

# **My Science, Health and Physical Education**

A decorative graphic consisting of a thick vertical green bar and a horizontal green line that intersects it, forming a cross-like shape on the right side of the page.

**Grade 2**

Government of Nepal  
Ministry of Education  
**Curriculum Development Centre**

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## Preface

With the aim of making school level education more purposeful, behavioral and contextual, a process of continuous revision and reform is adopted by the Curriculum Development Centre (CDC). It is obvious that the curriculum is the core part of teaching-learning process, and the textbooks are major means of implementing school curricula at grassroots level. In accordance with the school curricula, the text books keep on changing with a view to addressing societal needs, demands of learners and modern technology in the field of teaching and learning, especially to foster knowledge, skills and positive attitudes in the students so that we can produce skilful, moral, obedient and globally competent citizens. To accomplish this purpose, an attempt is made to bring this book in the present form.

The contents of "My Science, Health and Physical Education" of Grade Two are integrated into one with the clear teaching instructions, pictures and activities. This book (Nepali version) was originally written by Mr. Mohan Gopal Nyauchhyo in 2050 BS. Likewise, in accordance with the revised curriculum of primary level, the portion of Science and Environment was written and revised by Mr. Rakesh Shrestha, Mr. Rabindra Chhetri, Mr. Tanka Lal Gaire, Ms. Nanu Dawadi and Mr. Balkrishna Chapagai. However, in case of the revision of Health and Physical Education, Dr. Ram Krishna Maharjan, Ms Geeta Karki, Mr. Rabindra Chhetri and Mr. Prakash Maharjan were involved. Art editing and layout concept of this book was done by Shreehari Shrestha by making it four colour. CDC would like to thank all those who contributed in developing this book.

Finally, a textbook is a vital tool of effective teaching learning process in the schools. However, both experienced teachers and inquisitive students can use a number of reference materials and various other resources available in the market to teach and learn a variety of subject matters respectively. Due to lack of different types of reference materials in all schools throughout the country, most of the teaching-learning activities highly depend on the textbooks. In this context, it is expected that the experienced teachers are capable enough to design additional activities as per the demands that usually emerge in the classroom. Moreover, an attempt is made to make this book child friendly by including several motivating teaching-learning activities. Despite our sincere efforts, there may be some mistakes and errors in terms of subject matter, language, presentation style and graphics. In this regard, we definitely expect the constructive suggestions from the teachers, students, parents, readers and other concerned stakeholders to improve the book in its future editions.

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# Science

## Grade 2



## Lesson 1

# Characteristics of Living Things

Look, talk about the picture and read.



Food



Reproduction



Movement



Sensitivity



Growth



There are some animals and plants in the above picture. They are living things. Living things eat food. They grow. They give birth to babies. They breathe. They also have sense. Non-living things do not show characteristics of living things. Stone, soil, table, etc. are non- living things.

## Activity

You either have animals at home or you have seen them. What types of characteristics do they show? Observe and write down.

## Exercise

### 1. Fill in the blanks choosing the words given below:

grass, leg, fire, mother

- a) Dogs move with the help of \_\_\_\_\_.
- b) Cows eat \_\_\_\_\_.
- c) Chicks grow into \_\_\_\_\_.
- d) Burns us when we touch \_\_\_\_\_.

### 2. Tick (✓) the correct and cross (×) incorrect statements.

- a) Babies of cow are called calves. ☐
- b) Hens lay eggs and hatch babies. ☐
- c) A calf grows into a buffalo. ☐
- d) Animals do not have sense. ☐

### 3. Collect the picture of any five animals and paste them in your exercise book.

#### Teaching Instructions

Besides the above examples, present some more relevant examples and clarify students about them. Make students cut pictures from old books or newspapers and paste them in their exercise book. Make students practise the activities relating to respiration.



## Lesson 2

# Some Living Things

Look, identify and read.



**Tree**



**frog**



**housefly**



**pigeon**



**fish**

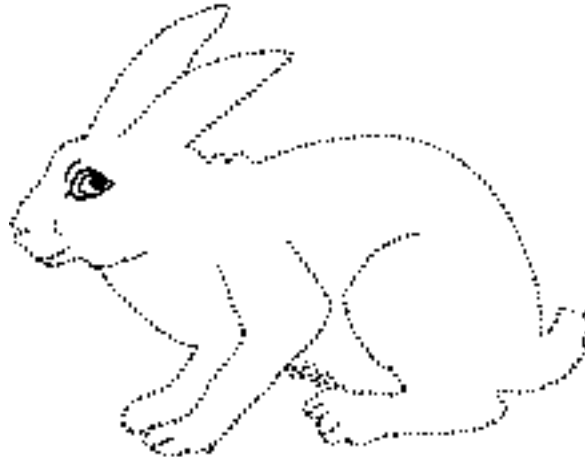


**cow**

Some living things are given in the above picture. Besides, there are even more living things in our surroundings. Of these, some live on land. Some living things live in water. Some living things fly in air. Some living things can live both on land and in water. Where do living things given in the above picture live. Can you say?

## Exercise

1. Complete the following picture by joining the dots. What is this animal ? Write its name.



2. Write the name of five living things found around your house.
3. Write the name of living things found in your surroundings in the following table appropriately.

S.No.	Plants	Flying Animals	Animals found on land	Animals found in water
1.				
2.				
3.				
4.				

4. Sketch an animal which you like most. Fill up with the suitable colour.

---

### Teaching instructions

Make students observe and discuss living things that are not given in the examples. Show one or two pictures of living things and ask them to sketch and fill up with the suitable colour.

### Lesson 3

## Animal's Habitat

Look, identify and read



Human beings live at homes. Birds live in nest. Fishes live in water. Cows are kept in shed. Earthworms live in soil. Different animals have different homes.

### Teaching instructions

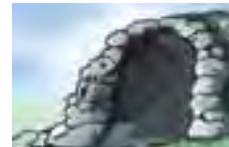
With the observation of habitats of different animals, give a simple introduction.

## Activity

Animals appear around our houses, fields and schools. Which animals live where? Find five animals and write down.

## Exercise

1. Write the name of any three animals' homes which you like most.
2. Match the following animals with their homes.



3. Tick (✓) for true and cross (×) for false statements.

(a) Homes of birds are called kennel.



(b) Cow lives in shed.



(c) Tiger is raised in homes.



(d) Rat lives in hole.



(e) Bear lives in shed.



## Lesson 4

# Domestic and Wild Animals

Look, identify and read



There are different types of animals around us. Some animals are kept in our house. Some animals live in forest. People do not tame them. People do not keep animals like tiger, bear, stag, rhinoceros in their house. Animals that live in our house are called domestic animals. Animals which live in the forest are called wild animals.

### Teaching instructions

Make students discuss other animals if they have seen except those given in the above picture. Ask them to write down the names of animals on whiteboard. Also, make students differentiate animals as domestic and wild.

## Exercise

1. Write the names of three animals which you have seen around your house and school.
2. Which of the following are domestic and which are wild animals ? Write in the following table:

**Tiger, Dog, Elephant, Monkey, Horse, Goat, Buffalo, Ox, Fox, boar**

Domestic animals	Wild animals
1. Ox	1. Fox
2. ....	2. ....
3. ....	3. ....
4. ....	4. ....

3. Fill in the blanks with suitable words.
  - a. Cow is a ..... animal.
  - b. Fish is a ..... animal (organism).
  - c. Bear is a ..... animal.
  - d. Lion is a ..... animal.
4. Sketch a domestic and a wild animal which you like most and fill up with the suitable colour.

---

### Teaching instructions

Make students practice the dotted figures of different animals.

## Lesson 5

# Food and Feeding Habits of Animals

Look at the picture and discuss.



All animals eat food. Different animals have different food and feeding habits. Animals like cow, sheep, goat, horse etc. eat grass, hay ( straw) and husk. They eat food by chewing. A dog eats by licking. Duck, hen , bird , frog, snake and lizard swallow food. The blood of other animals is the food of worm, lice and tick. They suck the blood. Have you seen a bee sucking flower's juice (nectar of the flower).



### Activity

- 1 Fill in the following table with appropriate food and feeding habits of animals:

Name of animals	Food	Feeding habit
Cow	Grass	By chewing
Dog	.....	.....
Pigeon	.....	.....
Man	.....	.....
Snake	.....	.....

2. Besides above animals, ask other people to find out the name, food and feeding habits of any five animals.

### Exercise

1. Match the following names of animals with their feeding habits:

- |              |            |
|--------------|------------|
| (a) Elephant | swallowing |
| (b) Cat      | chewing    |
| (c) Fish     | sucking    |
|              | licking    |

2. How do the following animals eat food ? Write in full sentence.

Cow eats grass \_\_\_\_\_.

Pigeon eats grains \_\_\_\_\_.

Snake eats frog \_\_\_\_\_.

### Teaching instructions

Clarify about food and feeding habits of animals at local level through observation and discussion. Make students discuss about food and feeding habits of other animals that they have seen.



## Lesson 6

# Movement of Animals



All animals given in the above picture go from one place to another. This change of place is called movement. Do all animals have the same kind of movement? They have different movement. For example, horses run, cows walk, rabbits jump and frogs swim in water and walk on land by jumping. Birds fly in air with the help of wings. Fishes move around in water by swimming. Snake crawls on land.

### **Teaching instructions**

*Make students discuss by showing a picture or a poster of different movement of different animals in the class. If possible, make students observe the movement of different animals that they find in their surroundings.*

### Activity

Observe animals that you find in your surroundings and tell about any five ways of movement of these animals.

