



My Science Health and Physical Education

Grade 3



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 book entitled, “Mero Serofero” was written by Mohan Gopal Nyachhyo, Durga Regmi Hari Shankar Manandhar and Ram Pyari Shresth in line with the previous curriculum in which the contents of Science, Environment and Health were integrated. But in this book the contents of “My Science, Health and Physical Education” of Grade Three are presented and kept separately. The science portion of this book was written by a panel of writers comprised by Rakesh Shrestha, Tanka Lal Gaire, Nanu Dawadi, Balakrishana Chapagain, Yogendra Kandel and the health portion was written by Harka Shrestha, Dr. Ramkrishna Maharjan, Deeta Karki Dev Raj Maharjan and Prakash Maharjan. In the revision of this work, Mr. Haribole Khanal, Shambhu Dahal and Chitra Prasad Devkota have contributed significantly. Its content was edited by Ram Prasad Subedi, Dambar Angdambe, Prakash Maharjan and Pundya Ghimire. 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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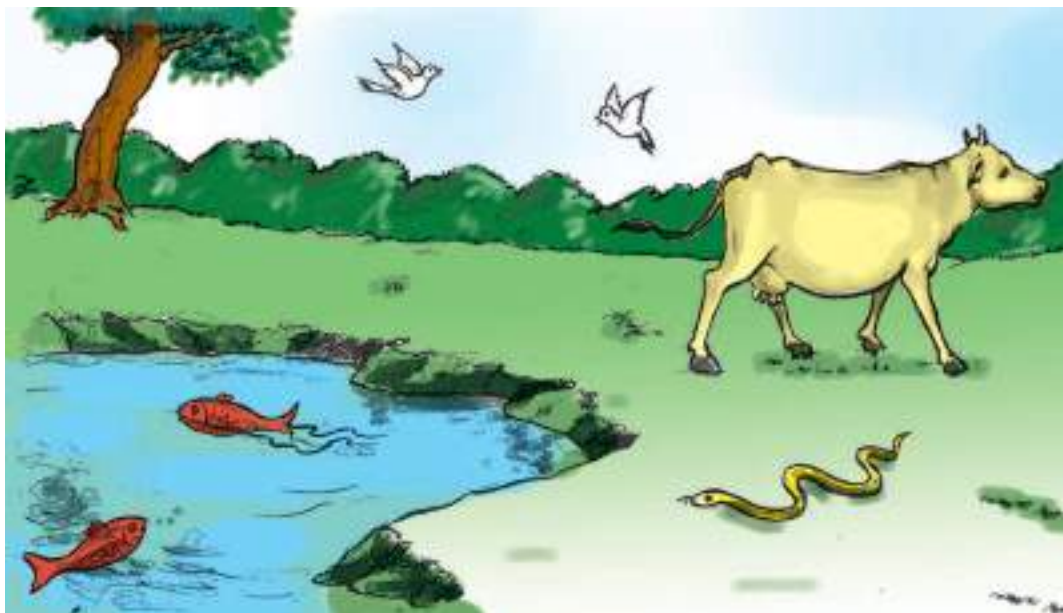
Lesson 1

Section 1: Science

Common Characteristics of Living Things



We know some characteristics of living things that we find around us. In this lesson, we will learn about some more common features of living things.



Characteristics of Living Things

Living things move:

Living things often move from one place to another. We have seen that birds fly, cows walk and fishes swim to get wherever they like to. Have you seen any living things that cannot move? Can you say why it happens? Think that different living things move in different ways according to their body structure.



Living things grow: All living things grow from smaller to bigger. We have seen that crops (rice, wheat etc.) and small plants grow from smaller to bigger when we harvest them in the farm. Also, we have experienced that human beings including other animals grow from smaller to bigger. Do living things grow until they are alive? Consider and tell.

Living things need food:

All living things need food for survival. They need energy to survive. Living things get energy from food. Some animals eat



only grass and crops for food. But some other animals eat meat of other animals. Plants absorb the soluble objects found in soil and water to make their food themselves.

Living things respire:

Have you ever closed your nose and mouth at a time? When you did it, you must have felt difficulty in breathing. You can do it only for some seconds. The nose is an external respiratory organ of human beings and other developed animals. Fishes have gills on either side of head for breathing. Plants have tiny pores on their leaves to breathe.

Living things reproduce:

We have already read that living things reproduce their own kinds. Some animals give direct birth to their young ones and some others lay eggs to reproduce. But plants reproduce by seed germination and stem cutting.

