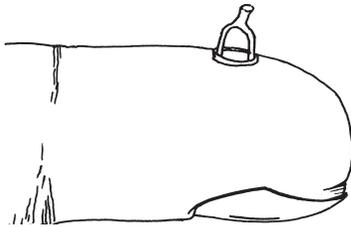
1. How do blind people find their way around? Can blind people read books?
2. Talk to someone you know, who can not use some part of their body. Find out if he or she has learnt to do some things in a different way, and how.
3. Do you eat the flesh of animals? If you do not, ask a friend who does. Do different animals have different kinds of muscles and bones? Are there different kinds of muscles and bones in different parts of the body?

Ask a question

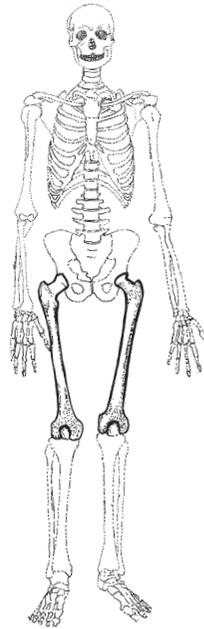
1. Ask questions about your body. Think of how you will try to find the answers.

DID YOU KNOW?

- *You have about 100,000 (one hundred thousand) hairs on your head!*
- *Almost two-thirds of your body is made of water. Water is part of your skin, muscles, blood and even bones.*
- *The smallest bone in your body is in your ear. This is how it would look if it is kept on your finger.*



- *The longest bone in your body is in your thigh.*



The hungry kitten

Apu and Mini were on their way back from school. In school they had learnt about the food that their body needs. Suddenly, they saw a tiny black kitten, mewling sadly with its tail in the air.

"Poor little kitten", said Apu, "she looks thin and hungry!"

"Let's take her home and give her some good food", said Mini, picking up the kitten.

"Yes, what shall we give her?"

"She looks tired; she needs energy to run around and play."

"She is thin and small; she needs food to build up her body."

"She must not fall ill - she needs food to keep her well!"

Mini and Apu started making a list of good food for Kitty. Kitty arched her back, blinked, and swung her tail impatiently.

Meow .. MEEOW ..

*Little Kitty, just you wait,
You'll have the best you ever ate.*

*Sweet rice, some butter for energy,
Eggs and dal for a growing body.*

*Fruits and veg to keep you fit,
That's what you need, little kitty kit!*

*Eat and play and lie on the mat,
You'll soon grow into a big fat cat!*



“Apu, Mini, come and drink your milk”, called Amma. Apu picked up Kitty and they ran to the kitchen.

“Oh, we have a guest today!” said Amma.

“Yes, and here is what she needs to eat,” said Apu, pulling out their long list.

“That is what you both need to eat, to grow into healthy children,” said Amma, “What Kitty needs now, is some milk!”

Kitty lapped up her milk hungrily, jumped on to a soft cloth, and was soon fast asleep.



Find out about food

1. Know your grains

Most of our food is made up of grains. The grains we eat are of two kinds, cereals and pulses.



wheat



ragi



bajra



jowar

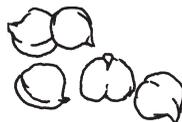
Rice, wheat, ragi, bajra, jowar and corn are cereals. We use cereals to make rotis, porridge and many other things.



moong



masoor



chana

Toor, moong, masoor, udad and chana are pulses. We use pulses to make dal, sambhar, curry and many other things.

Bring to school a spoonful of one kind of cereal and one kind of pulse. Write the names of all the cereals and pulses brought by the whole class.



2. Visit the market

Visit a vegetable market. Write the names of all the vegetables and fruits you see there.

3. What you eat

Keep a list of things you eat:

The things I ate raw

The things I ate cooked

4. How much water you drink

Count how many glasses of water you drink every day.

Remember this

Why you need food

Every day you feel hungry and want to eat something. Your body is telling you that it needs food!

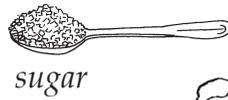
- (1) Food gives you energy to work and play.
- (2) Food builds up your body.
- (3) Food keeps away illness and makes you healthy.

THE FOODS YOU NEED



Energy Givers

Give you energy to work and play.



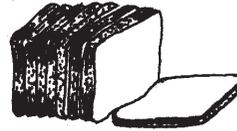
sugar



jaggery



sherbat



bread



rice
tato



po-



nuts



butter

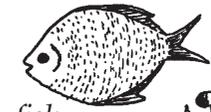


Body Builders

Build up your body.



milk



fish

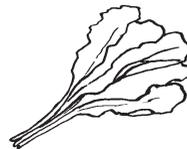


pulses



Disease Fighters

Keep away illness and make you healthy.



palak



mangoes



idli

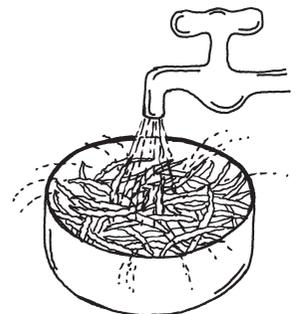


ragi

Washing food

Fruits, vegetables, grains and meat get dirty. In the dirt, there are tiny living things, called germs, too small for us to see. Some of these germs can make you sick.

Before cooking, wash all food well with clean water.





Quick energy

When you are feeling tired, a glass of sweet lemon sherbat perks you up at once. Sweet things like sugar, jaggery (gud) and fruits give you quick energy which lasts for a short time: you soon feel hungry again.

Energy for some hours

Rice, roti, bread, bhakri, potatoes and tapioca give you energy that lasts for several hours.

Energy to store

Butter, oil, ghee and nuts contain fats. Fats are stored in your body. At times when you need extra energy, or when you do not get enough food, fats are used up to give you energy.

Milk, eggs, meat, fish, split pulses (dals), sprouted pulses and nuts help to build up and repair your body. They make you strong.

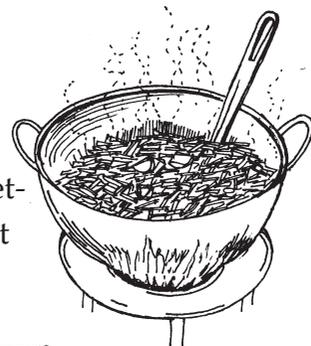
Some foods help your body to fight diseases. They also help you pass the stools out of your body.

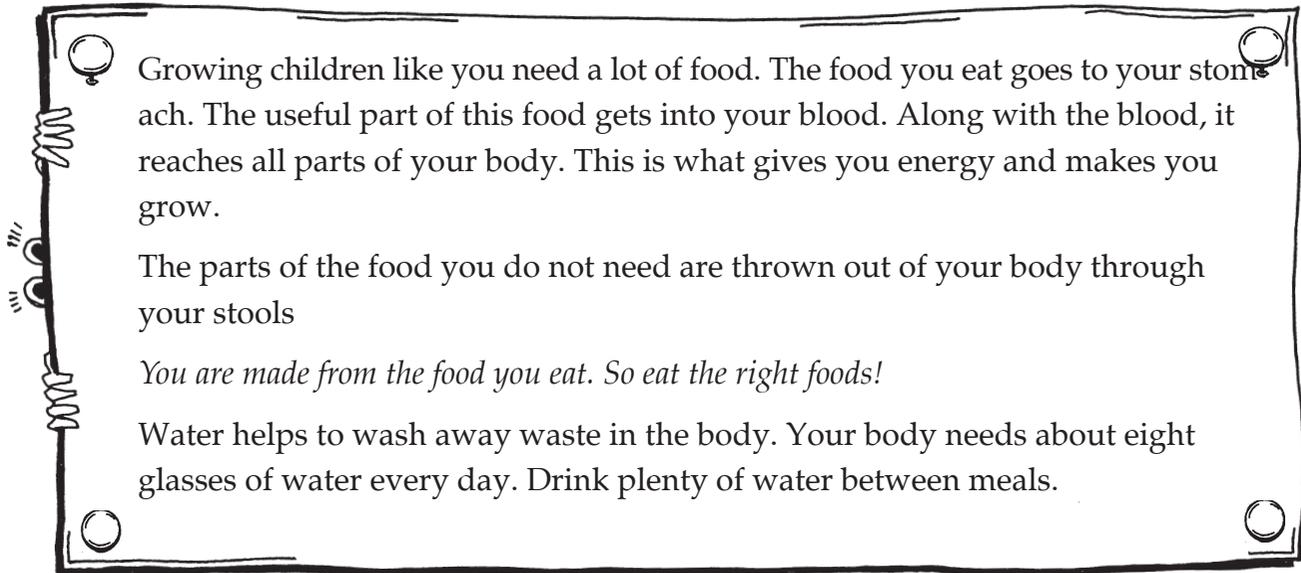
These disease fighters are, fruits, vegetables, unpolished rice, other cereals with their skin, and fermented foods like curds, idli and dhokla.

Cooking food

Cooking makes food tasty, easy to chew, and easy to digest. Heat kills the germs in the food.

Eat some foods raw, like, carrots, tomatoes, onions, radish, lettuce and cucumber. Wash raw foods very well before you eat them! Always eat fresh food.





Growing children like you need a lot of food. The food you eat goes to your stomach. The useful part of this food gets into your blood. Along with the blood, it reaches all parts of your body. This is what gives you energy and makes you grow.

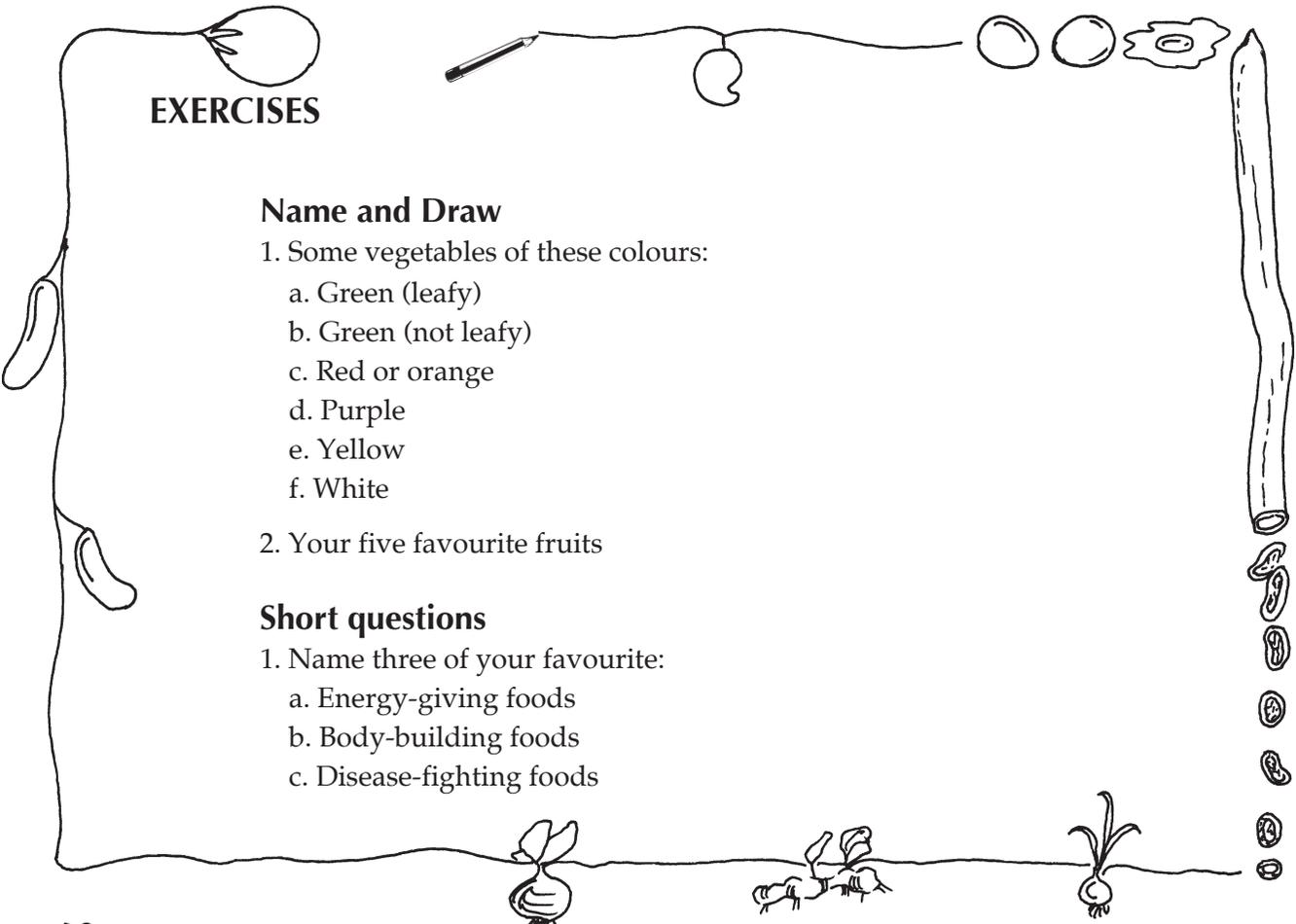
The parts of the food you do not need are thrown out of your body through your stools

You are made from the food you eat. So eat the right foods!

Water helps to wash away waste in the body. Your body needs about eight glasses of water every day. Drink plenty of water between meals.

Know these words

grains	energy	dirt	stools
cereals	strength	germs	
pulses	disease	digest	



EXERCISES

Name and Draw

1. Some vegetables of these colours:

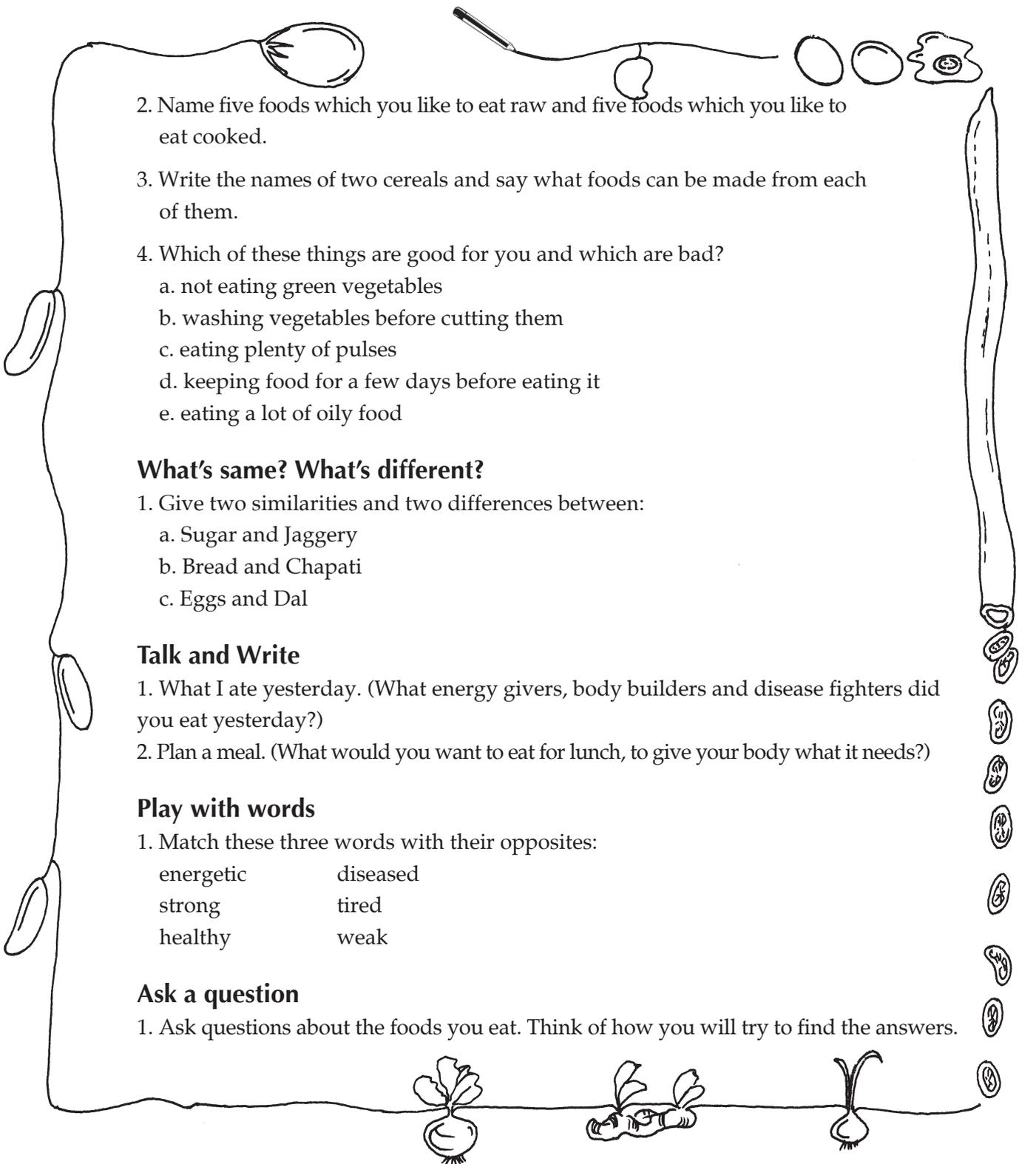
- Green (leafy)
- Green (not leafy)
- Red or orange
- Purple
- Yellow
- White

2. Your five favourite fruits

Short questions

1. Name three of your favourite:

- Energy-giving foods
- Body-building foods
- Disease-fighting foods

- 
2. Name five foods which you like to eat raw and five foods which you like to eat cooked.
 3. Write the names of two cereals and say what foods can be made from each of them.
 4. Which of these things are good for you and which are bad?
 - a. not eating green vegetables
 - b. washing vegetables before cutting them
 - c. eating plenty of pulses
 - d. keeping food for a few days before eating it
 - e. eating a lot of oily food

What's same? What's different?