### Exercise

#### 1. Match the given animals with their movement

Animals	Movement
a) Lizard ( VI)	i) By swimming
b) Dog ( )	ii) By flying
c) Rabbit ( )	iii) By running
d) Fish ( )	iv) By jumping
e) Crow ( )	v) By walking
	vi) By crawling

#### 2. Write any two names of animals that have the following movement:

- a. Walking .....
- b. Jumping .....
- c. Swimming .....
- d. Flying .....

---

#### Teaching instructions

Tell your students about the type of movement of an animal mentioned in exercise 2. For example, a duck shows movement by walking.

## Lesson 7

# Types of Plants



Look at the above pictures. There are different types of plants. Plants can be divided into three groups like small, medium and big. Small plants are called herbs. These plants are tender and weak. Marigold, pudina, babari, coriander and other types of small grass etc. are herbs. Medium size plants are called shrubs. These plants are a little bigger and stronger. Hibiscus, rose, tea plant etc. are shrubs. Big plants are called trees. Plants with strong trunks and big in size are called trees. Peepal, mango, pine etc. are the examples of trees.

### Teaching instructions

If possible, make students observe different types of plants available in their locality. Now ask them to group these plants according to their characteristics.

### Activity

Put the following plants under an appropriate group.

Radish, Chick pea(gram), Sal, Peepal,  
Rose, hibiscus, Onion, Coriander

Herbs	Shrubs	Trees
.....	.....	.....

### Exercise

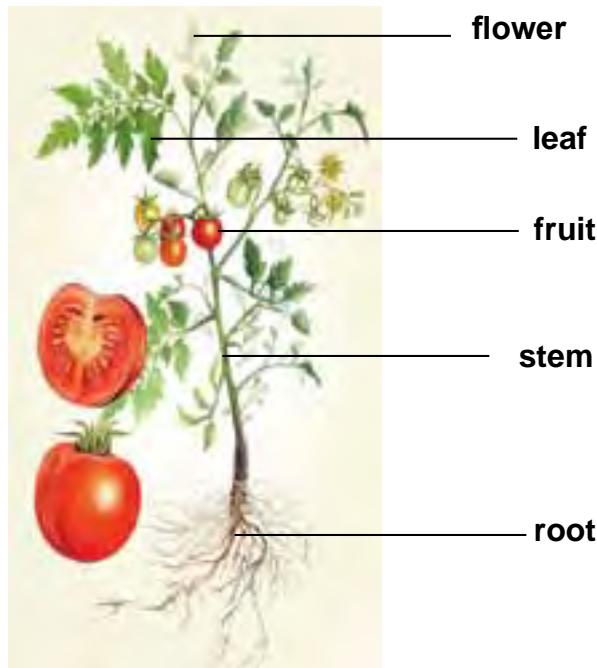
1. Tick (✓) for right and cross (×) for wrong statements.
  - (a) Coriander comes under herbs group.
  - (b) A little bigger and stronger plants are called shrubs.
  - (c) Sisau plant comes under tree group.
  - (d) Tea plant also comes under herbs group.
2. Write the name of any two herbs, shrubs and trees that you find in your locality.
3. Identify herbs, shrubs and trees looking at the following pictures:



## Lesson 8

# Parts of Plants

A plant has different parts. Root, stem, leaf, flower and fruit are main parts of the plant.



**Root-** The part of the plant lying under the ground is called root. Root fixes the plant into the soil.

**Stem-** The part of the plant lying above the ground is called shoot/ stem. The stem supports the branches, leaves, flowers and fruits.

**Leaf-** The flat, broad and green parts attached to the stem and branches of the plant are called leaves.

**Flower and fruit –** Flower is a colourful part of the plant. Fruits develop from a flower.

### Activity

Sketch a plant that you have seen and name its root, stem, leaf, fruit and flower.

### Exercise

**1. Match the following by drawing lines :**

- |    |        |                              |
|----|--------|------------------------------|
| a. | Root   | parts with different colours |
| b. | Stem   | parts under the soil         |
| c. | Leaf   | parts above the soil         |
| d. | Fruit  | green part                   |
| e. | Flower | part containing seed         |

**2. Write the name of the parts of the plants given in the following picture:**



### Teaching instructions

Help students in doing exercises 1 and 2 and encourage them whether all of them are doing or not. For this, observe the students involved in doing exercises. Make students understand that plants have different parts with different functions as human beings. Make students observe the plants with adventitious root in the surroundings.



## Lesson 9

# Food from Plants and Animal



These are the pictures of foods. Do you know, where we get these foods from ? We get these food mainly from plants and animals. Foods like milk, eggs, fishes, meat, honey etc. are obtained from animals. Grains, seeds, lentils, vegetable, spinach, fruits etc. are obtained from plants. A major benefit that we obtain from plants and animals is food.

### Activity

what are the foods made of and where are they obtained from?  
Fill in the following table:

The name of food	made of ?	Obtained from what ?
1. Bread	Wheat	Plant
2. Cheese	Curd/milk	Animal
3. ....	.....	.....
4. ....	.....	.....
5. ....	.....	.....
6. ....	.....	.....

### Exercise

1. Which of the following foods are obtained from plants and animals? Make a table and write down them separately.

Cauliflower	Soyabean	Curd	Radish
Paddy	Edible oil	Butter	Ghee
Potato	Buckwheat	Honey	Meat
Fish	Egg	Lentils	Papaya
Pear	Orange	Apple	Maize

2. Write down any two advantages that human beings get from animals and plants.



## Lesson 10

# Our Environment

Look, read and discuss.



picture no 1



picture no 2

Observe both pictures given above. What type of environment is shown in first and second pictures? Discuss. What are the causes that make our environment dirty? Tell according to the picture. What should we do to keep our environment clean ? Clean environment benefits us and dirty environment harms us.

### Activity

Observe your environment and make a list of waste things and write the causes of dirty environment.

### Exercise

#### 1. Answer the following Question

- a. Where should we throw wastage ?
- b. What happens when toilet and urine is disposed near the sources of water (river, tap, well etc.)?
- c. What should you do to keep your house clean ?
- d. What should we do to keep the classroom clean ?

#### 2. Tick (✓) for right and cross (×) for wrong statements in the following boxes.

- a. We should throw wastes/garbage in courtyard.
- b. Wastes and garbage contain germs.
- c. Environment gets polluted due to the throwing of wastes/garbage here and there.
- d. Garbage of our house can be thrown on the road.

---

#### Teaching instructions

Bring students to a dirty place in the surroundings of house and school to observe and find out the causes of it.

## Lesson 11

# Objects of Different Sizes

### Round objects



### Flat objects



### Circular objects



Objects are of different sizes. Some objects are round, some are circular, some are rectangular and some are cylindrical etc. Football and marble are round. Bangles and tyres are circular. The surface of a page of an exercise book is flat. Some objects do not have fixed shape. They are irregular in shape. Even the objects of the same shape are bigger and smaller.

## Exercise

### 1. Fill in the blanks with the suitable words given in the brackets.

- a. Marble and football are ..... ( round, circular)
- b. Nose-ring ( mundra) is ..... than the bangle. ( bigger, smaller).
- c. .... is of flat shape. (Book, Wheel of motor)
- d. The rim of bicycle is ..... ( circular, round)

### 2. Answer the following questions.

- a. What kind of shape is called irregular shape ?
- b. What are circular objects in your house ? Write down any two names.
- c. Write the name of any two round objects that you have seen.
- d. How is the shape of pumpkin ?

### 3. Sketch the pictures of the following objects in your exercise book and write down their names.

a. round

b. flat

c. circular

---

#### Teaching instructions

Make students collect the objects of different sizes by dividing them into groups. What kinds of shapes do these objects have ? Make them discuss in the class.

## Lesson 12

# Objects with Different Colour, Taste and Smell



Different objects are found in our surroundings. The taste of unripe mango and unripe guava is different though they have the same green colour. Mango is sour. Guava is bitter. The flowering plants give sweet smell. Wastes and garbages give bad smell. We can differentiate objects that we find in our surroundings by colour, taste and smell. We use different organs of our body to know qualities of these objects.

### Activity

Write the names of foods that you have eaten and seen. Can you differentiate the colour of all these objects? Also, write the taste and smell of these objects. What sense organs should we use to know colour, taste and smell of these objects? Discuss with your friends and ask your teacher.

### Exercise

#### 1. Match the following :

- |           |               |
|-----------|---------------|
| a) Nose   | sound         |
| b) Eyes   | taste         |
| c) Skin   | smell (odour) |
| d) Tongue | colour        |
|           | cold/hot      |

#### 2. Fill in the blanks.

- We should use ..... to know the colour of objects.
- We should use ..... to know the smell of objects.
- We should use ..... to know the taste of objects.

---

#### Teaching instructions

Let students do the above exercise by dividing them into groups.

## Lesson 13

# Hard and Soft Objects



Do you know these objects ? We use some of them at our houses. We often feel hard while touching unripe fruit. We feel soft when we touch ripe mango. Different objects that we find in our surroundings are hard or soft according to their structure. Some objects are hard. Some objects are soft. We should touch the objects to know whether they are soft or hard. Even we can guess to know whether they are hard or soft objects. For this, we look at them. But, We should touch objects to differentiate them exactly.

### Teaching instructions

Demonstrate the pictures presented in the lesson and other pictures of the objects in the class. Now tell them about hard and soft objects and the use of different sense organs to know about them.



### Activity

1. Bring dry clay balls from nearby place. Make your friends touch these balls. Are they hard or soft ? Ask them.
2. Put a little water and dough. How is it now ? Is it hard or soft ? Touch the dough.
3. Dry these balls in the sun for a few days and touch them again. Do you find any change in its softness? Why has it happened ? Discuss with your friends and tell your teacher.

### Exercise

**1. Tick (✓) for right and cross (×) for wrong statements.**

- a) Dry soil is harder than the wet soil.
- b) Ripe fruits are softer than the unripe fruits.
- c) We can know hot and cold objects just looking at them.
- d) We can know hot and cold objects while touching with the skin.