Living things have sensitivity:

If you try to chase some animals, they run away. When we happen to touch a hot



object, we leave it quickly. Similarly, Touch me not plant shrinks for a while if it is touched. These events happen because living things have sensitivity. The sensitivity directs living things to do something. An ability of living things to react to a certain event is called sensitivity.

Living things excrete:

All objects that living things eat cannot be digested. The body, in the form of liquid, absorbs the objects that are essential for it. They throw out waste in the form of stool, urine, sweat and carbondioxide. These are some examples of excretion.

Teaching instructions

Clarify different characteristics of different living things with examples. Tell, with examples, that feeding, movement and sense are also found in plants. Animals have a fixed period of growth. However, plants grow throughout their life. Make it clear with suitable examples.

Activity

1. Observe the movement of any five living things that you find around you. How is their movement? Write down.
2. Write down the names of five animals and five plants that you find around your school or house. How tall were they before and how tall are they now? Write down based on your observation and experience.
3. Write down the names of any five living things that you find around you. Which of their external respiratory organs can you see? Observe and write down.
4. Which of the animals you have mentioned in activity 2, which of them lay eggs and which give direct birth? Identify and write down in two columns.

EXERCISE



1. Tick (✓) the correct and cross (x) the wrong statements:

- a. Plants need food.
- b. Plants respire.
- c. Bus can move from one place to another.
So it is a living thing.
- d. Ants eat nothing.
- e. A motorcycle excretes. So, it is a living thing.

2. Answer the following questions:

- a. Write down any five characteristics of living things.
- b. A cat comes near if you show it milk but runs away if you show a stick, Why?
- c. Uprooted plants dry and die. Why?
- d. What differences do you see between growth of plants and that of animals? Write down.
- e. Both aeroplanes and birds can fly. Are they living things? Why?
- f. How does reproduction take place in plants and animals? Write down.

Lesson 2

DIFFERENCES BETWEEN LIVING AND NON LIVING THINGS



We find different things around us. Some are living and some are non-living things. For example, human beings, birds, dogs, plants etc. are living things and chair, bus, car, stone etc are non-living things. Non-living things are helpful to fulfill the needs of living things. After the death of living things, they become non-living things. We have already learnt about the characteristics of living things in the previous chapter. Can you now make a list of differences between living and non-living things? Try to do this.

Living things	Non-living things
a. Living things need food.	a. Non-living things do not need food.
b. Living things can show the movement.	b. Non-living things do not have movement. They can move with the help of external energy.
c. Living things grow.They grow from smaller to bigger.	c. Non- living things do not grow.
d. Living things respire. They die if they cannot respire.	d. Non-living things do not respire. They have no life
e. Living things reproduce their own kinds.	e. Non living things do not reproduce.
f. Living things have sensitivity.	f. Non-living things do not have sensitivity.

Activity

1. Find out the differences between a table and a cat on the basis of their characteristics. Discuss among friends and make a table.
2. Take a potted plant. What differences do you find between the pot and the plant? Discuss and write down.

EXERCISE



1. Match the following:

- | | |
|------------|--------|
| a. A bird | walks |
| b. A snake | swims |
| c. A fish | crawls |
| d. A man | flies |

2. Tick (✓) the correct and cross (x) the wrong statements:

- a. Pebbles in river are off-springs of rocks.
- b. Animals do not reproduce their own kinds.
- c. Plants need food.
- d. Plants do not respire.
- e. Human beings have sensitivity.

3. Answer the following questions:

- 1. Write down any four differences between living and non-living things.
- 2. Write down any two differences between plants and animals.
- 3. Draw a picture of an animal that you like most.

Lesson 3

Animal Habitats



Animals need homes to protect them from the sun, rain, wind and other problems. Most animals make their home themselves. But some animals use natural places as their homes.



Animals make their homes that are adaptable to their body. Birds make nests and their body is covered with feathers.



Rats make holes on the ground with the help of their teeth and legs. The snake has a cylindrical body and it also lives in a hole on land.



Hares make their home themselves. Lions and tigers live in caves in the jungle. Such caves are called dens. Bees live in hives.

Domestic animals live in man made homes. Cows and buffaloes are kept in sheds. Dogs are kept in kennels and horses are kept in stables.

Some animals live in water and some live both on land and in water. Fishes live in water. They swim in water with the help of their fins and tails. Crocodile, crab, frog, tortoise can live both on land and in water.



Teaching instructions

The students might have seen animals in their surroundings. Encourage them to explore their homes.