1. Give two similarities and two differences between:
 - a. Sugar and Jaggery
 - b. Bread and Chapati
 - c. Eggs and Dal

Talk and Write

1. What I ate yesterday. (What energy givers, body builders and disease fighters did you eat yesterday?)
2. Plan a meal. (What would you want to eat for lunch, to give your body what it needs?)

Play with words

1. Match these three words with their opposites:

energetic	diseased
strong	tired
healthy	weak

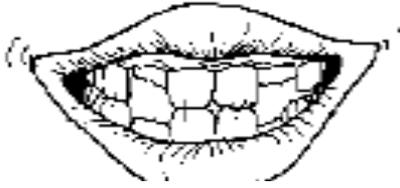
Ask a question

1. Ask questions about the foods you eat. Think of how you will try to find the answers.

DID YOU KNOW?

- Do you eat ragi? Of all the cereals we eat, ragi has the best body builders and disease fighters!





Tooth talk

1. What's in your mouth?

Ask your friend to open his or her mouth. Describe what you see inside.

2. Looking at teeth

- Look at your teeth in the mirror. As soon as you have eaten something, look at your teeth again. Feel them with your tongue. Do they look and feel different?
- Bring a tooth to school. If your tooth falls out, or if someone in your family has a tooth fallen out, take it. Wash it well with soap, and bring it to school.

Draw a picture of this tooth.

3. Talking with teeth

त थ द ध न

Say these letters. Which part of your mouth did your tongue touch?

Check this out!

Do your teeth hurt when you eat or drink something very cold, very hot, or very sour?

If they do, you may have holes in your teeth! Tell your parents and see a dentist (tooth doctor).

Remember this

Teeth chew your food. They help you to speak. Gums hold the teeth in your mouth.

Babies' teeth are called milk teeth. They fall out after a few years. New, bigger and stronger teeth take their place.

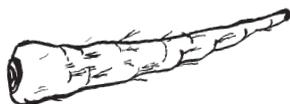
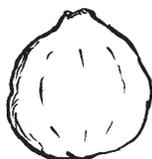
Take care of your new teeth. If they fall out, you will have no more teeth.



These foods help to build strong teeth and bones:



Milk and things made out of milk,
drumstick leaves, spinach and other green leafy vegetables,
fish, ragi, pulses like rajma and chana,
nuts and seeds like onva (ajwain), sesame (til) and cumin (jeera).



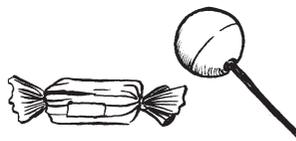
Chew carrots, turnips, radish and guavas.
They exercise your gums.



These foods are BAD for your teeth:

Avoid toffees and chocolates.

Sweet and sticky foods are bad for your teeth.



How teeth get dirty:

Bits of food you eat,
Are stuck between your teeth.
They will rot,
They will smell,
They will make you feel unwell.

Food sticks between your teeth. If you let it stay there, it becomes food for tiny living germs. Your mouth smells bad. The germs make holes in your teeth. Your teeth become yellow and black. Your gums get swollen. You get toothaches.

So keep your teeth and gums clean!

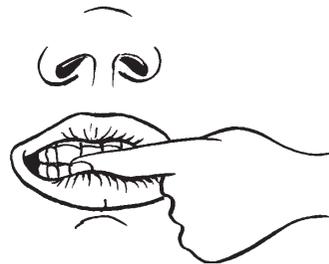
Massage your gums every day
to make them strong.

Wash your mouth after eating or drinking:

Rinse your mouth with water.

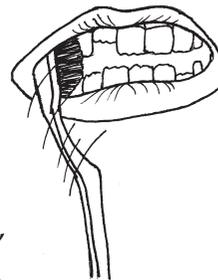
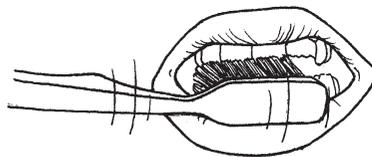
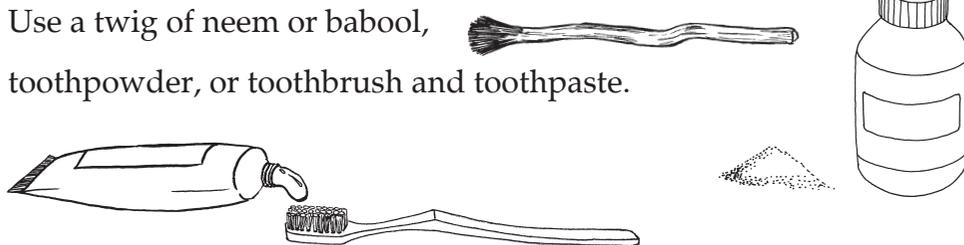
Rub teeth and gums well.

Rinse your mouth again.

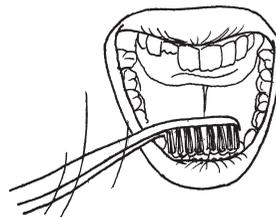
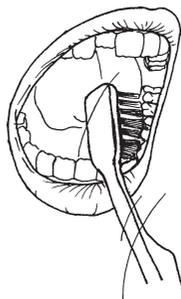


Brush your teeth every morning and evening:

Use a twig of neem or babool,
toothpowder, or toothbrush and toothpaste.



Brush up, brush down,
Brush inside and out.
On the right, on the left,
Brush every tooth well.



Know these words

rot

rinse

massage



EXERCISES

Short questions

1. Which of these things are good for your teeth and which are bad for them?
 - a. Eating carrots, drumstick leaves and ragi
 - b. Washing your mouth after drinking milk.
 - c. Eating sticky sweets
 - d. Rubbing your gums while washing your mouth
 - e. Not brushing your teeth
2. What hard foods do you like to chew with your teeth?
3. What foods can you eat without using your teeth?

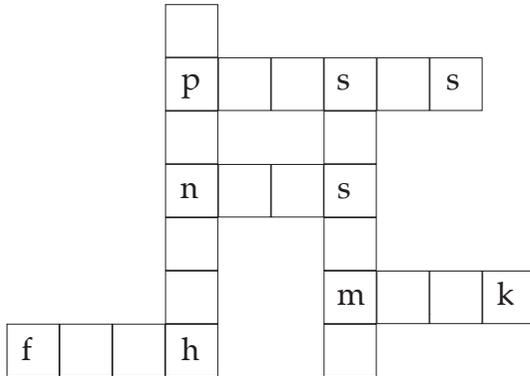
Talk and write

1. How my tooth fell out.
(Did you know that the tooth was going to fall out? How did you know? When did the tooth fall out, what did you do then? How many of your teeth have fallen out so far?)
2. My new teeth.
(Look at your new teeth in a mirror. How many new teeth do you have? Are they smaller than your milk teeth or bigger? What do you do to take care of your teeth?)

Play with words

1. Complete these pairs of words to say how you should brush your teeth:
 - a. Up and _____
 - b. Inside and _____
 - c. On the Right and on the _____

2. Fill the squares with names of foods that give you strong teeth:

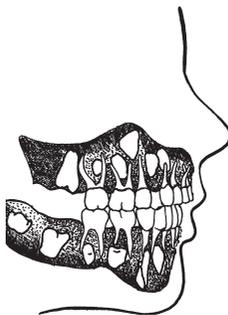
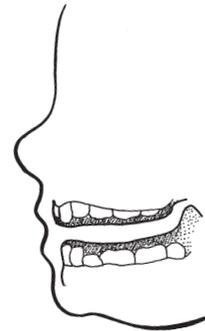


Ask and find out

1. Ask your grandfather or grandmother if they have lost their teeth. Do they use false teeth? Can they eat hard food? Can they talk without their teeth?
2. If there is a baby in your house or nearby, find out how old it was when it got its first tooth. How many teeth does it have now? Can the baby eat hard food like sugercane and groundnuts? Find out what it eats and drinks.

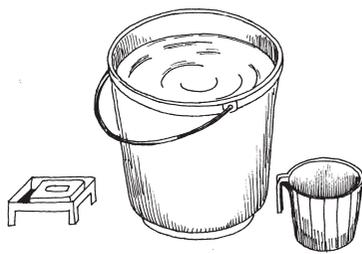
DID YOU KNOW?

- You were born with two sets of teeth hidden inside your gums. One set of teeth grew, and came out your gums. These were your milk teeth.



- Now the other set of teeth are growing, and pushing the milk teeth out one by one!

- The hardest part of your body is the outer cover of your teeth.
- If your skin, muscles or bones are hurt, your body can repair them. But the body can not repair a broken tooth.



Apu's bath

Apu was in the bathroom, but there was no sound from inside. Mini banged on the door. "Apu! Hurry up with your bath, or we will be late for school!"

"I'm hurrying! I'm hurrying" called Apu.

"What are you doing inside?" Mini demanded.

"I'm washing my legs, and scrubbing between my toes."

"And now?"

"My arms, and between my fingers!" Apu was really enjoying himself.

*Wash that dirt,
Wash that sweat.
Scrub the body,
Scrub the head!*

*Behind the ears,
Around the neck,
In folds of skin,
That's where you check!*

*Between the fingers,
Between the toes,
Under arms and legs,
Around the nose!*

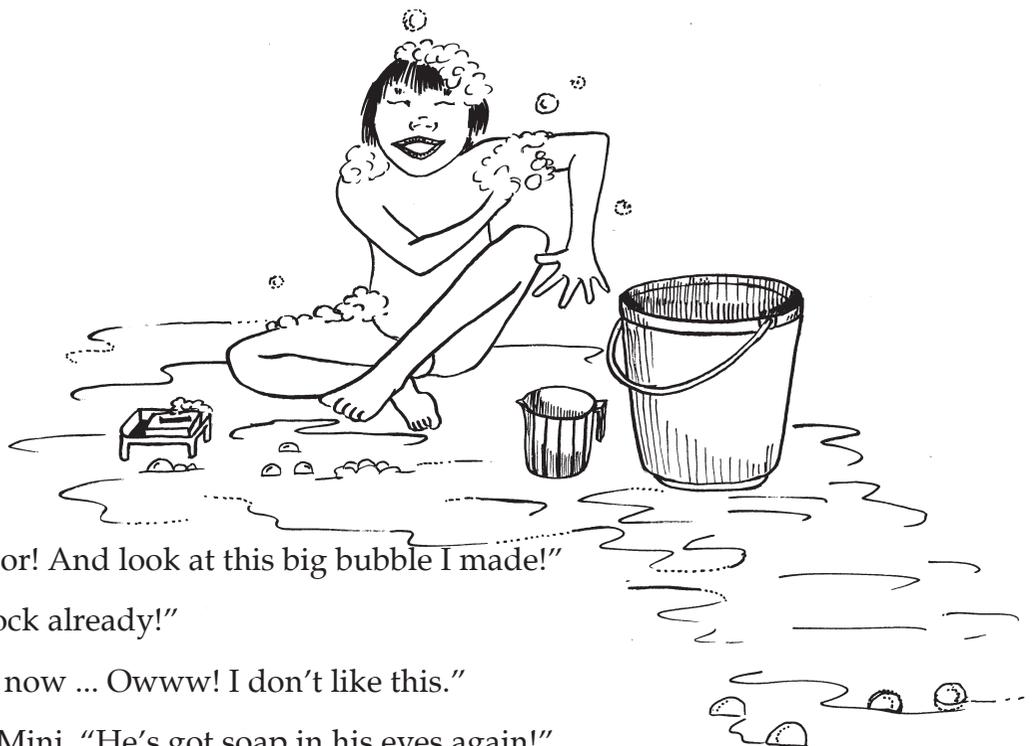
"Apu?"

"I'm sliding on the floor! And look at this big bubble I made!"

"Apu, it is seven o' clock already!"

"Okay, okay! My face now ... Ow! I don't like this."

"Poor Apu," thought Mini. "He's got soap in his eyes again!"

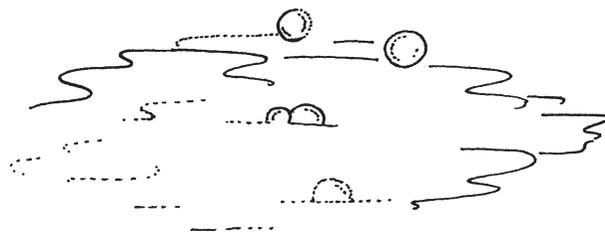


There was sound of water being poured hurriedly. Apu rushed out, wiping his face. "Mini, why do I always get the soap in my eyes and water in my nose?"

"Close your eyes, and take a deep breath just before you splash water on your face."

Mini told him. "Let's go swimming today, then I will show you!"

Apu jumped with joy. "Playing in water is such fun!"



A healthy, happy body

1. Clean and bright

Ask these questions to yourself and to two of your friends:

- a. Did you brush your teeth today?
- b. Did you have a bath?
- c. Did you comb your hair?
- d. Are your hands clean?
- e. Are your nails cut and clean?

2. Daily routine

Write down the activities that you do every day, from the time you wake up, till you go to sleep. Your list should include the activities that are written below. Remember that you do some of these things more than once in the whole day:

Have a bath	Pass stools
Wash your hands and feet	Comb your hair
Brush your teeth	Wash your mouth
Eat food	

Check this out!

Check your list of activities for these things:

- a. Do you brush your teeth at least *two times* in the day - once after waking up, and once before going to bed?
- b. Do you wash your mouth *every time* after eating food?
- c. Do you wash your hands and feet after passing stools, and after coming home from outdoors?

If your answer to any of these questions is “No”, write down the activities again, in the order that you should do them.

3. How strong are you?

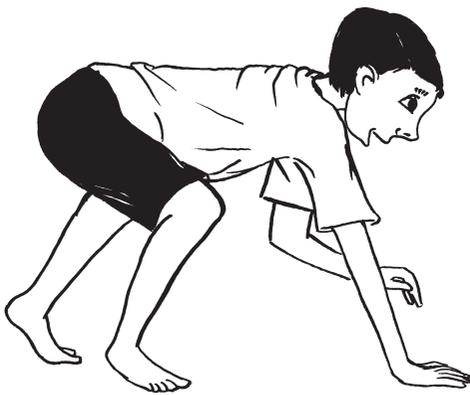
This game is called “Arm wrestling”.

Play it with your friend. Who is stronger?



4. Exercise your body

a. Walk like a duck. Jump like a frog. Run like a four-legged animal.



b. Each of you show one exercise to the class. The whole class can do the exercises.