**2. Answer the following questions.**

- a. Write the names of any five hard and soft objects that you find in your house.
- b. Group the following objects into soft and hard objects  
Unripe mango, tomato, cotton, flower, ripe banana, wood.



## Lesson 14

# Sources of Heat and Light



It becomes bright when the sun rises. The sun makes the moon brighter. It is sometimes warm and sometimes hot during the sunshine. It gradually becomes dark when the sun sets. Somewhere we light a lamp and somewhere we light a lantern to bring light to dark places. In towns and nearby villages, people use electricity for light. People in the villages sit nearby the fire to warm themselves. We can get heat when we burn firewood or dry cowdung cake. In the town people use electric heater to warm themselves. We can also get heat from electric heater. We can get heat by using kerosene. There are many sources of heat and light. The sun is the major natural source of heat and light. Besides the sun, there are also other sources of heat. Burning firewood, burning cowdung cake and electric heater are also sources of heat. Lamp, lantern and electric bulb are other sources of light.

## Activity

What are the things that give heat and light in your house ?  
Make a list of these things.

## Exercise

### 1. Answer the following questions in full sentence.

- What is the main source of heat and light ?
- Write down any three sources of heat.
- Write down any three sources of light.

### 2. Match the following by joining with a line.

- |                                   |   |
|-----------------------------------|---|
| a. Lantern/ Lamp                  | source of heat in village                       |
| b. Fire burning stove<br>(Chulho) | source of light from<br>electricity             |
| c. Bulb                           | main source of heat and light.                  |
| d. Cowdung cake                   | source of light from kerosene<br>Source of heat |

### 3. Draw a picture of one source of light which you like most and colour it.

---

#### Teaching instructions

Make students study the picture. Clarify the sources of heat and light in accordance with the picture and students' experience.

## Lesson 15

# Uses of Heat and Light



We do different types of work from morning to evening. Even in the absence of sunlight, we find people who light a lamp to do their work. In winter season, we get warm by burning fire, by sitting in the sunshine and by using electric heater. Light is essential for plants and animals. Why do the seedlings of wheat or oat kept for Dashain festival become yellow? They become yellow because they do not get light. What would happen in the absence of light and heat? We need heat to cook food, to dry clothes, to get warmth and to dry grains. Light helps us in doing different types of works, It helps us to see things. Plants grow due to heat and light. No living things can survive without plants.

### Activity

Take the seeds of bean. Put soil in two vessels. Pour a little water to make it wet and keep the seeds in the soil. Keep one vessel outside the house and one vessel inside the house in a dark place. After a few days, observe both the vessels. What change did you see ? Discuss with your teacher.

### Exercise

#### 1. Fill in the blanks with the suitable words.

- a. Food can be cooked with the help of .....
- b. We can see anything with the help of .....
- c. Misuse of ..... and ..... may harm us.

#### 2. Answer the following questions.

- a. How do we use heat ? Write any three functions.
- b. What type of work can be done with the help of light ? Write any three functions.

---

#### Teaching instructions

Let students discuss the picture and tell how they have been using heat and light at their home. Similarly, make them discuss the disadvantages that result from unnecessary use of the sources of heat and light. Ask them to compare the picture and the context of their house.

## Lesson 16

# Sunny Day

Look at the following pictures. Which of the following pictures is of sunny and cloudy day ?



We see the sun when there is no cloud in the sky. Bright light comes from the sun. This day is called sunny day. The place where sunlight falls it becomes bright. We also get heat from sunlight. We feel warm on a sunny day. We make our body warm in the sun in winter. We dry grains, wet clothes and different things in the sunlight. When the light falls on objects, they form shadow. When do we feel warm- in day or at night ? What would be its reason? Land gets heated due to sunlight at noon. Air around us also gets heated. Then we feel warm.

### Activity

Take two steel plates of the same size. Keep one plate in the sun ( sunlight) and the other plate in the shaded place. After 15 minutes, touch both the plates. What differences do you find ? What is the reason of this ? Discuss with friends and tell.

### Exercise

#### 1. Fill up the blanks choosing the right word.

- a. In day time, we see ..... on the sky. (star, sun, moon)
- b. Sunlight ( sunshine) is the bright light that comes from ..... to the earth. (electric bulb, moon, sun)
- c. Land and air get heated on ..... ( rainy day, cloudy day, sunny day)

#### 2. Give short answers.

- a. How is the weather on a sunny day ?
- b. Why do we feel cold on a cloudy day ?
- c. Why do we like sitting in the sun in winter ?



## Lesson 17

# Shadow



When an object blocks the light, the light does not fall on that part and a shadow is formed. The shadow of a big object is big. The shadow of a small object is small. Stand in sunlight and look at your shadow and compare your shadow with the shadow of other objects. Does the shadow form only in sunlight ? Flash a torchlight or light a candle or a lamp in a dark room and block the light from your hand and look. Does the shadow of your hand form or not? When light coming from a source is blocked, a black shape is formed. This is called shadow.

## Activity

1. Which side of an object does the shadow form ?

Take a candle. Light the candle and fix it on a table or on the floor or the ground in a less bright room. Place an object ( a book or a brick) a little away from the table. Where does the shadow of this object form ? Look. Change the position of the object at different places around the candle. Where does the shadow form everytime? Look. Does the shadow form on the opposite side of the light everytime ?

2. Does the shadow of an object remain the same throughout the day or does it change?

Take a long stick and fix it at a place where there is sunshine throughout the whole day. What is the size of the shadow at different time (say, at 10:00 O'clock, 12:00 O'clock and 2: 00 O'clock) of the day ? Mark the length of the shadow. Does the length of the shadow remain the same throughout the whole day ?

## Exercise

1. Tick (✓) for true and cross (×) for false statements.

- a. Light is not necessary to form a shadow of an object.
- b. If an object blocks the sunlight or light, a shadow of that object will form.
- c. At 7 am in the morning, the shadow of an object in sunlight forms in the west of the object.



## Lesson 18

# Our Earth



There is land and water on the surface of our earth. Soil and stones are found on land. Look around you! Are there plants on land? Your house, school and road are made on land. The land surface is not the same everywhere. Somewhere it is flat. This

flat part of the land is called plain. Somewhere the land is up. This upland is called hill.

### Activity

Copy the picture given in this lesson in your exercise copy and colour it.

### Exercise

#### 1. Fill in the blanks with appropriate words.

- a. .... and .... are on the surface of the earth.
- b. Soil and .... are found on the land.
- c. The ..... of land is not the same everywhere.
- d. The flat part of the land is called .....
- (e) The upland is called .....

#### 2. Answer the following questions.

- a. How is the surface of the land around your school ?
- b. How is the surface of the land around your house ?

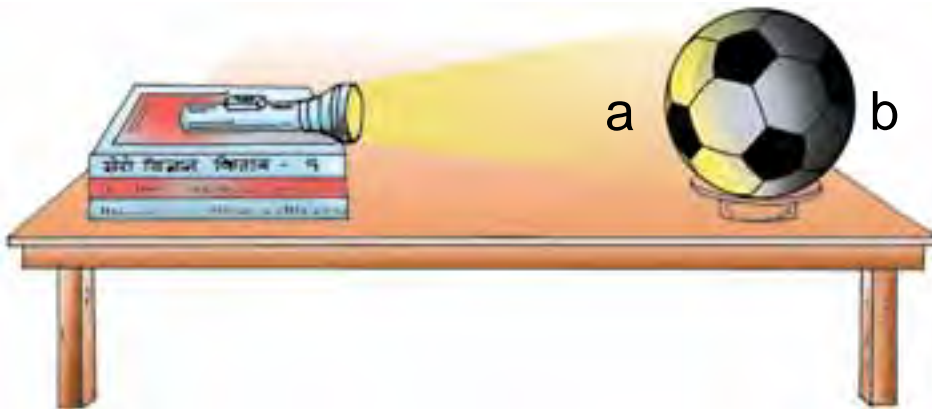
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#### Teaching instructions

Take your students around the school to observe the land surface. Give the concept that soil and rocks together make up the land. Take students to observe the plain and hill if such land is seen from your place, and clarify the concept. Also, you can demonstrate different pictures to clarify the concept of hills and plains. Similarly, help students in clarifying the concept of the fact that there is water on the surface of the Earth with the examples of pond, stream, river etc. of your locality.

## Lesson 19

# Day and Night



How do you differentiate day and night when you are saying “You are studying now”? Discuss with your friends and tell. Let's think that night comes after day and day comes after night. How does this happen ? Let's do this activity first.

Write (a) and (b) on the front part and back part of the ball as shown in the figure. Take a football or a volleyball. Make a ring of thick paper and keep it at one corner of the table. Fix the ball on the ring. Take a torchlight. Put this torchlight at other corner of the table. Make a pile of books and put the torch on it. Now, make the room dark and flash on the torchlight. Does the light fall on all parts of the ball? Tell one of your classmates to rotate the ball slowly in anticlockwise direction. When (a) part of the ball is bright then how is the part (b) ? Tell everyone to look at it. What did you see ? The part of the ball towards the torchlight is bright and the part of the ball away from the torchlight is dark.

### Activity

Suppose the torchlight as the sun and the ball as the earth in the above activity. Now, how do the day and night happen, discuss among friends and say.

### Exercise

1. Put the tick (✓) mark for true statement and a cross (×) for a false statement.
  - a. The part of the earth towards the sun has the day.
  - b. The part of the earth away from the sun has midnight.
  - c. The earth has day due to moonlight.
  - d. The one part of the earth has always day while the other part of the earth has always night.
  - e. Day and night is caused respectively due to the rotation of the earth.