Activity

Make a list of five animals that you have seen . Observe and write down where they live.

EXERCISE



1. Fill in the gaps using suitable words in the following sentences.

- a) Living things need _____ to protect themselves from sun, water, wind and enemies.
- b) Homes of birds are called _____.
- c) Cows live in _____.
- d) Lions live in _____.
- e) Goats live in _____.

2. Match the following:

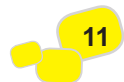
Animals

Habitats

- | | |
|-----------|----------------|
| i) Mouse | Shed |
| ii) Cow | Stable |
| iii) Bird | Hive |
| iv) Fish | Nest |
| v) Horse | Water |
| | Hole in ground |

3. Answer the following questions:

- 1. Why do animals need home?
- 2. Where does a monkey live?
- 3. Draw the picture of an animal you like and write, where it lives?
- 4. Draw the picture of home of an animal which you like.
- 5. Write down the names of two animals that can live both on land and in water.



Lesson 4

Food of animals and their eating habits



All animals need food to survive. Different animals have different types of food. We also eat food. Animals have different ways of eating food.

Plant eating animals (Herbivorous)

Most of the animals found around us eat plants and objects made from them. In forest, there are many animals that eat grass and shrubs. They have short and thin teeth. They do not have strong claws. Most of these animals have hoofs. Similarly, they have strong mouth. They are called herbivores. For example, cows, buffalo, sheep, yak, donkey, horse, deer, rabbit etc. Do you know some more animals of this type?

Flesh eating animals (Carnivores)

Have you seen animals that kill other animals for food? Some animals eat other animal's flesh for survival. They have sharp

teeth and strong claws. They are called carnivores animals. For example, tiger, eagle, leopard etc. Some animals eat flesh by tearing. Some animals swallow the whole body of an animal. Snakes swallow the frog and lizards swallow insects.

Plants and flesh eating animals (Omnivores)

Some animals eat both animal's flesh and plants for their food. They are pig, dog, cat, crow, hen etc. Birds have beak. They take grains in the form of their food. Dogs and cats have strong teeth and claws. Human beings do not have sharp and strong teeth and nail like other carnivores. Animals eating both plants and animal's flesh are called omnivores.

Activity

1. Observe any two herbivores found around your house or school. How do they eat food. Write down.
2. Observe one carnivore animal found around your school or house and note down its eating habits.
3. What types of food are used by omnivores? Observe and write down.

Teaching instructions

Make students observe models or the pictures or real objects of carnivores, omnivores and herbivores animals. Similarly, ask them to differentiate between different external respiratory organs of these animals.

EXERCISE



1. Fill in the blanks choosing the suitable words.

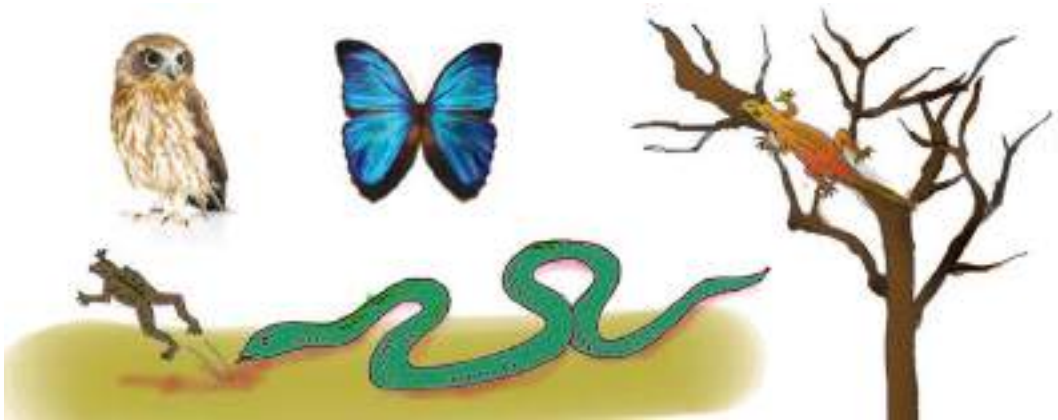
- a. Animals eating only plants are called.....
(omnivores, carnivores, herbivores)
- b. Animals that eat only flesh of other animals are called
..... (carnivores, omnivores, herbivores)
- c. Animals eating both plants and animals are called
..... (herbivores, carnivores, omnivores)
- d. The is a herbivorous animal.
(Hen, Rabbit, Cat)
- e. A lion has flesh tearing teeth.
(blunt, sharp, weak)

2. Answer the following questions.

- a. Make a list of five carnivorous animals.
- b. Make a list of five herbivorous animals.
- c. What are the differences between carnivores and herbivores in term of eating habit?
- d. Draw a clear diagram of a herbivore that you like most.
- e. Name any five animals that eat both animals and plants.