Remember this

Eat the right kinds of food

Eat energy givers, body builders and disease fighters. Drink plenty of water.

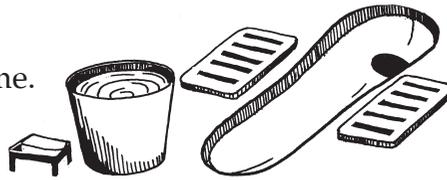
Keep clean

Every day

Brush your teeth

Pass stools:

Use a sanitary latrine.



If there is no latrine, pass stools in a place far away from wells, rivers or other drinking water. Cover the stools with mud.



After passing stools, wash yourself. Then wash your hands well with soap or ash. Wash your feet.

Have a bath:

Dirt sticks in folds of skin. Wash the places on your body where your skin is folded. Wash between your fingers and toes.

After coming home from outside, wash your hands and feet.

Wash your hair one or more times every week.

Comb your hair:

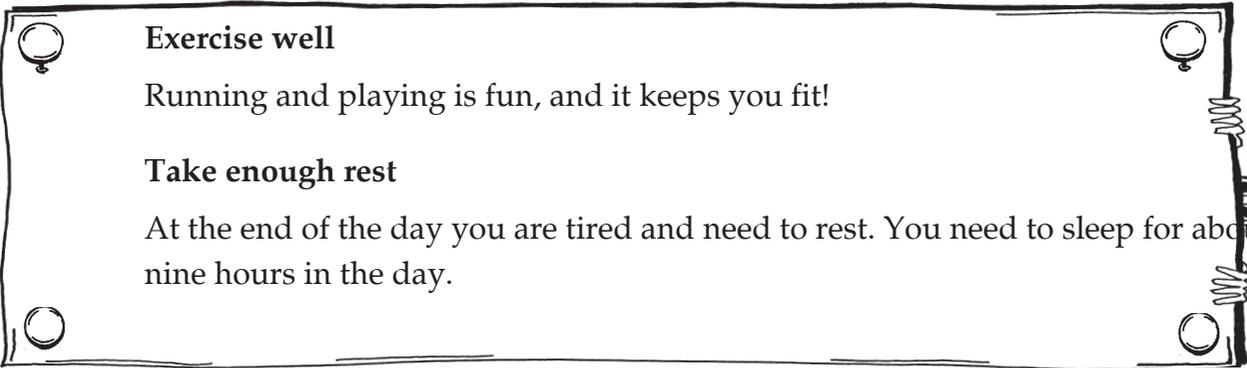
Use a clean comb. Check your hair for lice. If you have lice, take the help of an older person. Use a medicine to remove the lice.



Keep your nails short and clean:

Dirt and germs from your nails can get in your food, and make you sick.

Cut your nails every few days. Never bite your nails.



Exercise well

Running and playing is fun, and it keeps you fit!

Take enough rest

At the end of the day you are tired and need to rest. You need to sleep for about nine hours in the day.

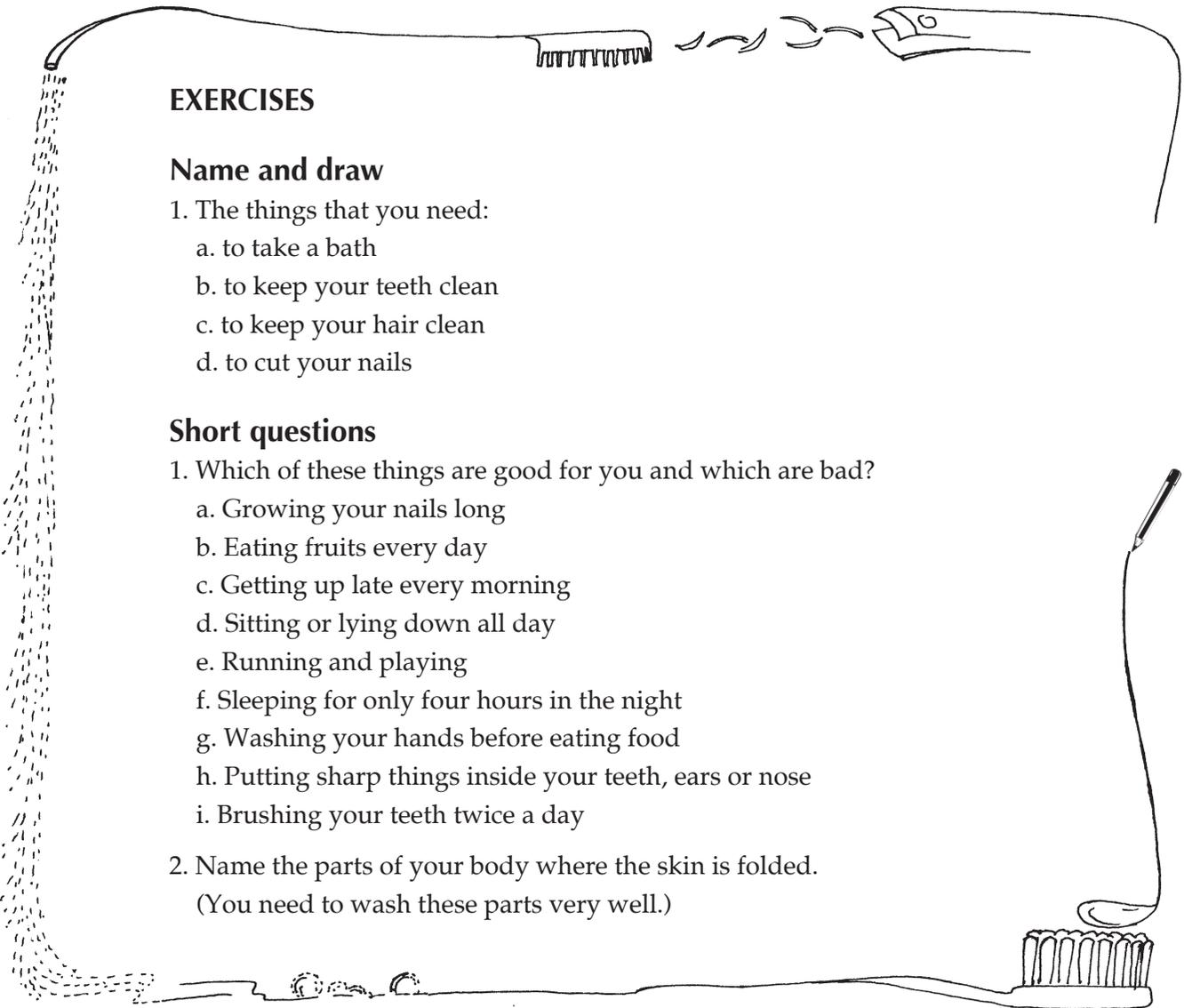
Know these words

dirt

sweat

stools

sanitary latrine



EXERCISES

Name and draw

1. The things that you need:
 - a. to take a bath
 - b. to keep your teeth clean
 - c. to keep your hair clean
 - d. to cut your nails

Short questions

1. Which of these things are good for you and which are bad?
 - a. Growing your nails long
 - b. Eating fruits every day
 - c. Getting up late every morning
 - d. Sitting or lying down all day
 - e. Running and playing
 - f. Sleeping for only four hours in the night
 - g. Washing your hands before eating food
 - h. Putting sharp things inside your teeth, ears or nose
 - i. Brushing your teeth twice a day
2. Name the parts of your body where the skin is folded.
(You need to wash these parts very well.)



What's same? What's different?

1. Give two similarities and differences between:
 - a. Teeth and nails
 - b. Comb and toothbrush
2. Find the odd one out:
 - a. soap, water, dirt, towel
 - b. langdi, playing cards, kho-kho, kabaddi

Talk and write

1. The games I play.

(Write down the names of the games you play. Guess which of these games give you a lot of exercise.)

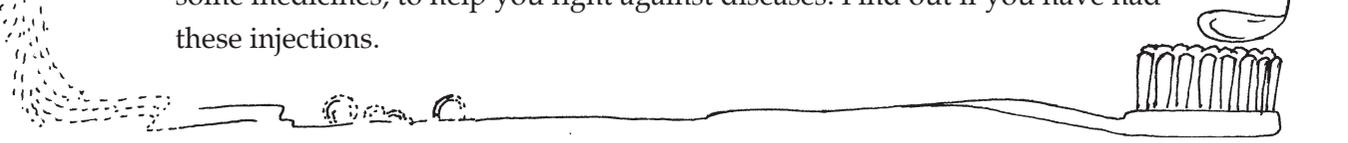
2. What illnesses I have had.

(Have you had a fever, cough, cold, stomach upset, chicken pox, anything else?)

3. When I fell ill.

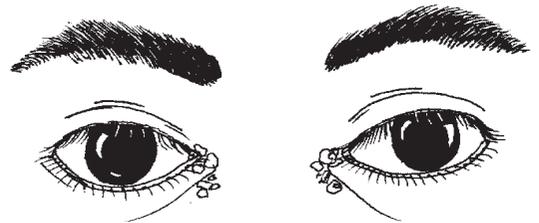
(How did you know you were ill? What felt wrong? Did you have to take medicine? Did you have to take rest? Did you eat as usual or did you take special food? Did you see a doctor? What did the doctor do?)

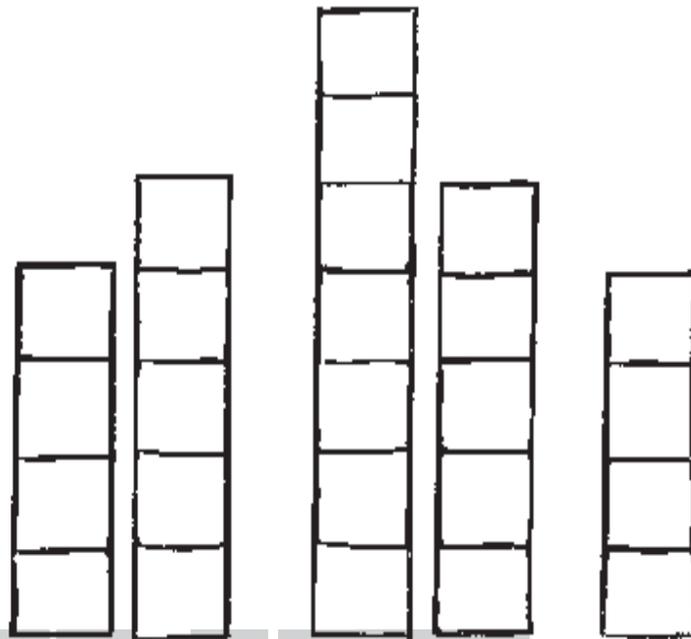
Ask and find out

1. When you were a baby, the doctor must have given you some injections and some medicines, to help you fight against diseases. Find out if you have had these injections.
- 

DID YOU KNOW?

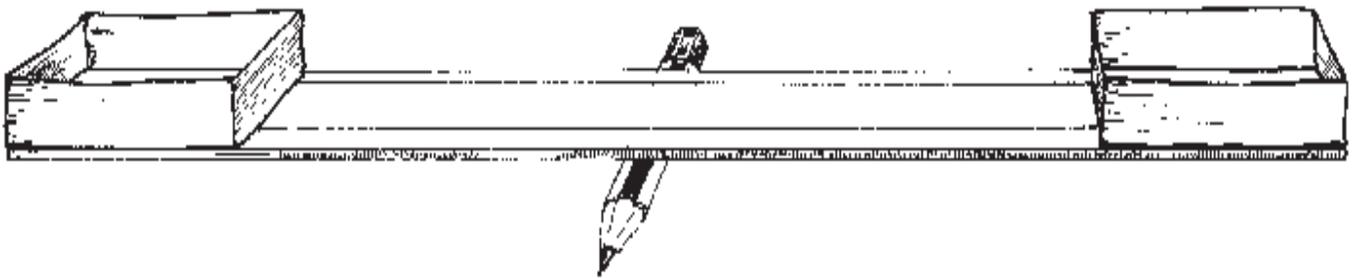
• *The tiny green or gray balls that you see every morning in the inside corner of your eyes, are made of dirt and dead germs. The watery tears in your eyes kill many germs and wash out the dirt to one corner of your eye. Remove this dirt with clean, cool water.*





UNIT 3

MEASUREMENT



Chapter 9

Howmany, how much?

Chapter 10

How long, how high, how far?

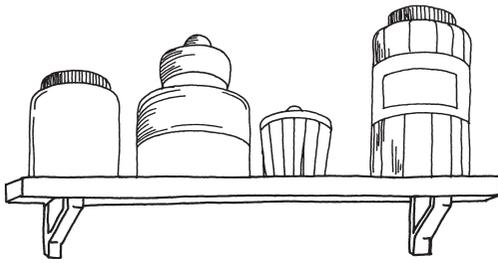


*You know how to count. You
can count up to very large
numbers. You count things
like stones, shells, trees,
people and houses. You ask,
“how many of these”?*

But here is a riddle:

*How would you count sugar,
or water, or time, or the
space around you?*

*Sounds difficult? It is not
really! We are going to do it
and see!*



CHAPTER 9 HOW MANY, HOW MUCH?



Cooking surprise

“Apu!” called out Mini, “Dada and Amma are not home yet, and I am very hungry!”

Let’s see what there is to eat in the kitchen,” said Apu.

They went into the kitchen and looked around. Some curry and cooked vegetables were kept in covered pots. But there was no sign of roti or rice.

“We will give them a nice surprise!” said Mini, “Let’s make some rotis!”

“Okay. Amma does not let us light the stove on our own, but I can shape some nice round rotis.” Apu jumped in excitement.

“What do we need to make rotis?” asked Apu.

“It’s easy!” said Mini, “We need flour, and salt and water!”

Mini quickly got down the box of flour from the shelf. Apu ran and got a mug full of water, and the jar of salt. “Wash your hands, Mini,” he called out, “we are the cooks today!”

“We’ll mix some flour with salt. Now let’s put the water.” said Mini.

“I love to mix it!”, said Apu, putting his hands in happily.

“Apu, look what has happened!” cried Mini, “this looks like a soup. How can we shape it into rotis?”

“It is a very salty soup!” replied Apu, tasting some doubtfully.

Just then, Dada walked in. “Mini, Apu! What is going on here?”

“Well, we thought of making rotis ...” began Apu.

“... but now we have this soup!” said Mini.

“Ah! That’s interesting. How did you make it?” asked Dada.

“We put in

one cup of wheat flour,” said Mini, “then

half a spoon of salt.”

“That’s a bit too much salt”, remarked Dada. “And how much water?”

“Well, we just poured it in.” said Apu, looking unhappy.

Dada patted him. “Don’t worry Apu, we will make something delicious out of this mess. We will put in it,

one cup of rice flour,

half a cup of chana flour,

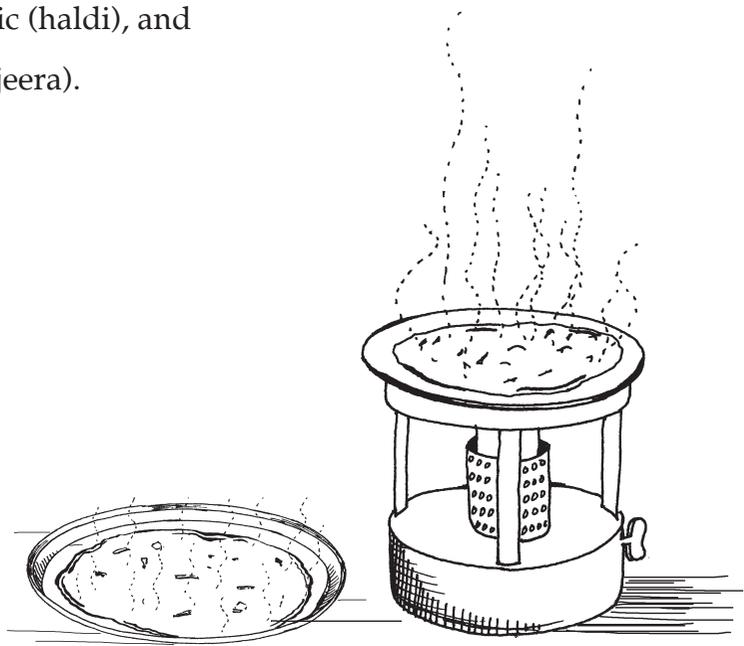
two chillies,

one onion,

a half spoon of powdered turmeric (haldi), and

two spoons of powdered cumin (jeera).