---

### Teaching Hints

The earth is rotating at its own axis. It completes one rotation in about 24 hours. During this rotation, light falls on the front part of the earth and there is day. The other part (right away from the sun) does not get the light and there is night. Make this concept clear to the students on the basis of lesson and the activity.

## Lesson 20

# Sunlight has Different Colours

Look at a place where there is sunlight. Is sunlight colourfull? Take a clear plastic or a coloured glass bottle. Put water in it upto the neck and close it with cover (lid). Now, keep the bottle in the sunlight. Is sunlight seen as passing through the water ? Put a white sheet of paper on the other side of the bottle where there is sunlight and observe. Do you see any colour in the sunlight ? What are these colours ? Sunlight passes through the clear water. When sunlight passes through water, it splits into different colours.

### Activity

1. Look at the sky when there is rainbow. Sketch the rainbow in your exercise book. How many colours do you see in the rainbow ? Write down the names of the colours in order.
2. Take water in a plate or a dish. Put a few drops of edible oil in water. Now, keep the plate in sunlight. Go a little away from the plate and look at it. What colour do you see ? Write down in your exercise book.

### Exercise

1. Tick (✓) for true and cross (x) for false statements.
  - a. We see the colourful sunlight.
  - b. Light passing through water is colourful.
  - c. Rainbow seen in the sky is colourful.

### Teaching instructions

Usually rainbow can be seen in the sky during rainy season. Let the students observe the rainbow in the sky and help them to find out different colours and their orders in the rainbow.

# Health and Physical Education

## Lesson 1

### Health Education

# Keeping Our Body Clean



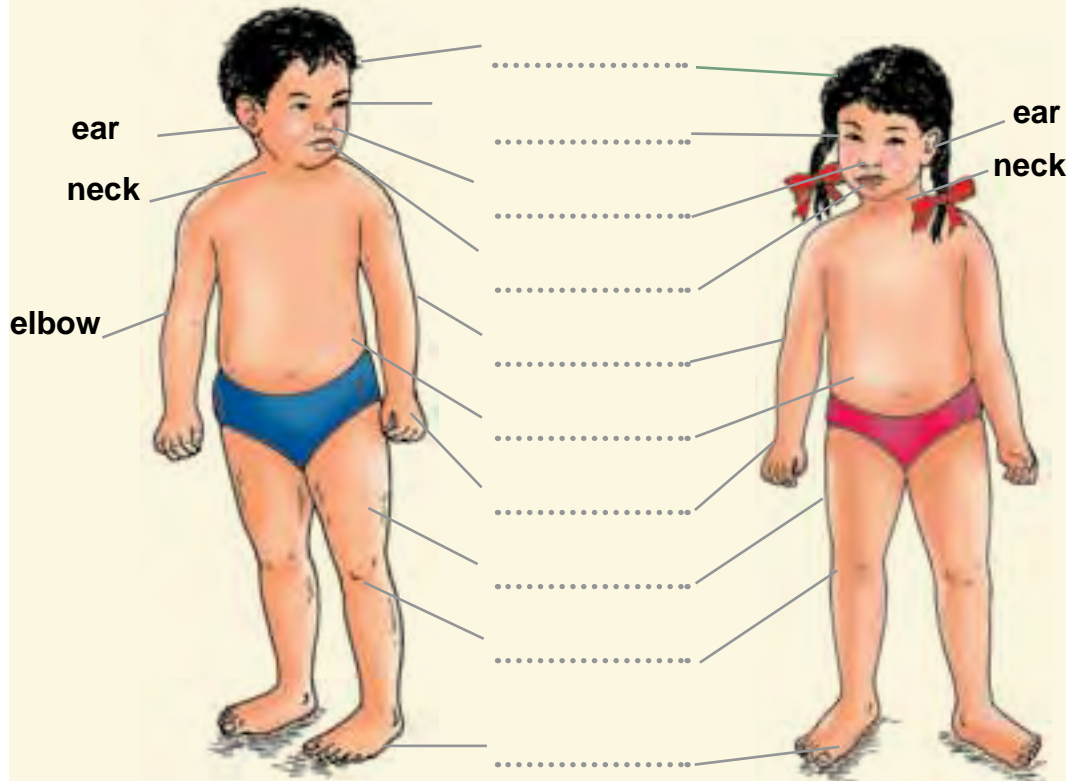
Our body has different parts. We should keep these parts clean. We need different things to clean our body. We should take a bath regularly. We should wipe off our body with a dry towel. We should comb our hair with clean comb. We should cut nails with a nail cutter. We should never bite nails. We should brush our teeth after meal. While brushing, we should move the brush up and down and inside the mouth. We should wash our face, eyes and nose with clean water. While taking bath or washing hands and mouth we should rinse these parts with clean water to remove the soap completely.

### Teaching instructions

Encourage the students to use local and other useful materials for body cleaning. Help them to make a list of body parts. Demonstrate the ways of cleaning nose, mouth, hair, teeth etc. Observe habits of the students and if any wrong habits (that are harmful to health) are found, help them to correct such habits.

## Activity

1. Say the name of the parts of the given picture and write down them in your exercise book.

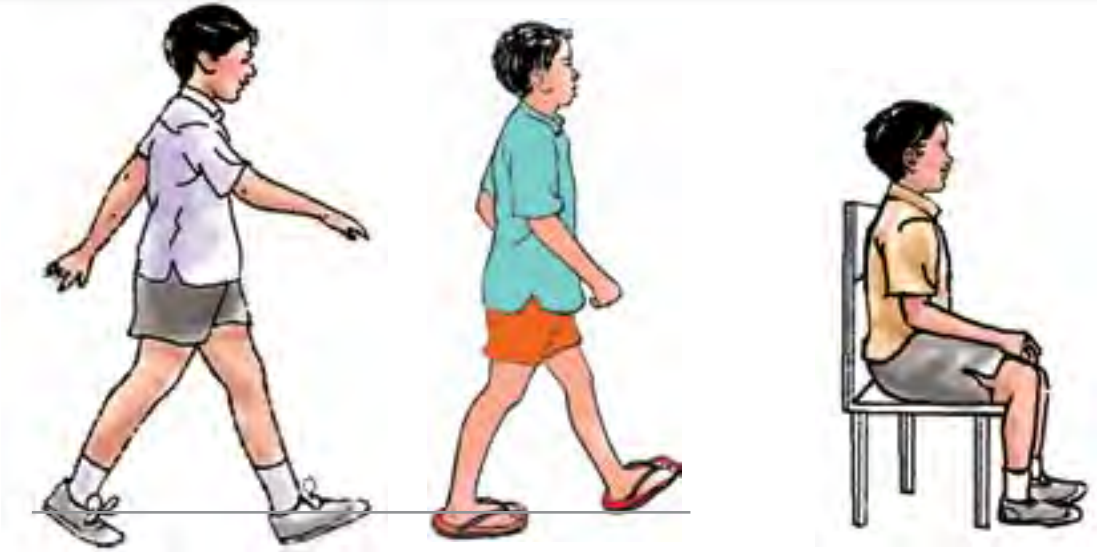


2. How are the given parts in the above pictures cleaned ? Can you act out how you clean your ear, neck or elbow ?
3. Are these statements true ? Ask your friend.
  - a. We should clean our nose with our sleeves.
  - b. Nose should be scraped with fingers.
  - c. It is easier to clean short hair.
  - d. While brushing our teeth we should brush with a tooth brush or small stick brush (Datiwan) by moving up and down.



## Lesson 2

# Good Habits



Right walking

Wrong walking

Right sitting

To keep our body fit we should move the parts of our body in right way. Keep your back straight while walking. Keep your heel and sole straight while walking and we should walk with light and normal hand movement. While sleeping we should sleep on back and keep legs straight. It is not good to sleep on chest. We should not use very thick pillow while sleeping. We should sleep and get up at right time. This makes our body fit and healthy.

### Teaching instructions

Observe the habits like walking, sitting, and sleeping of the students. Demonstrate the right way of walking, sitting posture and sleeping posture or correct their habits. Practise these postures several times.

### Activity

1. Make all students do activities like walking, sitting, standing, sleeping according to their own habits at least one time. Also, make them observe the activity of other students as well.
2. Demonstrate the right way of walking, sitting, standing, sleeping etc. and practice turn-wise.
- 3 Choose which one is right and which one is wrong.
  - a. While walking we should walk by jumping.
  - b. While walking we should walk slowly by stepping straight.
  - c. While standing we should stand by bending waist.
  - d. While standing we should stand by keeping back straight.
  - e. It is a good habit to read by sleeping ( laying down).
  - f. It is bad habit to write by bending body.
  - g. We should write and read by keeping our body straight.
  - h. While sleeping we should sleep on chest.
  - i. While sleeping we should sleep on our back with legs straight.

### Health message

Let's wash our hands with soap or ash before meal. Let's brush teeth after meal. Let's wash mouth with water after eating sweet food. Let's take bath regularly. Let's wash our face in the morning and evening with water.

### Lesson 3

## Cleaning of House



We should always be neat and clean. We should always keep our reading and sleeping rooms clean. We should clean the spider's web on the wall and ceiling with a long stick. We should remove the dust and dirt stuck to windows and doors with useless clothes.

We should brush our courtyard daily. We should put dust, wastes and garbage in a basket. We should keep papers, pieces or pouches of plastics and solid waste objects in a separate basket. Fertilizers can be made from decomposed wastes by putting them into ditches. Plastics and solid objects can be used again. We should wear slippers while going to toilet. We should put water in the toilet after we use it. We should wash our hands with soap or ash after washing toilet. We should clean water tap after washing face, mouth, hand and other work. There should be drainage system for outlet of water of tap and kitchen.

## Activity

Look at the following picture and answer to the questions:



- a. What do you see in the picture?
- b. Why is the person covering his nose?
- c. Why did the person sleep ?
- d. What is mixed in the river?