Lesson 5

Animals seen in different times and seasons



Some animals around us are seen throughout the year. We often see frog, earthworm, snakes etc in rainy season. We cannot see them in winter season. They usually live under the earth and appear on the surface when it becomes hot in summer season. They have moist and cold body. In rainy season, there is moist soil on land.

Butterflies usually appear in the season of flowers. We find flies and cockroach in summer days. We see sparrows and bats in the evening of rainy season. We see these animals when the seasons are more suitable for their body. Have you noticed the seasons in which mosquitoes and snails appear? Glow worms, owls and bats appear only at night.

Do animals and insects around you always appear in all seasons? Why does it happen? Discuss with your friends.

Activity

1. Which of the insects and birds do you see from morning to evening? Note down the names of these animals.

EXERCISE



1. Do all animals appear in all seasons? Which animals appear in which seasons? Make a list of them.
2. Differentiate the following animals that you can find in summer season.

Owl	Bat	Snake	Mosquitoes
Glow-worm	Snail	Lizard	

3. Fill in the blanks with appropriate words:

- a) Earth worms are usually found in _____ season.
- b) Butterflies are usually found in _____ season.
- c) Frogs are seen in _____ season.
- d) All animals do not appear in all seasons because of the change in _____.

Lesson 6

Types of Plants



We have already read in previous grade that plants can be classified into three groups such as tree, shrubs and herbs. In this lesson, we will learn about flowering and non-flowering plants, their habitats and life spans.



Sunflower



China Rose



fern



water hyacinth

Flowering and non-flowering plants

You might have seen different types of plants around your house and school. Do all plants bear flowers? All plants do not bear flowers. Some plants do not give flowers. Mustard plant, rose, rhododendron, mango etc. bear flowers. So they are called flowering plants. Spirogyra, fern, mushroom, moss etc. do not bear flowers. Flowers are of different colours such as red, yellow etc. Flowering plants give fruits. They have seeds inside them. Seeds grow into baby plants.

Annual and Perennial Plants

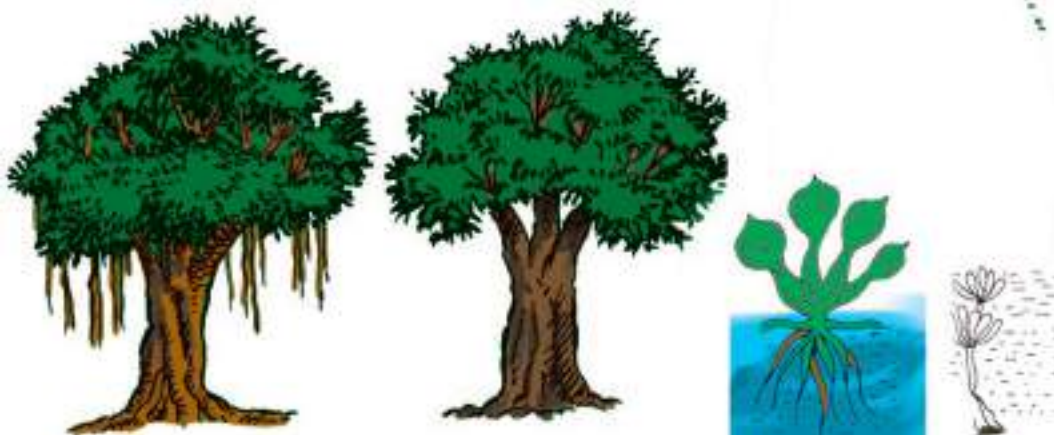
Some plants that we find around us survive only for one year. But some other plants survive for more than one year. Rice, maize, mustard, pumpkin etc. survive only for some months. They are called annual plants. Sal, Sisau, Mango, Guava, Pine, Chilaune, etc. survive for more than one year. So they are called perennial