Mini and Apu got to work, washing, then chopping and mixing it all together. Dada heated the tava, put some oil on it, and they poured some of the mixture. Soon the kitchen was filled with the delicious aroma of spicy dosas!



Measures for everything !

1. Write a Recipe

Find out how to make some food that you like. This is a recipe. Write down your recipe. Make a recipe book for the class.

1998

2B

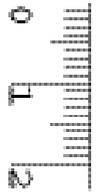
6

13.50/-

411 302

2. Look for Numbers

Look for numbers around you. Look for all the numbers you can find in this book. What does each number mean? Look for numbers written in your school, on buildings, doors, shops, buses, roads, coins, clocks and calendars. Even on your shoes or chappals you might find a number.



41 613

10

MH-01
6972

10

Think! Think!

Why are all these numbers there? What are the things they tell us?

3. How heavy is it?

a. Hold your school bag in your hand, and your friend's school bag in the other. Say which one is heavier.

In what other ways can you find out which bag is heavier?

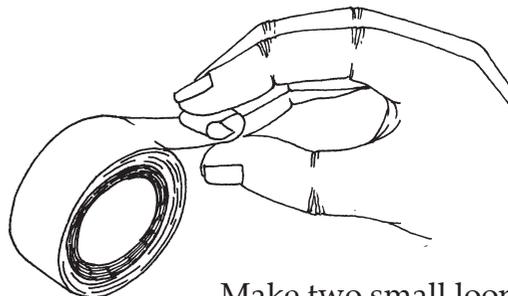
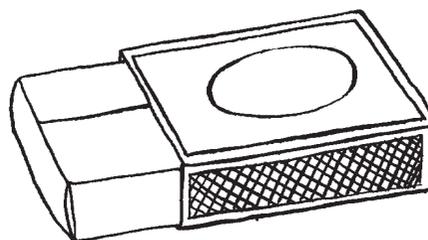
b. You use a balance to weigh things, that is, to find out how heavy they are.

You will need:

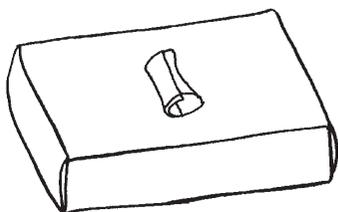
a foot-ruler or flat strip of wood,
one full and one empty matchbox,
a pencil and
cellotape.

Keep aside the matches from the full matchbox.

Remove the trays from both matchboxes.



Make two small loops of cellotape with the sticky side outside.



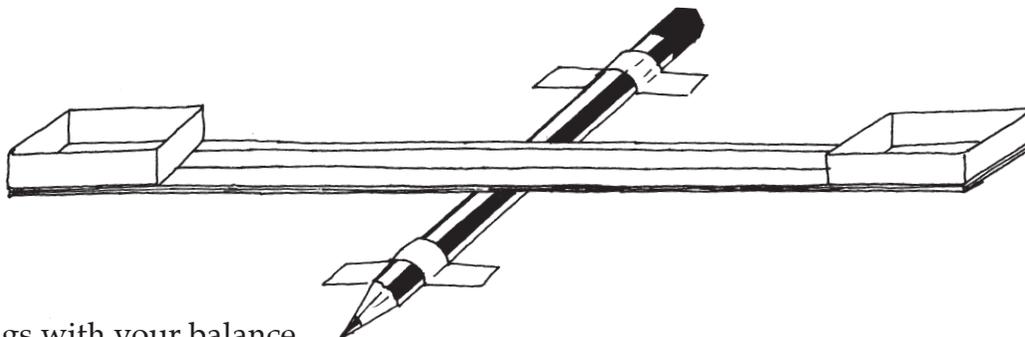
Fix the loops to the underside of the matchbox trays.

Fix the trays on the two ends of the ruler.

Using cellotape, fix the pencil on a flat table.

Carefully balance the ruler on the pencil.

This is your Balance.



c. Weigh things with your balance

Carefully, without touching the ruler, put a matchstick in one tray of your balance. What happens?

Now put a matchstick in the other tray. What happens?

Put three matchsticks in the first tray. Now put matchsticks one by one in the second tray. How many matchsticks do you need in the second tray to keep the ruler balanced?

Instead of matchsticks, try using peanuts, chana or other seeds.

d. Try different small things in the tray, like, a coin, a button or an eraser. See how many matchsticks or seeds you need in the other tray to keep the ruler balanced. Make a table like this.

	Number of matchsticks to balance
10 paise coin	
button	
eraser	

Put 20 grains of rice in one tray of the balance. See how many grains of puffed rice you need in the other tray to balance them.

4. How much water does the bucket hold?

Get an empty bucket and two mugs. One mug should hold more water than the other. Fill the smaller mug to the brim with water. Pour this water into the bucket. Now stop and think:

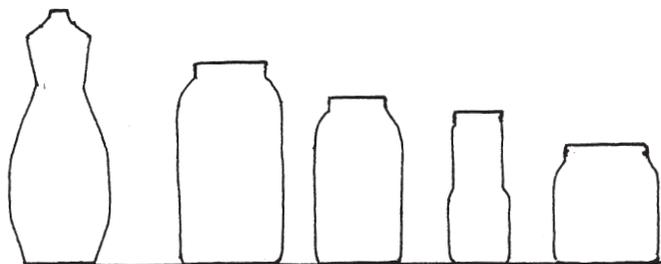
- How many mugs of water will fill the bucket?
- If I use the bigger mug, how many mugs of water will fill the bucket?

Find out if your guesses were right. Pour in mugs full of water, until the bucket is full.



5. Which jar is bigger?

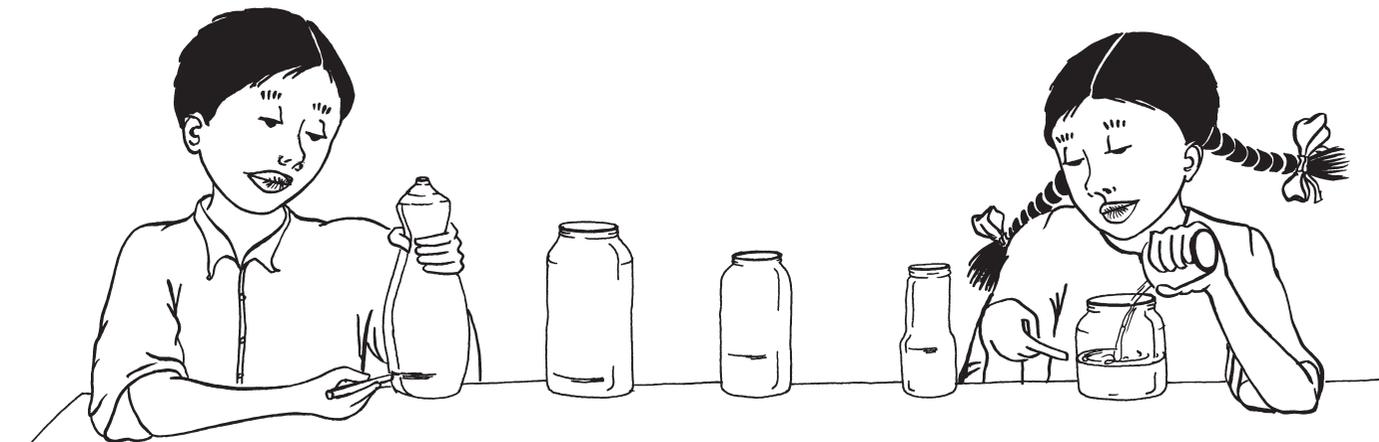
a. Jar parade



Tallest shortest

Get five or six jars and bottles of different shapes and sizes. Arrange the jars and bottles from the tallest to the shortest.

Draw pictures of your jars from tallest to shortest.



b. Guess the level

Now get some water in a bucket, and an empty cup from which you can pour water easily. Fill the cup with water.

In each jar or bottle, you are going to pour a cupful of water. But before pouring the water, you have to guess what the level of water is going to be.

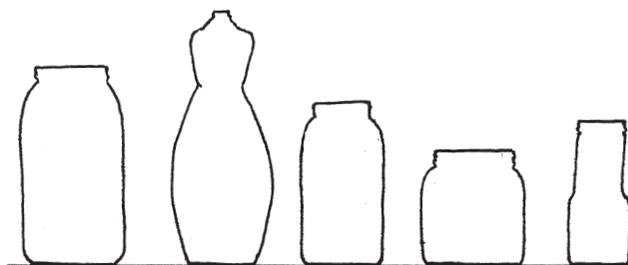
Mark your guess on the jar with a piece of chalk, and then pour the water.

Guess what the level will be when you pour the next cupful of water. Now see if your guess was right.

c. Think and do!

Find out which jar or bottle holds the most water, and which holds the least.

Now arrange the jars and bottles, in a line, from the one which holds the most water, to the one which holds the least. Draw a picture of the jars arranged like this.



Holds the most holds the least

6. Musical beat

Sing a song or say a rhyming poem. Clap to the beat of the song or the poem.

7. Tick-tick counting

Choose 10 students in the class. Give the first student a duster or some other small thing.

Let one student stand at the front of the class. This student is the 'Timer'.

As soon as the teacher says, "start":

Pass the duster from one student to the next, until it reaches the tenth student.

At the same time, the 'Timer' starts counting "tick-tick one", "tick-tick two", "tick-tick three" ...

The Timer stops counting as soon as the duster reaches the last student.

How many 'tick-tick numbers' did it take for the duster to reach the last student?

With another set of ten students, will it take the same 'tick-tick numbers' to pass the duster?

Use the 'tick-tick number' trick to see how long your friend takes to say a tongue-twister, read a poem, write a sentence, drink a cup of milk, climb a staircase, or do any other activity you can think of.

Know these words

weigh	balance	year	week	minute
weight	equal	month	hour	second

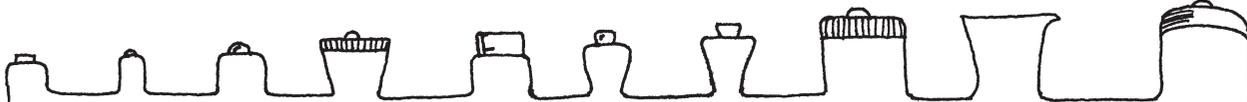
EXERCISES

Name and Draw

1. What a grocer uses to weigh things
2. Something that lets you know the time

Short questions

1. Arrange the names of these things from heaviest to lightest:
a notebook the teacher's table
a jasmine flower a pencil
your schoolbag
2. Which is heavier, a bag full of raw (uncooked) rice or a bag full of puffed rice? Give a reason for your answer.
3. Write the names of some things that are so heavy that you do not know how to weigh them.
4. Write the names of some things that are so light that you do not know how to weigh them.
5. A cup holds 33 small spoonfuls of milk. If you use a bigger spoon, will the cup hold more, or less, or the same number of spoonfuls of milk?

- 
6. One full bucket holds 12 mugs of water. Now you want to fill this bucket with sand instead of water.
- How many mugs of sand will the bucket hold, if the sand is level in the mug?
 - If the sand is heaped up in the mug, will the bucket hold more, or fewer, or the same number of mugs of sand?
7. Write down the day, the month and the year when you were born.
8. How old are you? Say your age in years and months.
9. What time does your school start, and what time does it get over?
10. How many minutes long is one period in your school?
11. Arrange these times from shortest to longest:
- | | |
|---|-------------------|
| an hour | the school recess |
| a year | a week |
| a second | a minute |
| a day | a month |
| the time between flowering and fruiting of the mango tree | |
12. You have planted a groundnut seed. Write the events below in the order in which they happened:
- The first two leaves came out.
- The seed became bigger.
- I put the seed in the mud.
- The root came out.
- I watered it for the first time.
13. Write the names of some hot things and some cold things.
14. Arrange the names of these things from hottest to coldest.
- A cold drink
- Hot food in your plate
- Ice
- Tap water
- Fire

Ask and find out

- Have you ever stood on a weighing machine? Find out your own weight.
 - Have you watched a milkman distributing milk? Describe what you saw. How does the milkman know how much milk he is giving you?
- 

3. Ask others in your family when they were born. Find out how old they are.
4. If you are not well, your mother or father touches you to see how warm you are. Have you ever been checked with a thermometer? What is a thermometer used for?

Figure it out

1. Apu had some water in a bucket and two empty pots, but his mug was missing. He knew that one of the pots could hold exactly three mugs of water and the other pot could hold two mugs of water. Suddenly, he had an idea! He said, "Mini, Tell me how to use these pots to get exactly one mugful of water!"



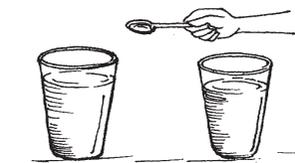
3 mugfuls



2 mugfuls

2. Mini had some orange juice in one glass and some mosambi juice in another glass. She took a spoonful of the orange juice, put it in the mosambi juice, and mixed it. Then she took a spoonful of this mixture, and put it in the orange juice.

Now she asked a tricky question! "Apu, is there more orange juice in the mosambi juice, or more mosambi juice in the orange juice, or are the two amounts the same?"



lemon juice

orange juice

□ DID YOU KNOW?

- An Indian elephant weighs as much as about 180 children like you.



CHAPTER 10 HOW LONG, HOW HIGH, HOW FAR?

Activities

1. Growing taller

On a wall at home, mark how tall you are. After every few months, check if you have become taller.

2. Tall and short

a. Stand next to a friend and check who is taller. Write the name of one student in the class who is taller than you, and one who is shorter than you.

Will the tallest and the shortest students be able to write these names? Say why.

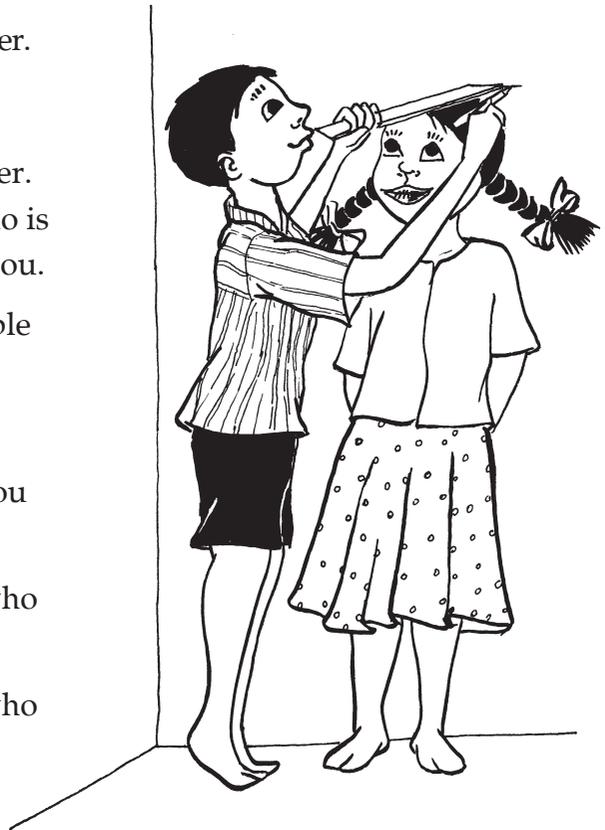
b. Think and do!

Before you start counting, think about how you will do this:

Count the number of students in your class who are taller than you.

Count the number of students in your class who are the same height as you. (Do not forget to count yourself!)

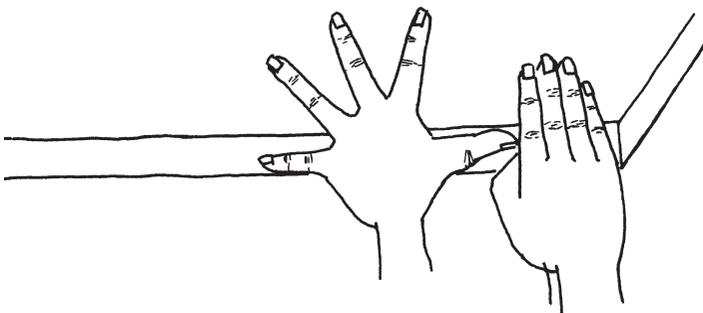
Count the number of students in the class who are shorter than you. Add the three numbers that you got.