## Health message

Let's throw wastes in a fixed ditch. Let's keep our house and school clean. Let's keep clean around the sources of water. Let's use toilet for excretion.

## Lesson 4

# Keeping School Clean

Our school is clean. We sweep our classroom daily with broom or sweeping brush. We pick up dirty wastes and piece of papers scattered in the playing ground and around our school. We collect dirty waste materials in the basket. We put these wastes in the ditch when it is full and cover the ditch with soil.



There is a toilet in our school. We always keep our toilet clean. Flowers and plants are planted inside the compound of the school. Water coming from the tap flows to place where plants are planted. We weed the garden together.

### Teaching Hints

Divide the students in groups according to their numbers and assign them different works. Involve students in the activities like cleaning of classroom, cleaning of blackboard etc. Arrange the materials needed for cleaning. Play a role of a motivator to develop a habit of working and helping to others.



## Activity

1. What are there in the given picture ? Say and write. What purposes are they used for ? Write down.



2. Look carefully at the following picture. What did you see in both the pictures ? Say and write down.



3. Did you like the above pictures or not ? If you didn't like the pictures, say and write why didn't you like them ?

## Lesson 5

# My Food



We eat different kinds of food. The nutrients in our food help in growing, giving energy and protecting our body. Rice, wheat, oat, maize, millet, phapar and potatoes are the main foods. Cauliflower, bean, cabbage, spinach, pumpkin, gourd, radish, sisno, bethe, karkalo etc. are vegetables. We should eat fruits like mango, apple, orange, guava, aru, banana, peach, arubakhada, papaya, lichi etc. Fishes, meat, eggs, milk, curd, mahi, ghee, honey, etc. are also essential foods. We should drink milk only after boiling properly. We should cook the vegetables after cleaning with clean water. Food should be clean and fresh. We should eat food containing spinaches, fruits, grains, meat, fishes and beans.

### Teaching instructions

Make the students say the names of other locally available food items. Give emphasis on eating clean and fresh food. Encourage them to eat body protective and nutritious food. Administer aptitude tests by making a checklist of other alternative sentences and encourage students to eat nutritious food.

### Activity

1. Make a list of foods which you eat at home. Discuss with your friends and divide the food items into different groups such as grains, beans-group, leafy vegetables, fruits, meat-fish group, milk, curd etc.
2. Write the name of the food which you eat at special occasion or festival time and tell in the class.
3. If the following sentences are incorrect, correct them and copy in your exercise book.
  - a. We should eat fruits after washing with clean water.
  - b. We should eat radish immediately after uprooting.
  - c. We can drink any type of water when we are thirsty.
  - d. We can eat stale food.
  - e. We can eat uncovered and house flies infested food.

### Health message

Let's eat clean and fresh food. Let's eat enough green vegetables, yellow fruits and beans.



## Lesson 6

# Drinking Water



We all need water. We cannot survive without water. Drinking water should be safe. Germs free clean water is called safe water. We should keep water in a clean vessel and cover it. Water should be boiled or filtered before drinking. Our stomach and skin become healthy by drinking safe water. Therefore, we should always drink germs free clean water.

### Teaching instructions

Tell students about the characteristics of clean water and give emphasis on drinking clean water. Discuss about the methods of keeping water safe. Demonstrate an exemplary initiative at school by keeping safe water.

### Activity

1. Take a clean glass. Cover its mouth with a piece of white cloth. Take water which you use for drinking in another glass. Now, pour water slowly from above the cloth. Water collects in lower glass after filtration. Now, observe whether there are particles of dust or sand present in the cloth or not.
2. We get water from tap, well, pond, stream, stone-spouts etc. Where do you fetch drinking water from ? Discuss and say.
3. What has been done in your house and school for cleaning water ? Ask and write.
4. Why should we drink water ? Discuss with your friend and tell your teacher.
5. What would happen if you drank dirty or polluted water ? Discuss with your friends and write.

## Lesson 7

# Let's not be Sick



Sometimes we do not like eating, playing, reading, walking and doing any work. This condition of body is called not feeling well. When we are sick we do not feel well. If we are not careful we may suffer from serious disease. Suffering from worms, dysentery, itching, measles, etc. are communicable diseases. If disease transmits from one sick person to another healthy person, such disease is called communicable disease. Some diseases may not transmit from one person to another. Such disease is called non-communicable disease. Communicable disease transmits from one person to another person through toilet(stool), urine, spit, snot, etc. Therefore, we should cover our mouth with handkerchief while coughing or sneezing. We should get our health checked up at health post and get treatment when not feeling well. This prevents us from serious diseases.

## Activity

1. Write the name of diseases in your exercise book you have heard. Discuss with your friends and separate them into communicable and non-communicable diseases.

Name of disease	Communicable	Non-communicable
-----------------	--------------	------------------

a.....	.....	.....
--------	-------	-------

b.....	.....	.....
--------	-------	-------

2. What do you do when you do not feel well at your home or school? Show by acting.
3. Ask the answers of the following questions to your friends.
  - a) What is communicable disease?
  - b) Say the name of any five communicable diseases.
  - c) Say the name of any three non-communicable diseases.
  - d) How do diseases like scabies, dysentery and measles transmit?
  - e) Say the preventive ways of worm- suffering and Goitre.

## Teaching Instructions

Make the students see the pictures. Make them say the conditions of transmission of diseases, name communicable and non-communicable diseases. Make a table of the names of main diseases on the blackboard, which the students are unable to say. Discuss about the mentioned diseases in brief. While doing the activity concerning the condition of sick people, make them say on write and make a table on the blackboard.

## Health message

While suffering from dysentery, let us drink enough water, eat enough liquid food. Let us feed the same to the sufferer. Let us eat raw vegetables and fruits only after cleaning them with clean water.

## Lesson 8

# Let's Avoid Accidents

We live in the house. House gives us security. Many accidents may occur even in our house if we are not careful. Sometimes we may lose our life. We go to school daily. We play and eat with our friends. Sometimes accidents may occur due to carelessness and wrong behavior of oneself or friends.



### Teaching instructions

Make the students observe the above picture. Discuss about the cause of accidents and preventive measures to avoid such accidents. Encourage students to protect themselves and others as well from such accidents.

## Activity

1. Look at the following given pictures and say what type of accidents can happen at school and outside school.



2. Make your friend fill up the gaps choosing appropriate words.

sharp, railing, side, steps, treatment, play

- a. There is a ..... of wound at hospital.
- b. We should not..... in the middle of the road.
- c. While walking we should walk on the..... of the road.
- d. We should not play with ..... objects.
- e. While climbing stairs we should walk one by one on .....
- f. We should keep..... in the corridor and stairs of our house.

---

### Teaching instructions

Discuss about the fact that there are some things relating to security and unsecurity. Ask them about what we do not have to do for security and what we have to avoid for security. Similarly, discuss about similar accidents. Do more activities like matching, quiz as in the activity No. 2.



## Lesson 9

# Where to go when we are sick?



There are health posts in villages. People go to health posts when they are sick or wounded. There is a treatment for simple diseases at sub-health post, health post and health service centres. In hospitals, there are more facilities than health service centres. There are many doctors and health-workers. We can treat several diseases there. Vaccination is also given in health posts.

Sick people are carried in basket, hanging pouch or stretcher where there is no road. In town, there is ambulance to carry sick people. Sick people visiting to hospital or health post should use medicines according to the advice of doctors.

### Teaching instructions

Make different questions on the basis of given picture and ask students. Make them answer in their turn only. Discuss about the materials used to carry sick people.



## Activity

1. Look carefully at the following pictures.

What are there in the pictures? Say and write.



2. Play in pairs.

- |                |  |
|----------------|--|
| a. Health post | injection or medicine that protects us from diseases |
| b. Doctor      | place for the treatment of sick people               |
| c. Nurse       | vehicles that carry sick people                      |
| d. Ambulance   | lady taking care of sick people                      |
| e. Vaccination | medicine selling place person who checks sick people |

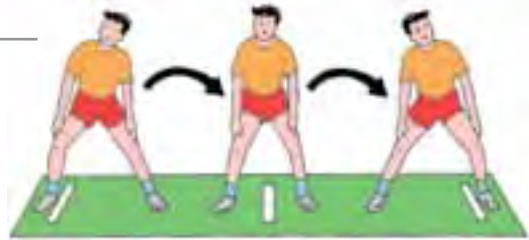
1

# Locomotor Skills

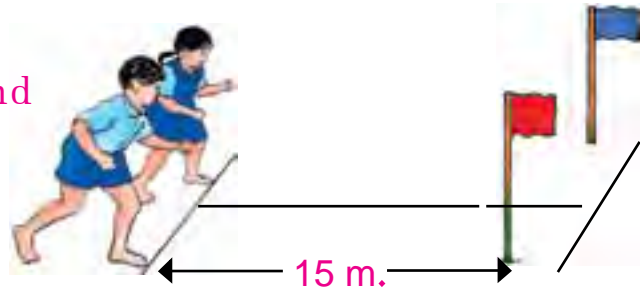
activity



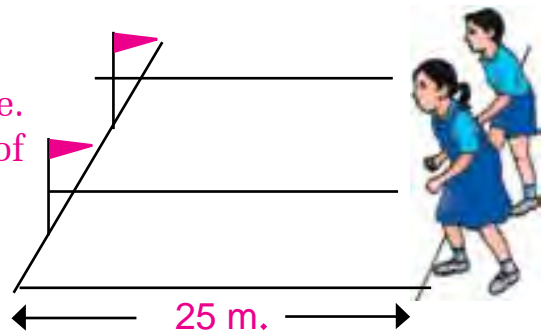
1. I know how to move left and right by shifting legs.



2. Go by running and bring the fixed flag.



3. I can run in a straight line.  
I can cover up a distance of 25m by running.



4. I know jumping. I can try to touch the object kept at a high place.



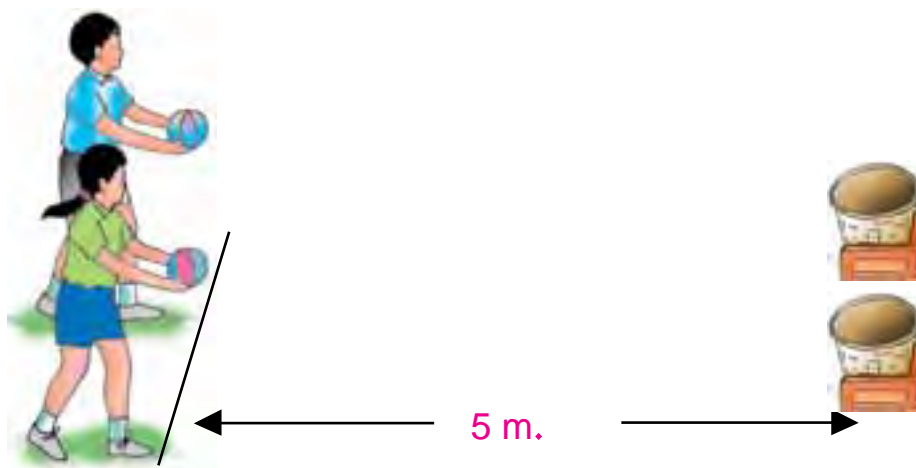
5. I can jump with my both feet and touch the ground.



6. I can do skipping without bending my legs. I can do skipping with one leg also.



7. I can throw ball with my left and right hand in the basket from a far distance.



### Teaching instructions

It is better not to let the same students do the same activity twice in a period. to anyone Do exercise of rest position to warm up the body before activity. Choose any interesting activity for last part of activity. Prepare a Been bag and make use of it for activity.

# 2

## Non Locomotor Skills

Body exercise like stretching, bending and moving are called non-locomotor exercises. Let's do such exercise before we play any games.

### activity



**By moving**

head



**By moving**

waist



**By moving**

shoulder

Move the joint part of the body towards left and right (side-ways) four times.



2. We can also do the same kind of exercise.

3. We can sit and stand by joining spines with friends.



4. We can do exercise by touching our hands on ground and lifting legs upward.



5. We can stand and sit by making a pair of 3 persons.



6. We enjoy rolling inside by hanging on the bar.



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### Teaching instructions

Do any physical activities in the presence of teacher. It is good to complete your preparation for pair and group activity, which you feel dangerous. Do motion activities to warm up the body.

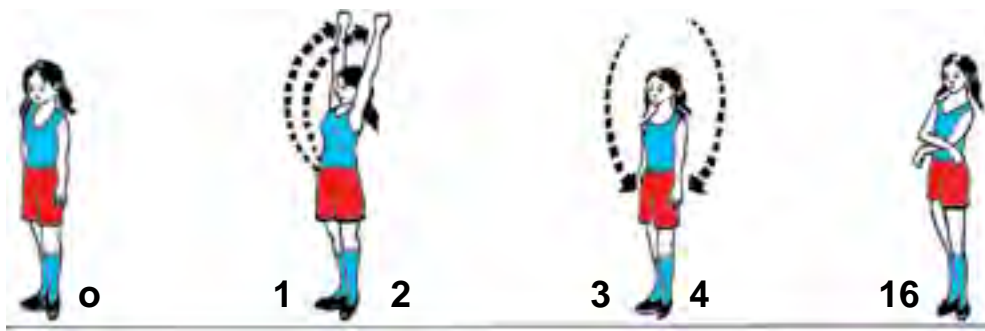


# 3

## Physical Exercise

Physical exercise makes our body active. We should do physical exercise in group with our friends. Working together in a group develops team spirit. We will practice P.T. learnt in Grade One and some other new P.T. in this grade.

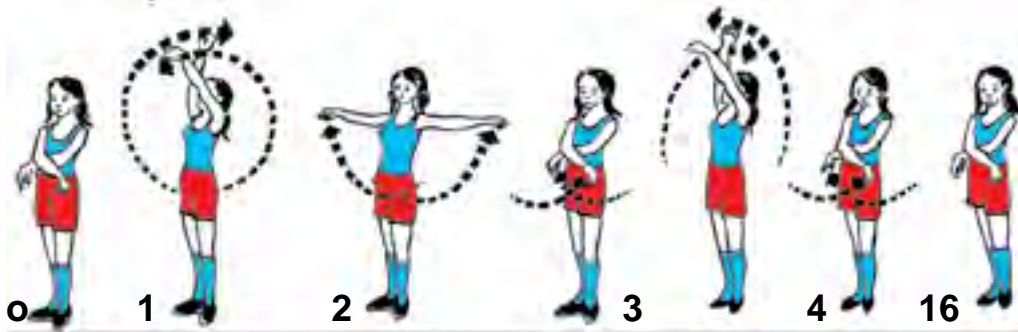
**Table No. 1 : Exercise of Hand**



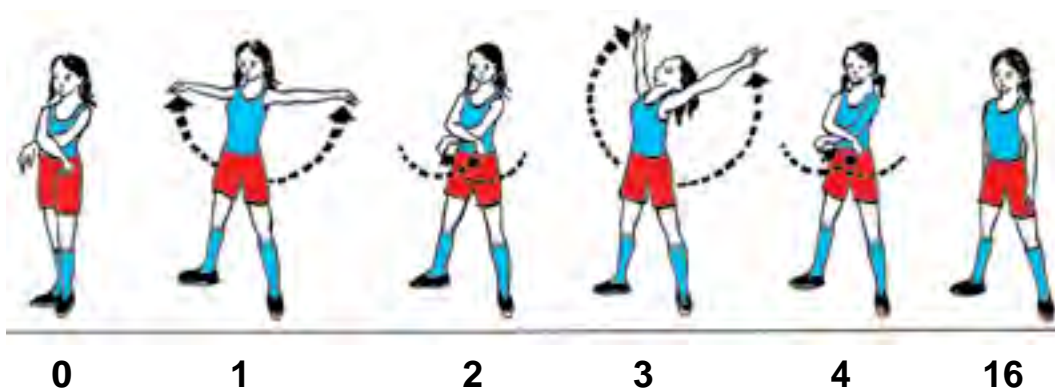
**Table No. 2 Exercise of Hand and Leg**



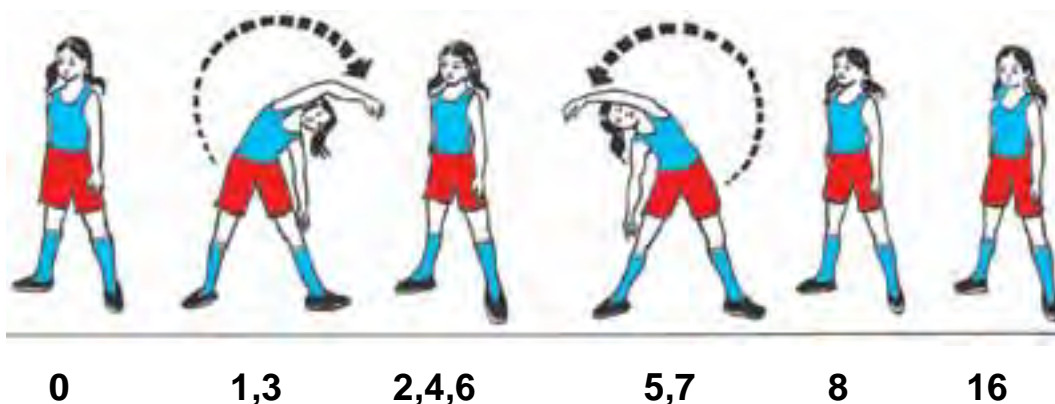
**Table No. 3 Exercise of Shoulder**



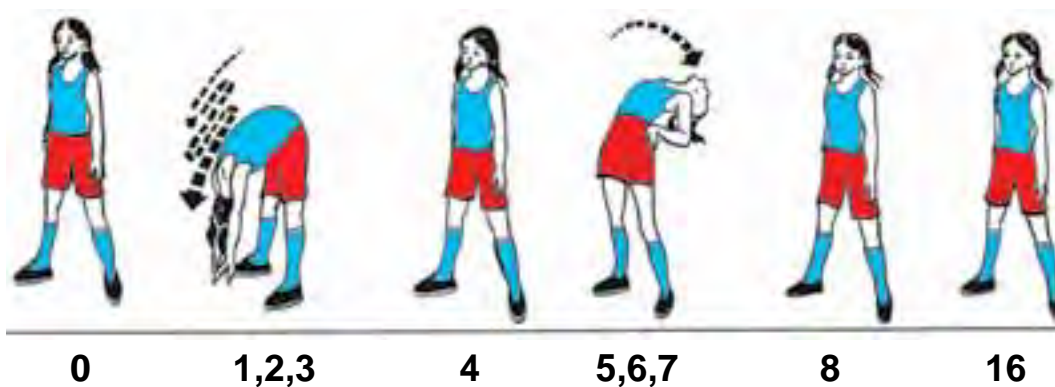
**Table No. 4 Exercise of Hand and Chest**