3. Measure with your body

a. Which is longer, your finger or your nose?

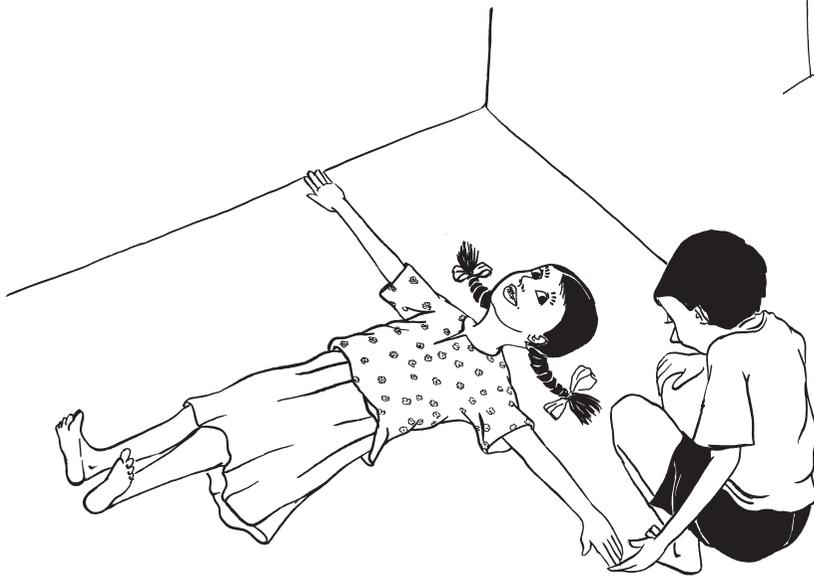
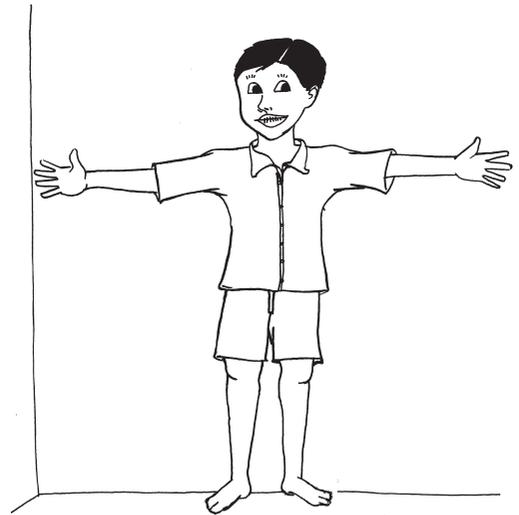
b. How long is the table? Use your hand span to measure it. See what other things you can measure with your hand span.



Do the next four activities at home:

c. How long is your arm span? How many hand spans fit into your arm span?

d. Use your arm span to measure the length of a wall in your house.



e. Lie down on the ground and ask a friend to mark your arm span with a piece of chalk. Now check if you are taller than your arm span, or shorter.

f. Walk across the room like this.

Now walk across the room normally.

Now run across.

Now hop across.

Now skip across.

Each time, write down how many steps you took.

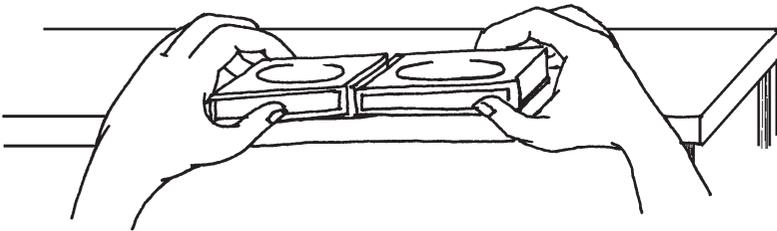


4. Measure with other things

Use only two matchboxes for this activity. Find out how many matchboxes can fit in the length of a table.

Now guess how many matchsticks would fit into the length of the table. Would it be the same as the number of matchboxes, or more, or less?

Name some other things that you could use to measure the length of the table.



5. How many letters in your name?

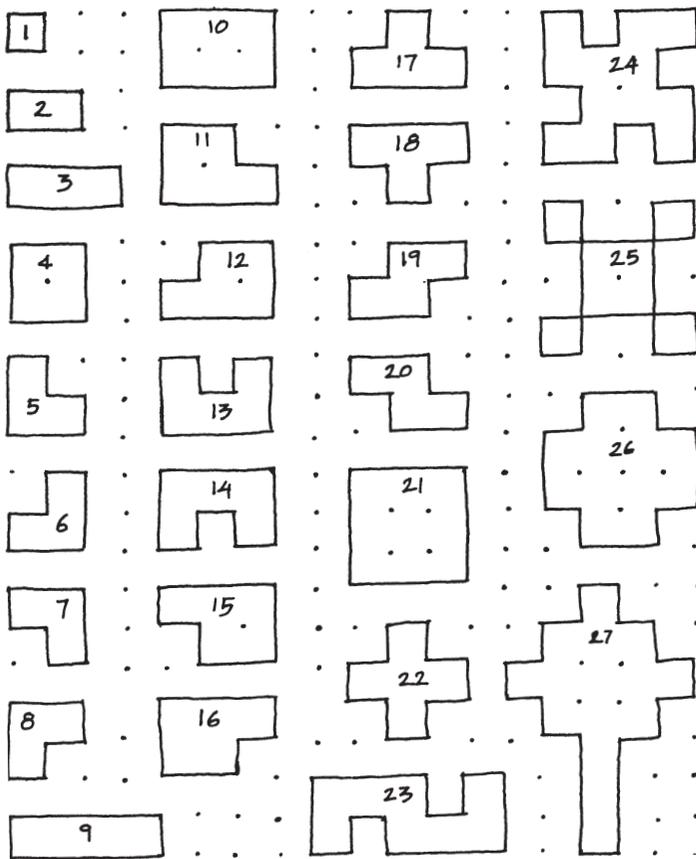
Write down your name and count how many letters there are in it.

Write the names of all the students in your class on a square-lined paper like this:

1	2	3	4	5	6	7	8	9	10	11	12
V	A	N	E	E	T	A					
M	U	N	N	A							
M	O	H	A	M	M	A	D				
S	A	V	I	O							
N	I	T	U								

Now answer these questions:

- How many letters does the shortest name have? Name the students in the class who have names that are the shortest.
- How many letters does the longest name have? Name the students in the class who have names that are the longest.
- How many students in the class have names that are five letters long?
- What is the most common length of name in your class?
- What is a length of name which no student in the class has?

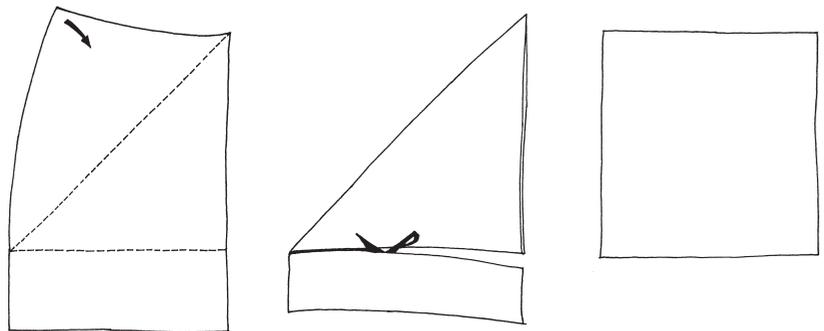


6. Copy the shapes

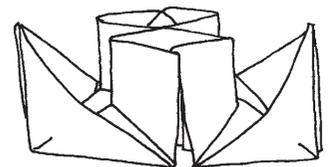
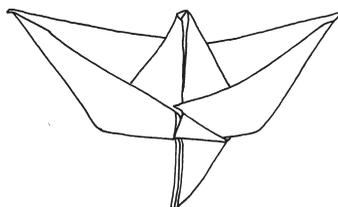
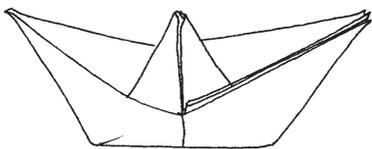
Page 81 in your Workbook has lines of dots. Copy these shapes on that page. If you do not have a Workbook, use a square-lined paper.

7. Paper boats

Cut two square sheets of paper.



Fold one sheet of paper to make a boat.



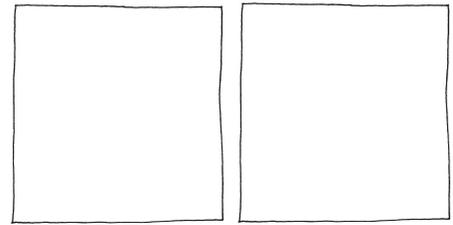
Your boat might look like this

or this

or this

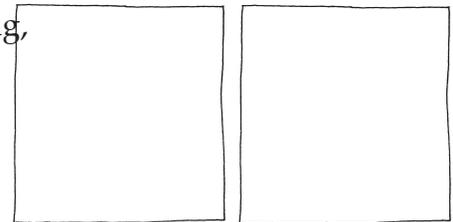
Cut the other sheet into four smaller squares.

You are going to make four small boats from these squares. The boats should all be the same kind as your bigger boat. But before you make the small boats, you have to make a guess!

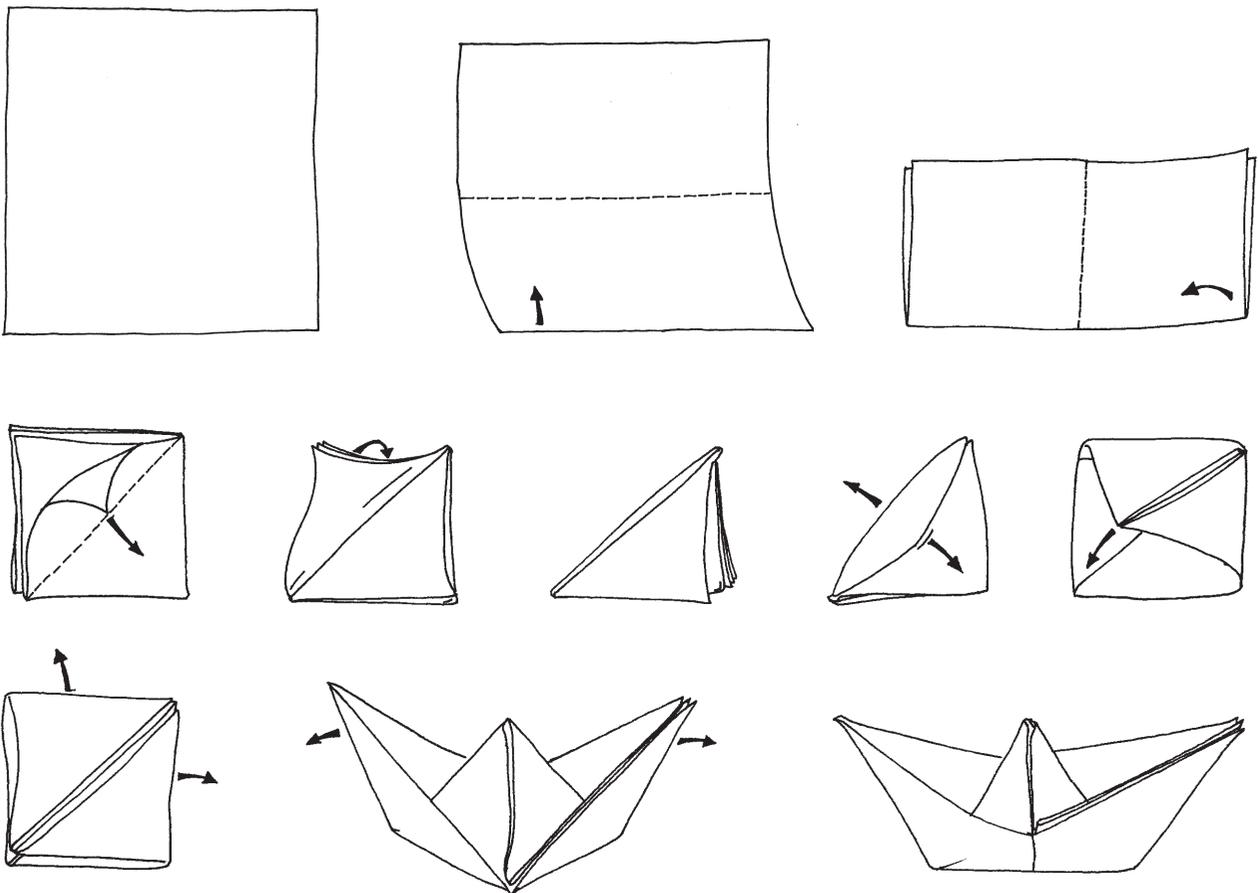


a. Will the big boat be twice as long, or three times as long, or four times as long, as each small boat?

b. Will the big boat be twice as high, or three times as high, or four times as high, as each small boat?



Follow these steps to make your boat:



8. The way to school

Draw a picture to show how you go from home to school.

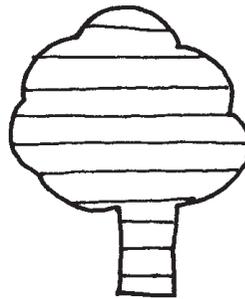
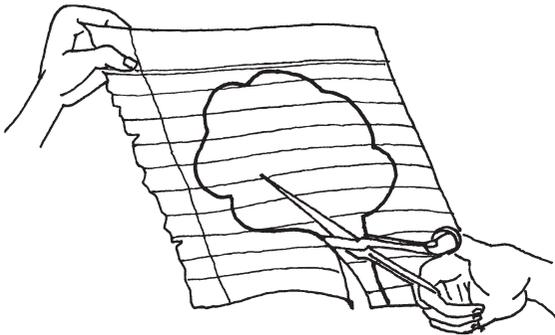
9. Cut and stick

You will need:

a sheet of paper,
scissors,
old coloured magazines or other coloured papers,
glue.

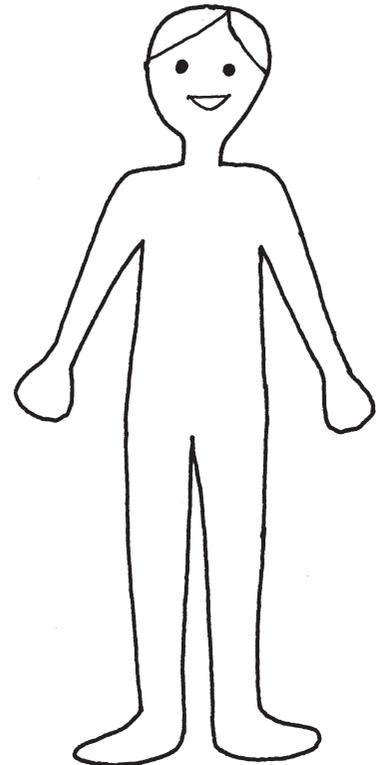
On a sheet of paper, draw pictures of any two of these:

a tree, a cloud, a house, an animal you see around you. Cut out these pictures.



Find some old coloured magazines. Cut out pieces of coloured paper of the right size and shape to stick on your pictures.

For example, you can cut out a green and a brown shape like this for a tree.



Trace out this doll on a sheet of paper. Cut it out. Now cut a dress out of coloured paper and stick it on the doll.

With your teacher's help, stick together some sheets of newspaper to make a large sheet.

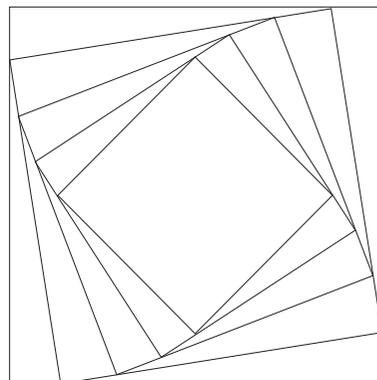
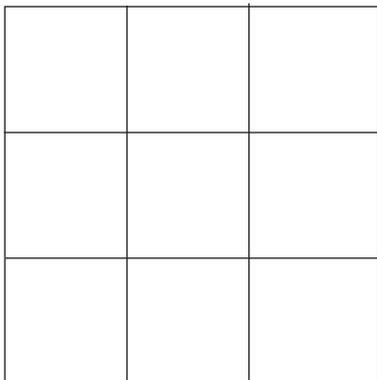
Arrange the pictures made by the whole class on this large sheet, to make a village scene. Draw a river and a street for your village.