**Table No. 5 : Exercise of Hand and Waist**

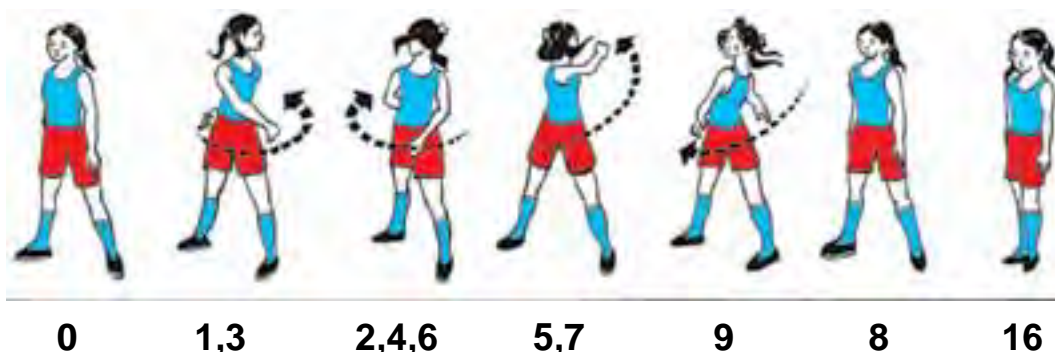


**Table No, 6 : Exercise of Waist**





**Table No. 7 : Exercise from heels**



### Teaching instructions

1. For physical training from table No. 1 to 4, do practice on the basis of teaching instructions given in class 1 Book.
2. For Table No. 5  
Start from the end position of table No.4. In count 1, keep right hand in sideways and bend waist in right handside and swing left towards right crossing over the head. In this practice, right hand reaches upto the knee and left hand crosses the head and bend the body towards right as shown in the figure. In count 2, stand straight and in count 3,4 repeat the actions of count 1 and 2. In count 5, do the action opposite to action done in count 1. Raise right hand above the head and bend towards left. In count 6, stand straight,. In count 7, repeat the action and in count8, stand straight again. Repeat this action for 16 counts.
3. For Table No.6  
In the beginning, start with the end position of table no.5. In count 1,2 and 3, bring both the hands forward and bend body forward. In count4, stand straight. In count 5,6 and 7, keep your both hands on back of the waist and bend head and body backward. In count 8, stand straight. Repeat this action for 16 counts.
4. For Table No.7  
In the beginning, keep the position of body as shown in the table no.6. In count1, bend waist towards left. Swing right hand from forward towards left and left hand from backward towards right. In count 2, move the body towards left. In count 3 and 4, repeat the actions as you did in count 1 and 2. In count 5, raise the hands up and in count 6, bring the hands down. In count 7, repeat the action of count 5. In count 8, come to previous ready position. In count 9 onwards repeat the actions in opposite direction. Do warm up exercise before this exercise.

# 4

## Drill

### Activity

#### 1 Attention ( Satark)

In attention position , we stand straight by keeping heels together and toes ( feet paws) a little apart. I can stand in attention position as shown in the picture.



#### 2 Stand at ease ( Goda phat)

In stand at ease position, we lift our left leg a little up and move apart. We can stand at ease.

#### 3. Rest ( Bishram)

At rest position, we do the same action as stand at ease position but we can bring the hand forward. At this position, we cannot move our legs here and there.



# 5

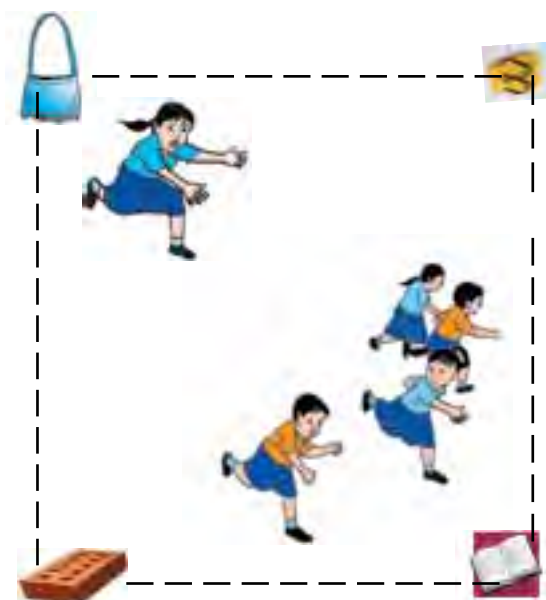
## Minor Games

We like games. We enjoy a lot when we play games with our friends. That is why we practice games everyday.

### Activity

#### 1 Simple Chasing (Sadharan lakhetai)

To play simple chasing game, first of all we make a boundary. After that we make one friend chase others. When chasing friend ( chaser) chases us we do not go outside the boundary. If the chaser touches any one of our friend, the touched friend becomes chaser. In this way, we play this game and enjoy.

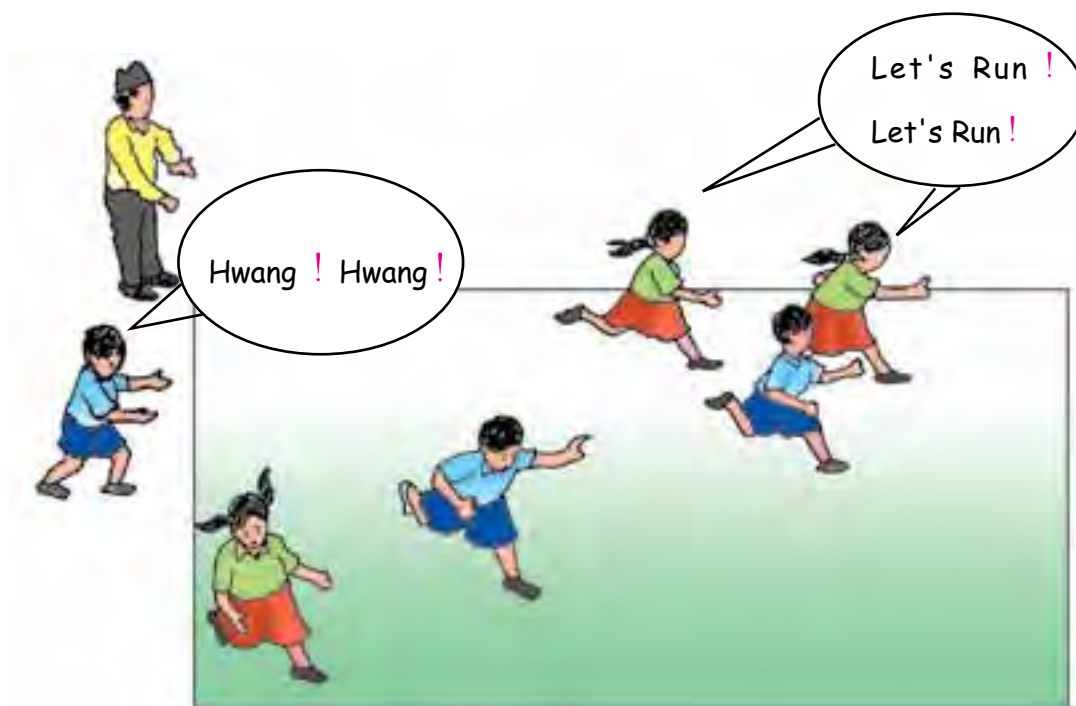


#### 2. Japanese Chasing ( Japani lakhetai)

We play Japanese chasing the same as simple chasing. When the second person starts chasing he or she should touch the place with one hand where the first person has touched him or her. First person should raise one hand and chase the others.



### 3 Dog is free ( Kukur phuskyo)



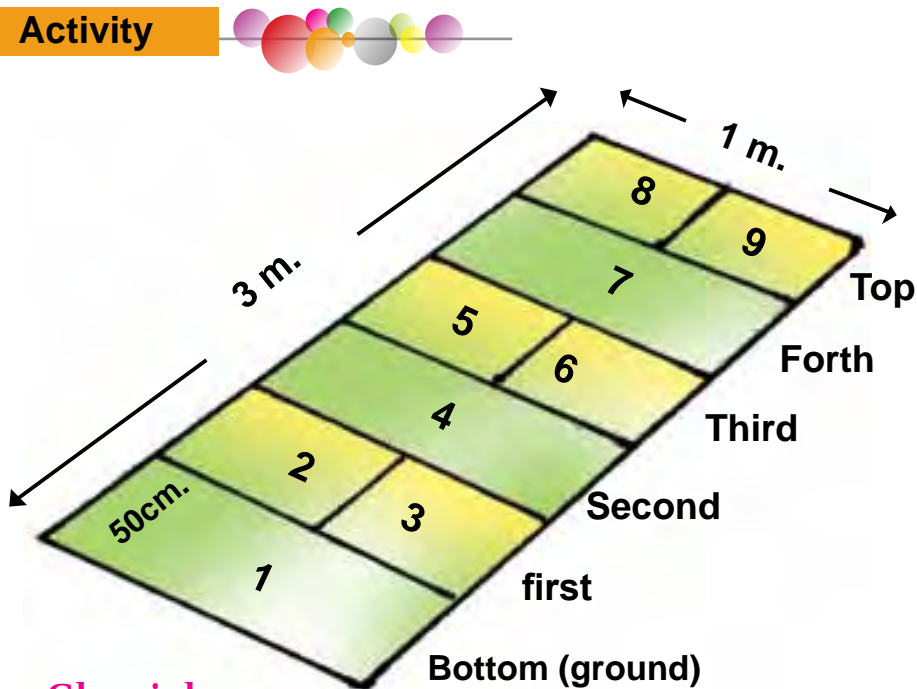
Dog free game is also played within a boundary. One player becomes a dog. The rest of the players scatter in a boundary. Friend becoming a dog sits outside the boundary and the game begins just after the referee blows whistle. When the dog (player) enters the boundary and starts barking, that is shouting “Hwang! Hwang!” and chase the other players. The chaser chases others and tries to touch. If the chaser touches any one of the player, the runner becomes a new dog i.e. a chaser and the game repeats in the same way.

# 6

## Local Games

We play many games in our locality in our own way. Such types of games are called local games. We enjoy by playing local games and make our body active. We play the following local games as well as some common games of our community.

### Activity



### 1. Ghwainkasa

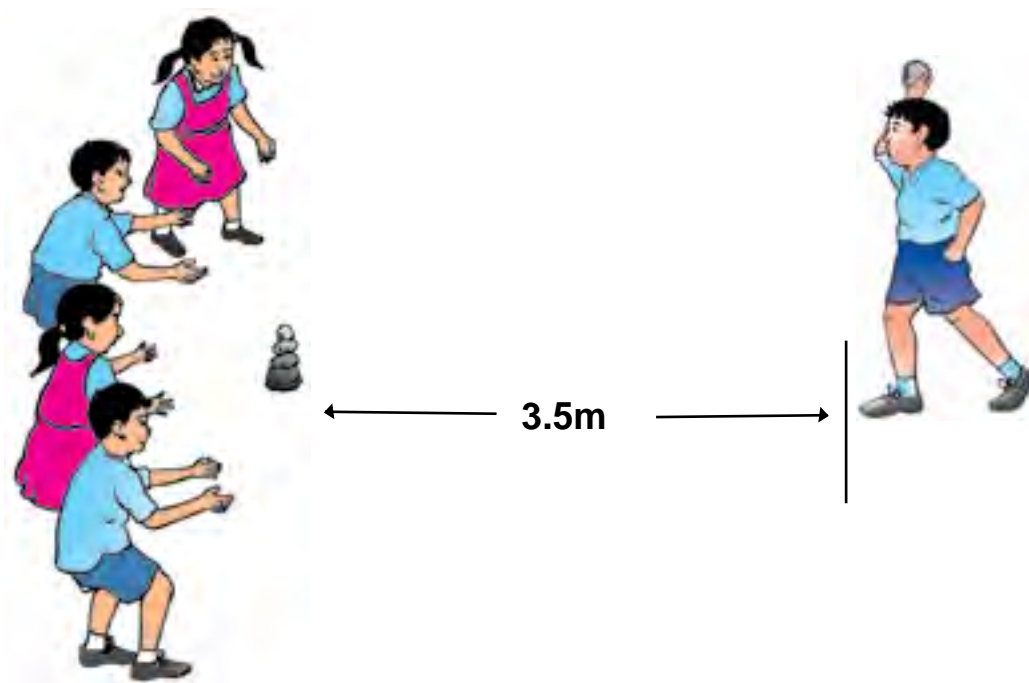
Ghwainkasa can be played in different ways. Here, we can play this game by making different storeys. To play this game, everyone should make ghwain area. The size of this ghwain is about 2 cm.

### Teaching instructions

If students do not understand the game, make them understand. You can make your own local rules and make them play. If there are many students willing to play this game, divide them in groups and make them play. Observe the game of all groups turnwise. Before you begin game, tell them to do exercise to warm up their body before game and cool up after the game is over.

## 2 Lakku Dhal Khel

This is a type of game played between two groups. One group becomes pile striker or hitter (lakhlu dhalne) and other group becomes chaser (ball hanne) who hit the members of pile striker group. From a certain place, each member of pile hitter group hits the pile and try to make it fall. The members of other group waits for the ball and tries to hit the other members of the opponent group. If the pile hitter group stand (make) the pile pillar again, the group wins the game. If the other group can touch all the members with the ball, this group wins the game.





## Immitating Games

In immitating game, we immitate (act as) different animals. We also express the different types of expression by acting or imitating. We imitate or do the acting of the following animals together with our friends.



walking of duck



jumping of frog



jumping of rabbi



flying of eagle





# 8

## Story Games

In this type of game, we do acting based on story script, which is told by our teachers. It is very enjoyable to do acting in a group. Here, we will practise the imitation of some acting useful for story acting or script.

**Lion roared**



**Rabbit run fast**



**Tortoise walked slowly**



**Rabbit slept**

---

### Teaching instructions

Choose stories in which you can do acting. (e.g. story of lion and rabbit, story of tortoise and rabbit, story of duck and fox) Encourage students to play stories games. Practise them to warm up their body before the acting game and cool up their body after the game.

# 9

## Ball : Throwing and Catching

Look at the picture and practise:

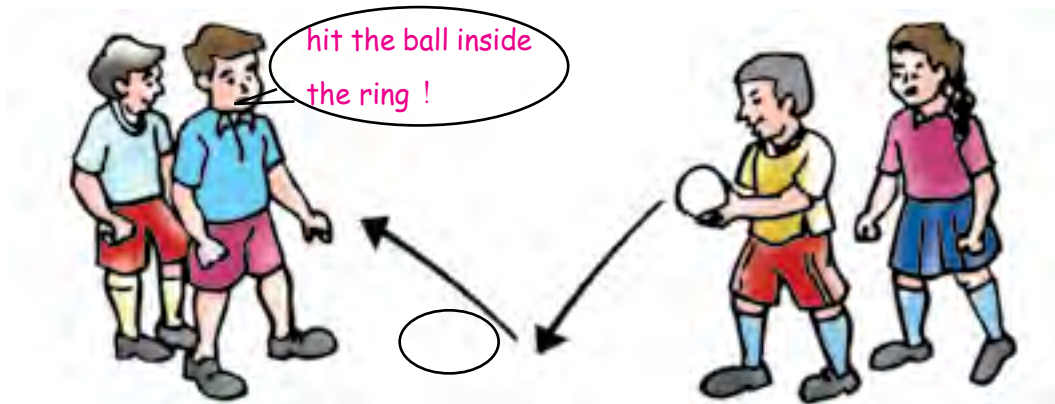
### Activity

1. Throw the ball with one hand on the wall as shown in picture and catch the ball after it returns from the wall.



2. Throw the ball as shown in the picture and try to escape.

3. Throw the ball to hit on the ground as shown in the picture.



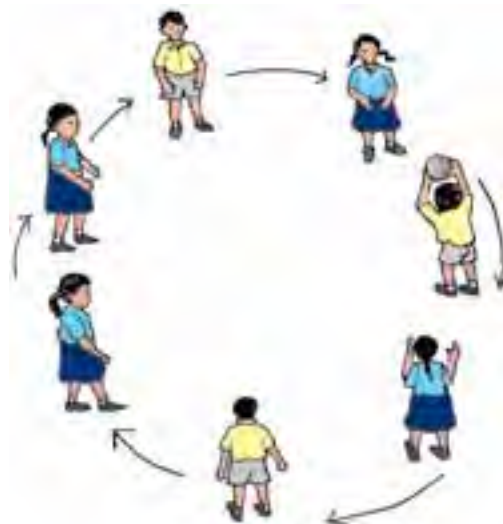
4. Practise the throwing of ball as shown in the picture.



5. Practise throwing and catching of ball by standing zigzag as shown in the picture.



6. Practise throwing backward and catching as shown in the picture.



7. Practise to throw the ball in the basket as shown in the picture.



8. Practise relay game by throwing ball as shown in the picture.



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### Teaching instructions

Make the students do warm up exercise before the activity. Keep the height of the net according to the height of the children. Arrange ball according to the group of students. Encourage participants to make the activity more interesting. Demonstrate in the beginning.

In somersaulting activity, we can roll our body in different ways. Here, we will practise rolling forward freely.

### Activity



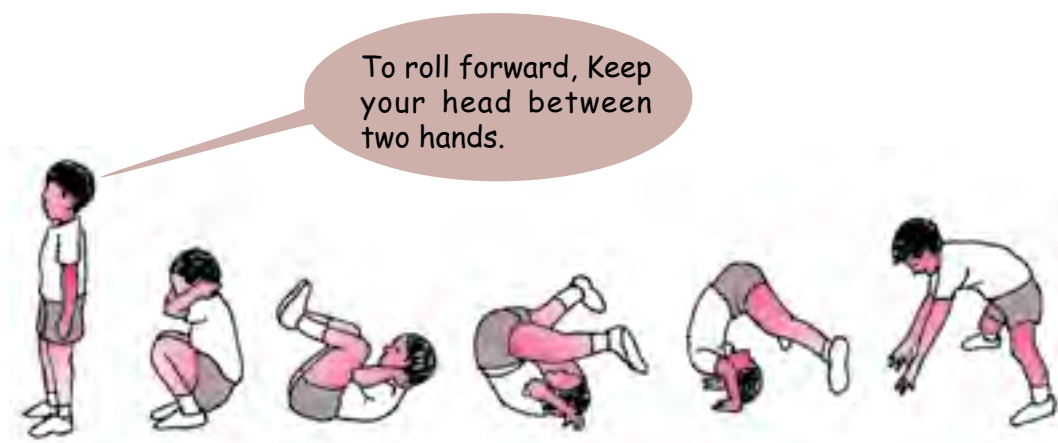
### Rolling forward

To roll forward, first of all we sit to keep our body in half-sitting pose.

After that we raise our heels slowly and touch the ground with the front paws and bend heads.

We push our body forward just by touching head on the ground. We stand on legs.

This practice can also be done by keeping legs apart.



### Teaching instructions

Use grassy ground or mat or straw-mat for rolling. Observe the students' activity regularly. Help them to improve the rolling practice for untrained(not willing to do this activity) in other activity. Make them to rolling exercise only for 2-3 times. After that engage them in other interesting games.

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## Balancing Activity

Balancing activity also makes our body active. We should do practice to keep our body balanced. Here, we will stand on one leg and do practice of balancing.

### Activity



1. Keep one leg straight on ground and raise other leg. Practise to stand on one leg.



2. Stand on one leg. Do practice of sitting and standing in pair.



### Teaching instructions

In the beginning, do the balancing activity only for short duration. After that, gradually increase timing. Do warm up exercise before activity. Make them to stand and balance sometimes on the left leg and sometimes on the right leg. Sometimes, tell them to close their eyes and do the practice of balancing.