EXERCISES

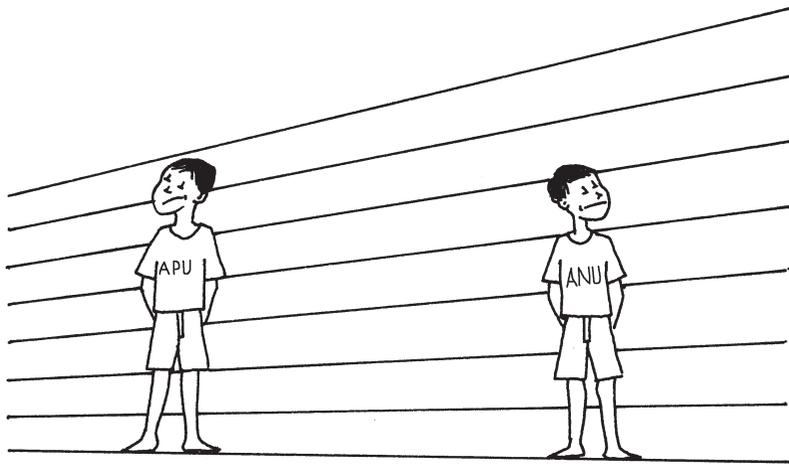
Count!

1. Count how many squares you see in these pictures.



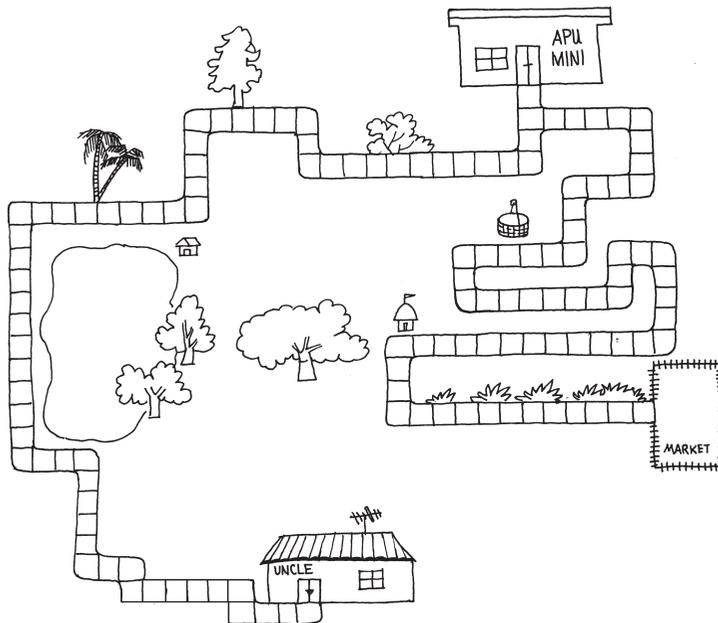
Short questions

1. Anu and Apu had a fight about who was the taller one. You help them to decide.



2. Write the names of three things that are taller than you and three things that are shorter than you. Arrange the names of these things from tallest to shortest.

3. Apu and Mini started from home one day. Mini had to take a letter to their uncle's house. Apu had to go to the market. Who walked more?



4. Write the name of something that is very near to you. Next, write the name of something that is farther away from you. Then, write the name of something that is still farther away. Keep doing this until you have a list of at least five things. The last thing in your list could be something that is very far away from you.

Play with words

1. Match these words with their opposites:

long	low
wide	less
high	short
heavy	least
more	narrow
most	light

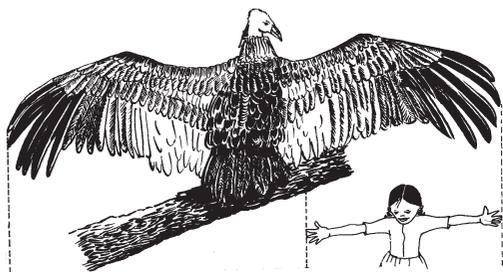
Ask and find out

1. Ask your teacher: How far is it from your town or village to the next town or village?
2. We measure large distances in kilometers or miles. Have you ever walked one kilometer or more than that? Do you remember how much time you took to walk that distance?

Figure it out

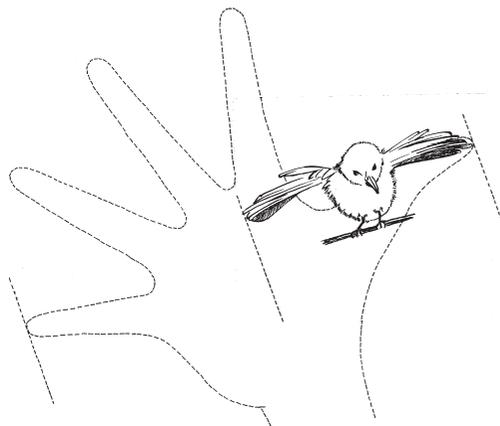
1. Apu and Mini went to the terrace of their one storey house. They had with them a stone and a ball of string. They also had an idea for how they could find the height of their house. How do you think they did it? (Amma had warned them not to lean out from the terrace!)

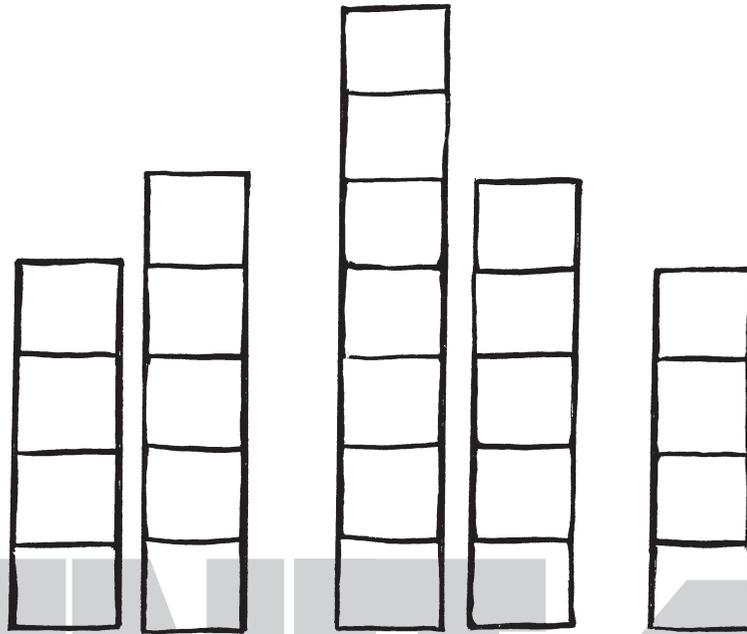
DID YOU KNOW?



- The Himalayan griffon vulture has a wing span that is more than double your arm span.

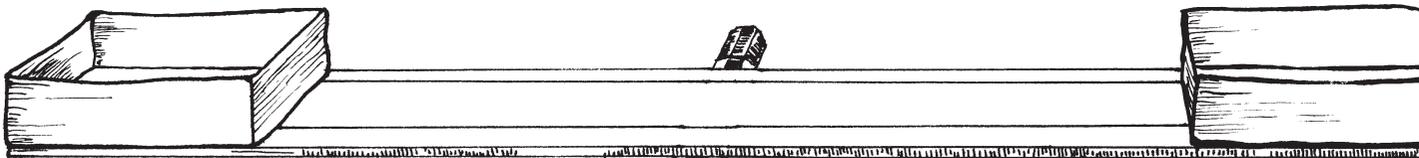
- The wing span of a Plaincoloured flowerpecker is about half of your hand span.





UNIT 4

MAKING HOUSES

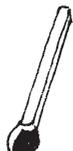


Chapter 11

Chapter 12

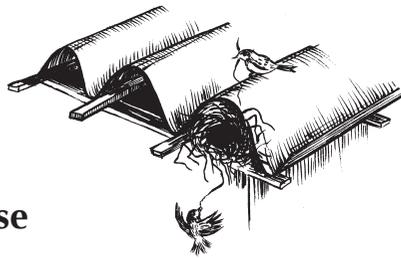
Houses of all kinds

Make your own house



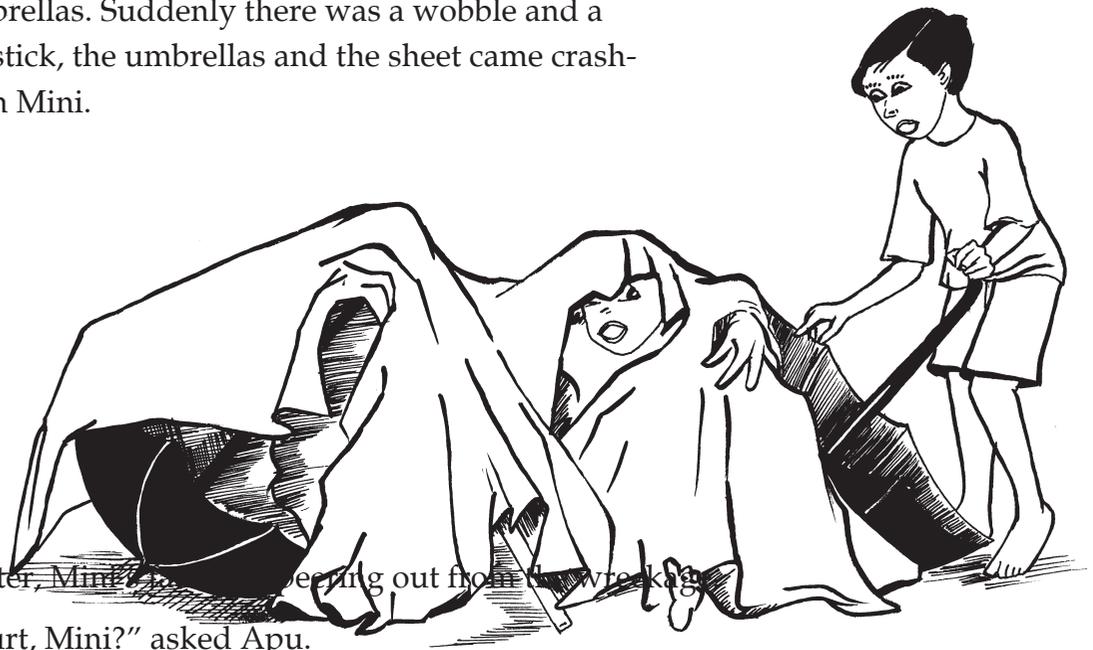
Home is a place to live,
to eat, to study and to rest.
We want our home to
keep us cool in summer,
warm in winter, dry in
the rainy season and safe
at all times. Like us, other
animals too need homes.

What are different homes
made out of? You are going
to look, and find out. And
then you will make a little
toy house of your own!



Apu and Mini's house

Mini and Apu were playing house. They had opened out two big umbrellas. Apu was trying to cover them with an old sheet. Mini was sitting inside with Dada's walking stick, holding the sheet up between the two umbrellas. Suddenly there was a wobble and a bump! The stick, the umbrellas and the sheet came crashing down on Mini.



A minute later, Mini was crawling out from the wreckage.

"Are you hurt, Mini?" asked Apu.

"No," said Mini. "But Apu, we need a stronger house!"

"You are right, Mini," agreed Apu, "A house big enough for the two of us, which does not keep falling down!"

Dada came and sat next to them, "Do you know the story of the crow and the sparrow?"

"Oh Dada, of course we know the story. Amma used to tell it to us when we were so small!"

Mini started, "There was a crow, and there was a sparrow. The crow's house was made of cowdung, and the sparrow's house was made of wax. One day there was a heavy rain, and the crow's house got washed away."

"Poor crow!" said Apu, "I would never make a house of cowdung!"

"Why not?" asked Dada.

“It mixes with water, and gets washed away,” Apu replied.

“The sparrow was clever!” said Mini, “Where did it get wax from?”

“Perhaps it took an old bee-hive!” Apu said, laughing. “Bees make their own wax to build their house.”

“Would a wax house melt in summer?” Mini wondered. “Maybe that is why bees make their hives in shady places?”

“We could make our house out of wax!” Apu said.

“A wax house as big as you? It would not stand up, Apu.” Dada smiled. “You know that sparrows do not make houses of wax, and crows do not make houses of cowdung. Everyone makes their house from materials that work well for them. Let us look at different kinds of houses.”



What are houses made from?

This is the nest of a tailor bird. The mother and father birds use leaves, stems, grass and cotton to build this nest. They both take care of the baby birds which hatch out of their eggs. Soon the little babies will grow up and fly away.

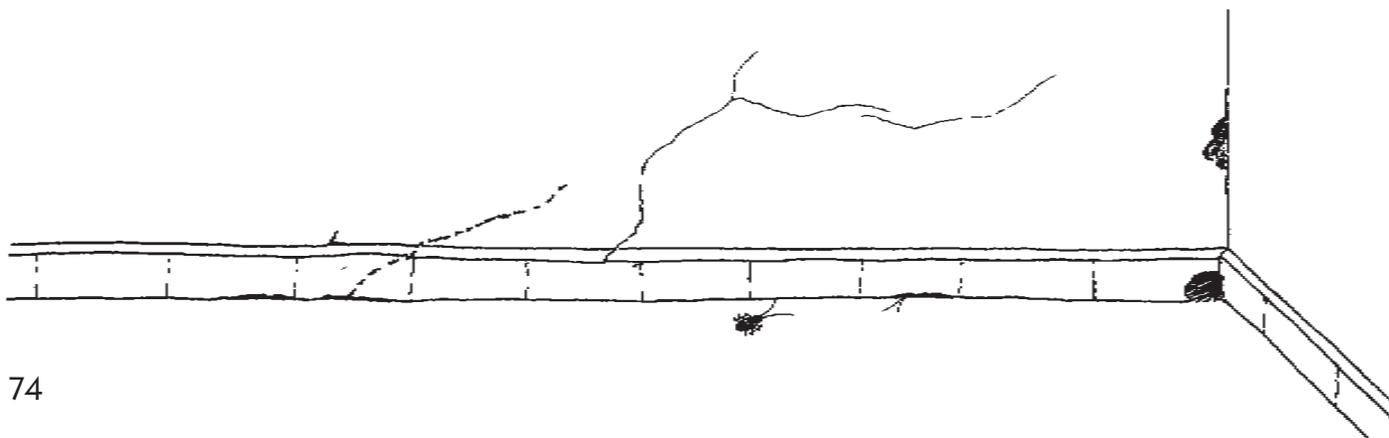
1. Make a nest

- a. Look for a nest from which the little birds have flown away. Make a list of the things that this nest is made of.
- b. Collect these things and make a nest like the bird's nest.

2. Homes inside your home

You have seen other living things inside your house. Do they have their own houses?

Watch for holes and cracks in the walls or floors of your house. These could be the doors of other houses! Guess how big the house of an ant or a cockroach might be.



3. What your classroom is made of

Look at all the different parts of your classroom like, walls, roof, floor, doors and windows. Write what these are made of.

4. What your home is made of

Look at the different parts of your house. Write what these are made of.

5. Where people live

Look for different kinds of houses of people around you. Write down what each house is made from.

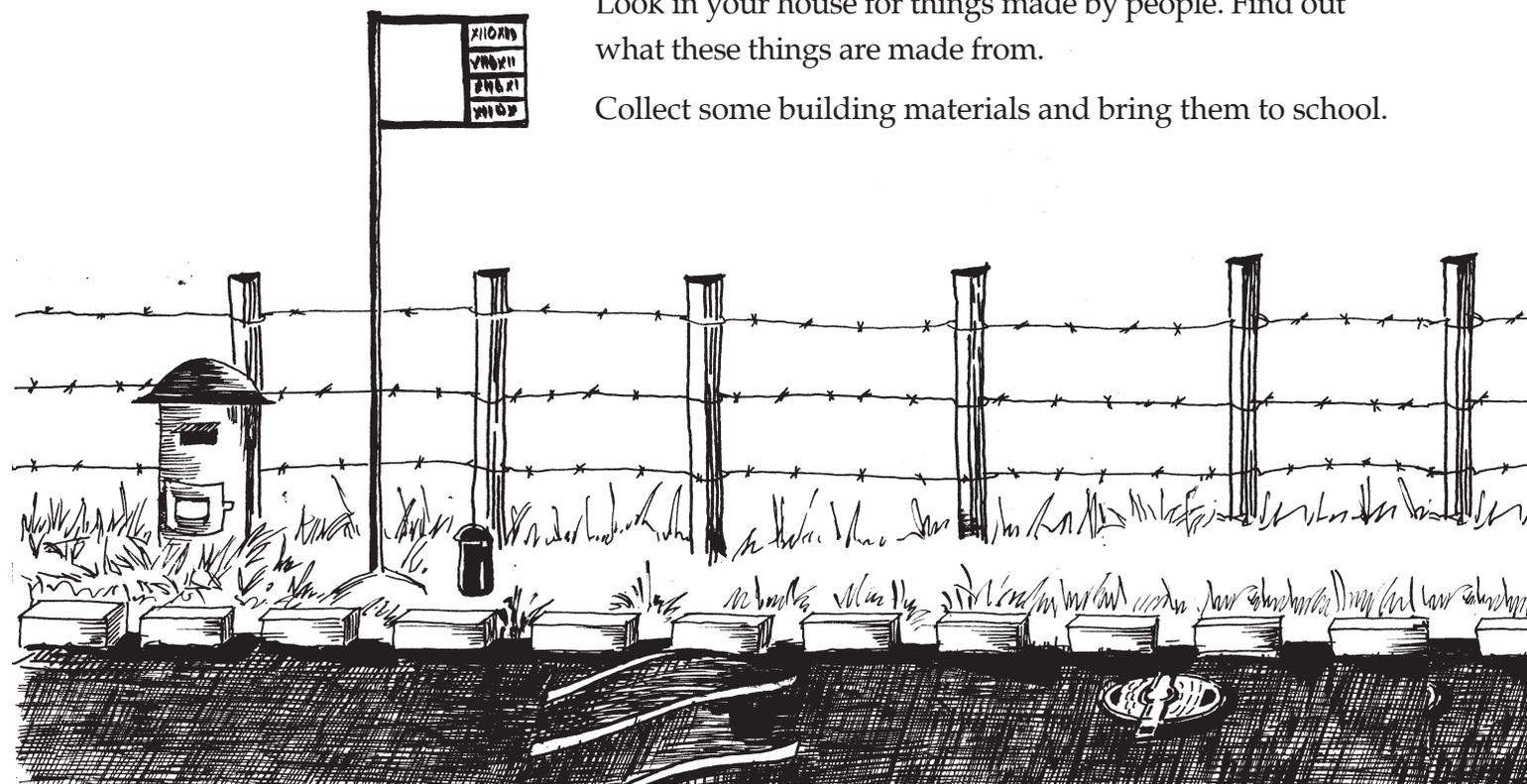
6. Things that people build

On your way from home to school, look at what you are walking on. Look at the road that buses and carts go on. Look at big roads and small roads. What are these roads made from?

Look on the sides of the road for other things made by people, like, footpaths, drains, bridges, electric poles, postboxes, bus stops and compound walls. Find out what all these are made from.

Look in your house for things made by people. Find out what these things are made from.

Collect some building materials and bring them to school.



Think! Think!

Could you make a house out of sand?

Grass stems are thin and bend easily. They can not stand by themselves. Then how can a house be made from grass?

Remember this

Like other animals, we need a house.

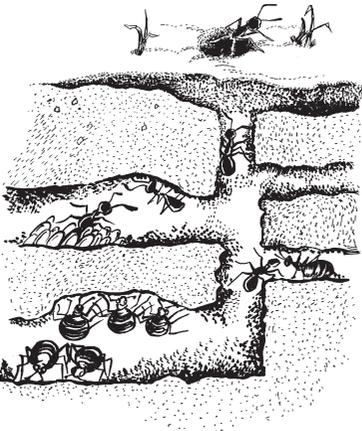
A house protects us against heat, cold, wind and rain. A house keeps us safe from animals which might attack us. A house is a place to store our food and other things.

Homes of other animals

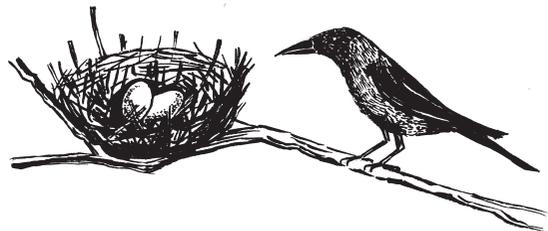
Rats, mice and rabbits burrow under the ground to make their homes.



Ants too burrow under the ground. Their houses have many rooms joined by tunnels.



Birds build nests when it is time for them to lay their eggs. At other times they rest on trees or other places.



The king cobra makes a nest of leaves and sand.

Sometimes, when their babies are to be born, dogs and pigs collect grass, small plants and leaves. With these they make a bed for their babies.



Animals that do not build a house

Scorpions, beetles and cockroaches live in gaps between stones or in cracks in walls.

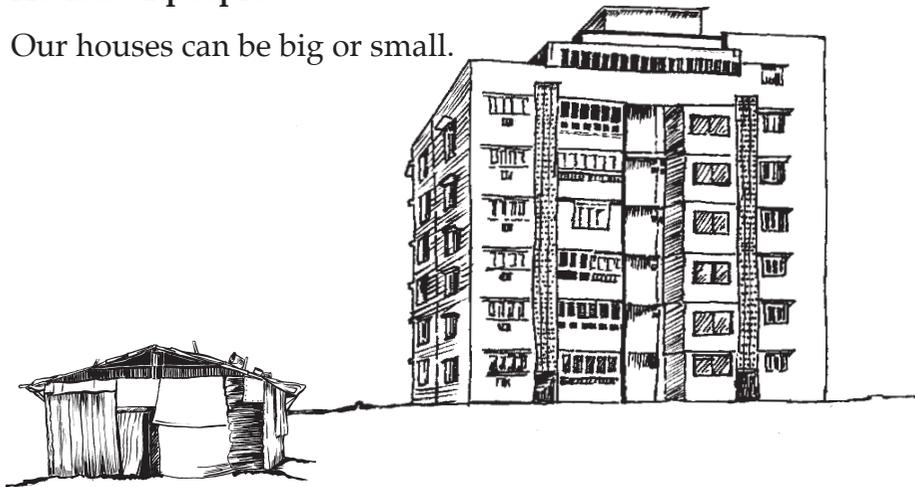
Most snakes live under heaps of stones, or in burrows made by other animals.

Squirrels and chameleons live in trees or in holes in tree-trunks.

We build houses for our domestic animals.

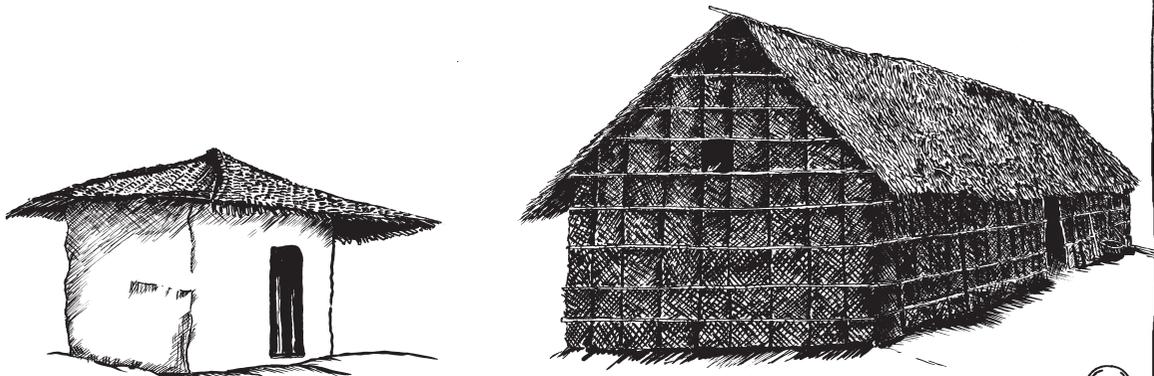
Houses of people

Our houses can be big or small.



Large buildings need strong materials like, stone, bricks, cement, steel, glass and plastic. These materials are not always found around us.

Small huts are made from things we find around us: like, mud, wood, bamboo, leaves and grass.

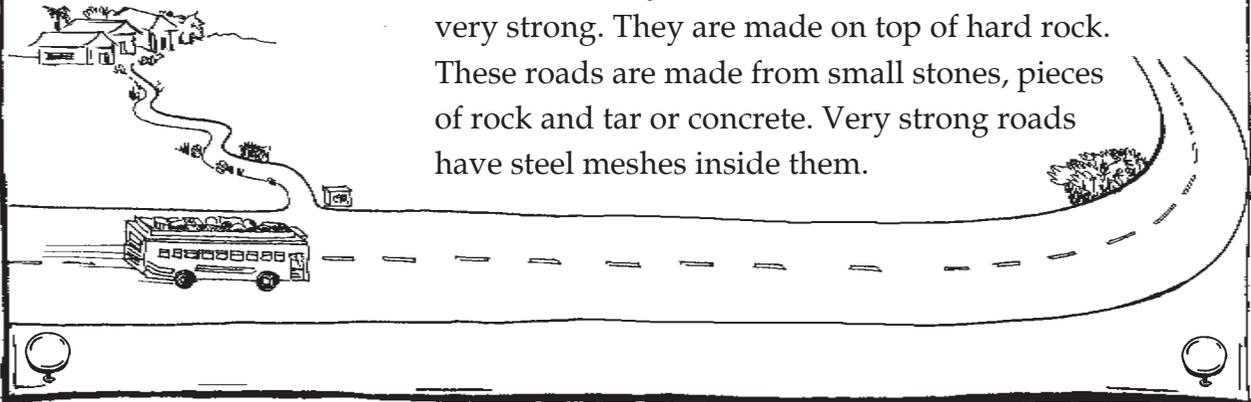




Roads

Roads for walking do not have to be strong. They can be made from mud. When it rains heavily, mud roads are difficult to walk on.

Roads for heavy buses and trucks have to be very strong. They are made on top of hard rock. These roads are made from small stones, pieces of rock and tar or concrete. Very strong roads have steel meshes inside them.



Know these words

material	cement	plastic
tunnel	concrete	bamboo
mesh	tar	

EXERCISES

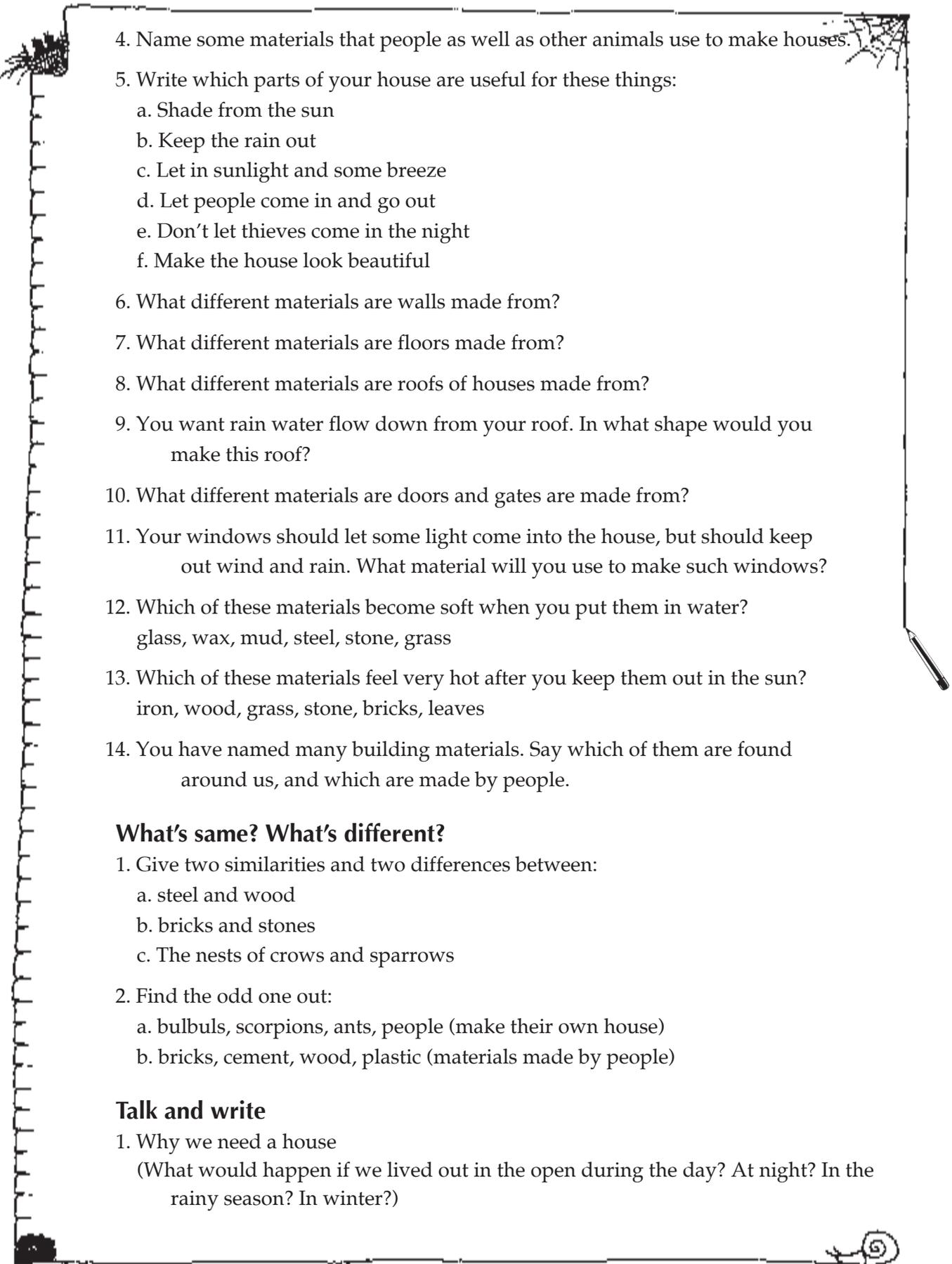
Name and Draw

1. A nest you have seen (name the bird that made it)
2. A house of a spider
3. Your own house

Short questions

1. Which of these large animals build their own houses?
eagle, rabbit, buffalo, cat, rat, rat-snake
2. Which of these insects make their own houses?
bees, mosquitoes, ants, flies, beetles, wasps, termites, cockroaches
3. Name the different domestic animals in your neighbourhood. Where do they live?



- 
4. Name some materials that people as well as other animals use to make houses.
 5. Write which parts of your house are useful for these things:
 - a. Shade from the sun
 - b. Keep the rain out
 - c. Let in sunlight and some breeze
 - d. Let people come in and go out
 - e. Don't let thieves come in the night
 - f. Make the house look beautiful
 6. What different materials are walls made from?
 7. What different materials are floors made from?
 8. What different materials are roofs of houses made from?
 9. You want rain water flow down from your roof. In what shape would you make this roof?
 10. What different materials are doors and gates are made from?
 11. Your windows should let some light come into the house, but should keep out wind and rain. What material will you use to make such windows?
 12. Which of these materials become soft when you put them in water?
glass, wax, mud, steel, stone, grass
 13. Which of these materials feel very hot after you keep them out in the sun?
iron, wood, grass, stone, bricks, leaves
 14. You have named many building materials. Say which of them are found around us, and which are made by people.

What's same? What's different?

1. Give two similarities and two differences between:
 - a. steel and wood
 - b. bricks and stones
 - c. The nests of crows and sparrows
2. Find the odd one out:
 - a. bulbuls, scorpions, ants, people (make their own house)
 - b. bricks, cement, wood, plastic (materials made by people)

Talk and write

1. Why we need a house
(What would happen if we lived out in the open during the day? At night? In the rainy season? In winter?)

2. House of an animal

(Where did you see it? Which animal did it belong to? What was it made of? What else did you see there?)

Play with words

1. Fill the squares!

We need a house to protect ourselves against , ,
and .

2. Search here for these building materials: bamboo, steel, glass, brick, grass, cement, wood, stone.

S G C T D S
T R E H W T
B A M B O O
R S E M O N
I S N O D E
C S T E E L
K G L A S S

Ask and find out

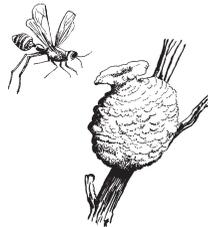
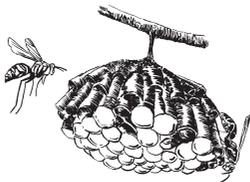
1. You might have seen a circus tent. Why is a circus housed in a tent and not in a large building?
2. Talk about building materials with your parents or other older people. Do they know about buildings made from other materials?
3. What were buildings made out of when your parents were children?

Ask a question

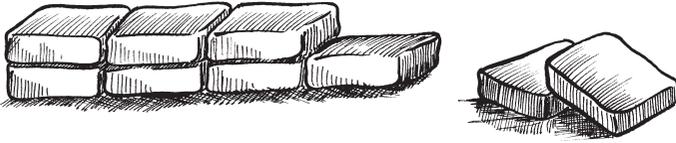
1. Ask questions about what different things are made of. Think of how you will try to find the answers.

DID YOU KNOW?

- *Potter wasps build their nests out of mud.*



- *Paper wasps chew pieces of wood into a pulp. They shape this pulp to make their nest. When the pulp dries, it becomes like tough paper.*



Build with mud

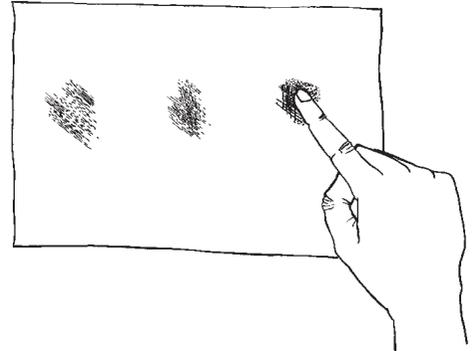
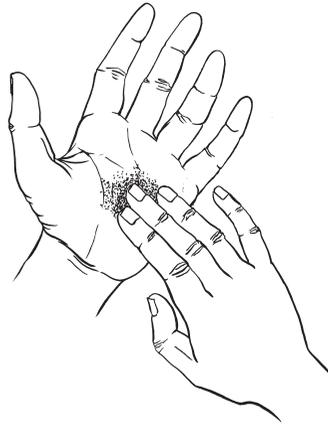
1. Different kinds of mud

You will need:

Two or three types of mud from different places near your home or school, like, a farm or garden, a playground, a pond or stream, a path, a building site or a potter's work-place, water to wet the mud.

For each kind of mud:

- a. Remove the stones and look at the mud. Describe the colour of the mud.
- b. Rub the mud between your fingers and palm when it is dry, and again when it is wet.
- c. Smell the mud when it is dry and again when it is wet.
- d. Rub the mud on paper.
- e. Check if the mud is easy to wash off your hands.

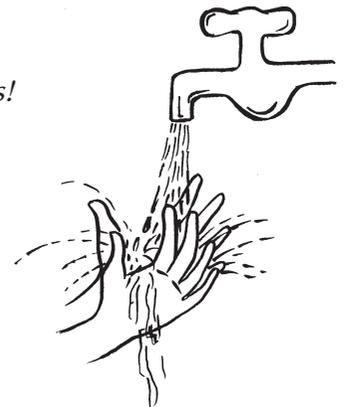


Take care!

Do not get mud from dirty places like garbage dumps or outdoor toilets!

After you finish playing in mud, wash your hands and nails well!

If you eat with muddy hands, dirt and germs will get into your stomach and make you sick.



2. Let's make bricks!

You will need:

Two empty matchboxes

Two or three kinds of mud

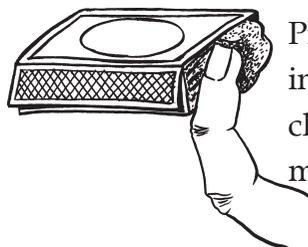
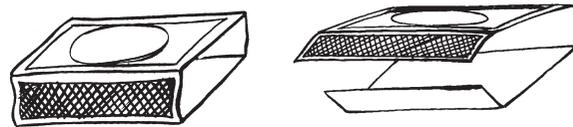
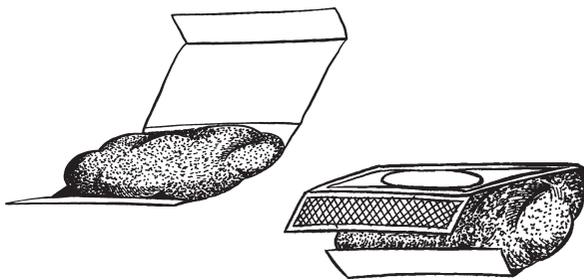
Newspaper to spread on the floor

Mug and bucket of water

Mix the mud with a little water so you can shape it with your hands.

Cut open the outer cover of a matchbox.

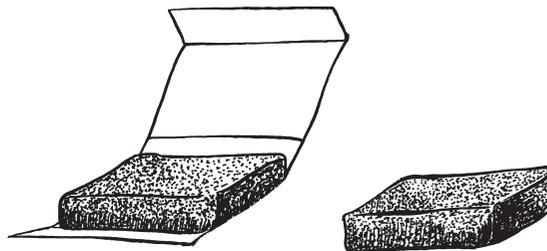
This is your mould.



Press a small lump of mud in the matchbox, cover and close it. Remove the excess mud.

Take the brick out of the mould. Make about 10 bricks in this way. Let your bricks dry.

Make bricks out of another kind of mud too. You will need these for the next activity.



3. Do and think!

You can also shape bricks with your hands. Then why do you need a mould?

Which is heavier, a wet brick or a dry brick? Why?

Dry 5 bricks in the shade, and 5 bricks in the hot sun. Which set of bricks dry faster?

Which set of bricks do you think are stronger?

4. How strong are your bricks?

You will need:

Bricks you have made out of different kinds of mud,

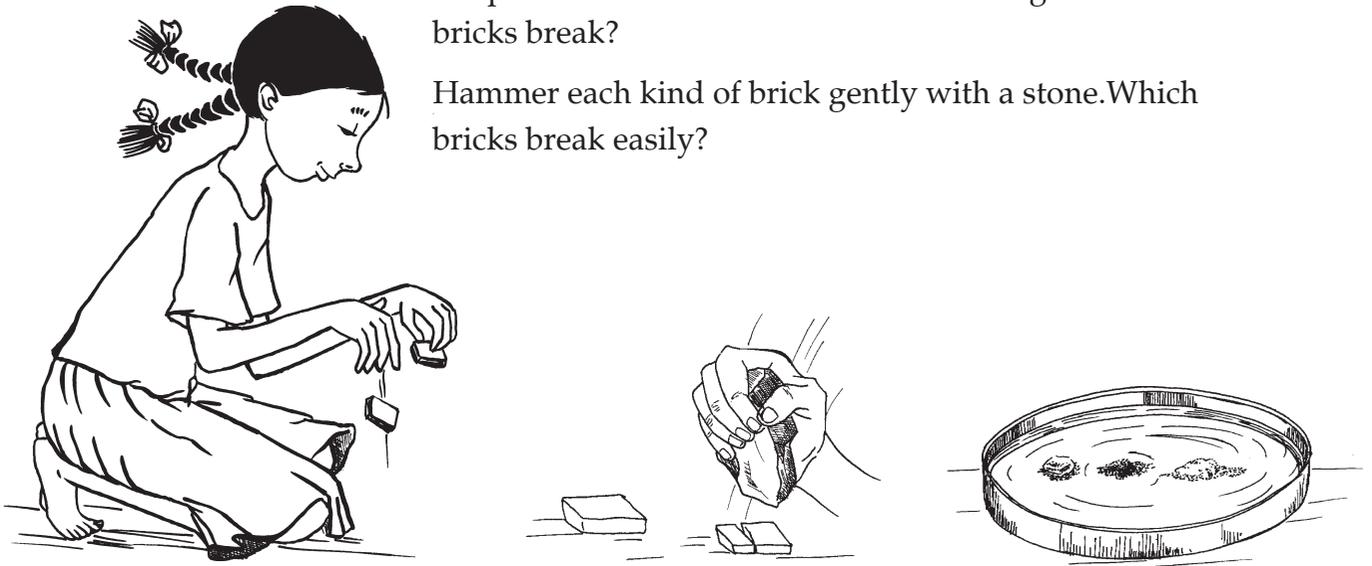
A piece of building brick,

A stone and

A plate of water.

Drop each kind of brick from the same height. Which bricks break?

Hammer each kind of brick gently with a stone. Which bricks break easily?



Soak each kind of brick in a plate of water. Which of the bricks soften easily with water?

Which ones are the strongest bricks?

Think! Think!

Are your bricks strong enough to make a real house? What would happen to the house after a heavy rain?

You have to choose bricks to make a house. Should the bricks be strong or crumble easily? Should they be light or heavy?

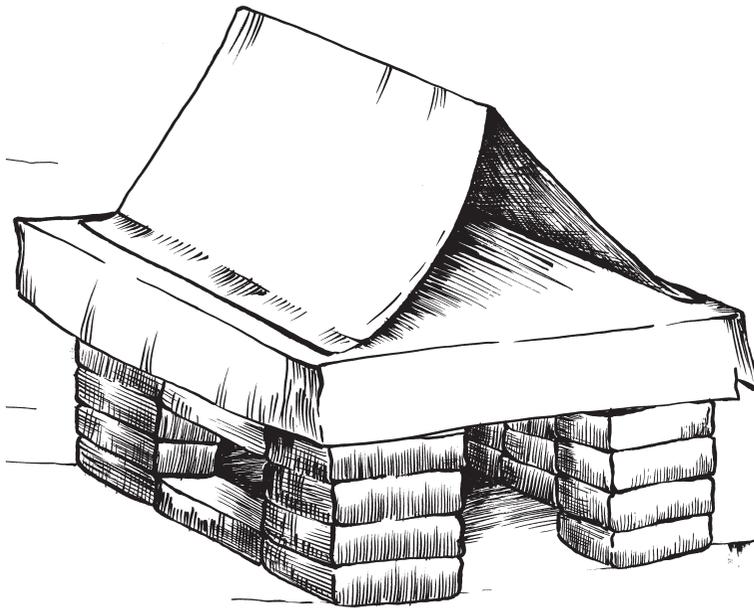
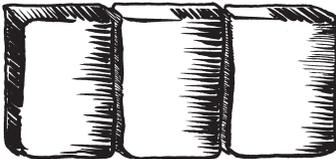
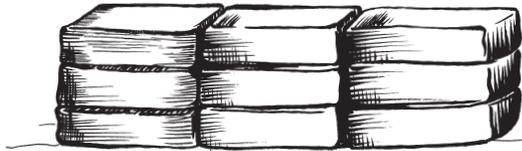
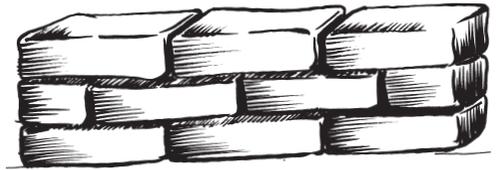
5. Build a wall

Collect the bricks made by you and your friends. Put them together to make a wall.

Which way of stacking makes a stronger wall?

Can you find a way to make your wall even stronger?

How would you make a wall
that does not fall down easily?



6. Build a house

You will need:

The mud that made the
strongest bricks in Activi-
ties 2 and 3

A sheet of cardboard
Newspaper and water
You may also think of
other materials to help
you make your house.

Make bricks out of the mud. While the bricks are wet, stack them together to build a house. Press the bricks down gently as you stack them. This will make them stick to each other.

Make sure your house has at least one opening for a door, and one for a window.

Find a way to make a roof for your house.

Draw a picture of the house you made. Label the parts of the house. Write the names of the materials you used to make the house.

7. Back to the mud

Your toy houses will make the school look nice. At the end of the school year, take your bricks and houses and put them back in the soil where they came from.

Know these words

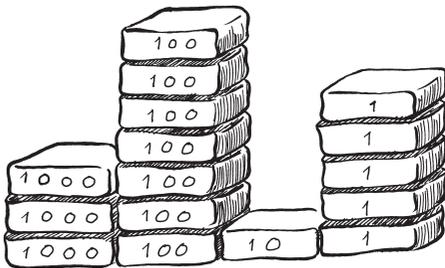
stack
stick

hammer
crumble

EXERCISES

Count!

1. Mini has stacked her bricks. She has 8 bricks in each row and 7 rows one above the other. How many bricks does she have?
2. Make different numbers using your bricks:



$$3000 + 700 + 10 + 5 = 3715$$

Name and draw

1. One brick
2. A brick wall
3. Different kinds of houses you have seen
4. Tools used by a mason

What's same? What's different?

1. Give two similarities and two differences between:
 - a. garden soil and sand
 - b. mud and cement
 - c. A wet brick and a dried brick

Talk and write

1. How I made the bricks

(Describe in a letter to a friend how you did these activities.)

2. I saw a house being built

(Tell your teacher: What did you see there? How many people were helping to build the house? Describe what they were doing, what materials and what tools or machines they were using.)

Ask and find out

1. How are building bricks made?
2. What materials are used in building a brick wall?

Figure it out

1. One cup of wet mud can make 7 bricks. How many bricks can be made from three cups of wet mud?

2. First guess the answer to this question. Then do it and see.

One cup of dry mud is mixed with one cup of water. How many cups will the mixture fill?

Ask a question

1. Ask questions about how houses are made. Think of how you will try to find the answers.

DID YOU KNOW?

- *When sand is pressed inside the earth for billions of years, it turns into very hard sandstone. The Red Fort in Delhi is made from sandstone.*

OUTLINE OF THE HOMI BHABHA CURRICULUM (Primary Science)

CLASS I and II

- Unit 1: Me and My Family
- Unit 2: Plants and Animals
- Unit 3: Our Food
- Unit 4: People and Places
- Unit 5: Time
- Unit 6: Things around us

CLASS III

- Unit 1: The Living World
 - Chapter 1. So many living things!
 - Chapter 2. Looking at plants
 - Chapter 3. Grow your own plant
 - Chapter 4. Looking at animals
- Unit 2: Our Body, Our Food
 - Chapter 5. Our Body
 - Chapter 6. Our Food
 - Chapter 7. Our Teeth
 - Chapter 8. Taking care of our body
- Unit 3: Measurement
 - Chapter 9. How many, how much?
 - Chapter 10. How long, how high, how far?
- Unit 4: Making Houses
 - Chapter 11. Houses of all kinds
 - Chapter 12. Make your own house

CLASS IV

- Unit 1: Sky and Weather
 - Chapter 1. Sun, wind, clouds and rain
 - Chapter 2. Day sky, night sky
- Unit 2: Air
 - Chapter 3. Fun with air!
 - Chapter 4. What's in the air?
- Unit 3: Water
 - Chapter 5. Fun with water!
 - Chapter 6. Water and life
 - Chapter 7. Water and us

Unit 4: Food

Chapter 8. Where our food comes from

Chapter 9. Food in our bodies

Chapter 10. What is thrown out

CLASS V

Unit 1: The Web of Life

Chapter 1. Living together

Chapter 2. Soil

Unit 2: Moving Things

Chapter 3. How things move

Chapter 4. Making a cart

Unit 3: Earth and its Neighbours

Chapter 5. Our earth

Chapter 6. Day and night

Chapter 7. Earth's neighbours

Unit 4: Our Bodies

Chapter 8. What is in our bodies

Chapter 9. Staying healthy

Unit 5: Materials

Chapter 10. The things we use

Note: The topics in Class I and II cover environmental studies. Classes III - V are primarily concerned with science, though keeping in view social and cultural perspectives. The topics begin with everyday experiences and immediate surroundings in Classes I - III, moving gradually outwards. Classes IV and V make increasing use of measurement concepts.