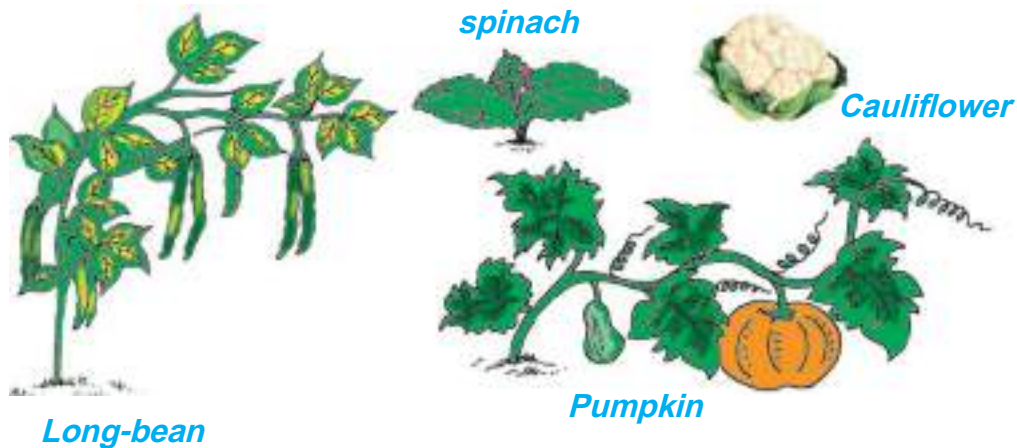
plants. Most of the plants that belong to a group of herbs are annual plants and a group of plants belonging to shrubs and trees are perennial plants.

Terrestrial and aquatic plants

Where have you seen plants? We find most of the plants on land. We find banyan, peepal pine, guava, mustard, raddish, pumpkin, lady's finger etc. on land. Also, we find some plants in water. For example: lotus, hydrilla, spirogyra, water lily etc. Some terrestrial plants grow in moist and damp places and some plants grow on hot and dry places. Banyan, Peepal, Water hyacinth, hydrilla cactus and pine are found in dry places. Plants like fern, mushroom, mucor (DHUSI) etc. grow in moist and shady places.



Plants found in summer and cold seasons



You might have seen that farmers grow different types of vegetables in different seasons. Some vegetables grow in the summer season and some grow in the winter season. We find cauliflower and leafy vegetables often in cold season. We find pumpkin, bean and gourds in summer days. But nowadays off season vegetables are also grown. The seeds of different vegetables are distributed at different agriculture farms and centres.

Activity

1. Make a list of 10 plants that you can find on either sides of road from your house to school. Then, classify them into flowering and non-flowering plants to show your teacher.

Flowering plants	Non-flowering plants
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

2. Which of the plants that you find around you survive only for one year and more than one year. Write down in table. Also, show your teacher.
3. Observe the places having both land and water in your surroundings. What types of plants did you see there? Write down in following table:

Terrestrial plants	Aquatic plants
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

4. What types of vegetables are grown in the farm in different seasons. Write down them in the following table:

Vegetables in cold seasons	Vegetables in summer seasons
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

Teaching instructions

Make students observe the plants that they find at local level, and also help in classifying them.

EXERCISE



1. Tick ✓ the correct and X the incorrect statement.

- (a) Mustard is a flowering plant.
- (b) Marigold is perennial plant.
- (c) Pumpkin is an annual creeper.
- (d) Pine tree is found in water.
- (e) Rayo Sag is usually found in cold season.

2. Fill in the gaps with correct answers from the brackets.

- (a) plants live for some months.
(perennial/annual)
- (b) is found in dry place. (Cactus, Fern)
- (c) Fruits have inside them. (epicarp, seed)
- (d) Cucumber and pumpkin are grown in
season. (summer, winter)
- (e) Seeds of green vegetables and fruits are sold in
..... (agriculture farm, health post)

3. Answer the following questions

- (a) Name any 3 flowering plants.
- (b) Name any 3 non-flowering plants.
- (c) Make a list of vegetables found in summer and winter seasons.
- (d) Differentiate between annual and perennial plants with examples clearly.
- (e) Classify the following plants as aquatic and terrestrial.

Rhododendron	Papaya	Algae
Lotus	Brinjal	Hydrilla
Lady's finger	Peepal	Mustard

4. Draw a neat picture of a mustard plant and write down about it based on the following:

- Flowering/Non-flowering
- Terrestrial/Aquatic
- Winter season/Summer season
- Annual/Perennial

5. Classify the following plants as annual and perennial plants:

Mango	Pumpkin	Rice	Grapes	Gram
Litchi	Cherry	Rayo	Orange	Wheat
Pea	Coconut			

6. Draw a picture of a flowering and a non-flowering plant and colour them appropriately.

Lesson 7

Advantages from plants and animals



Rice



Maize



Rayo



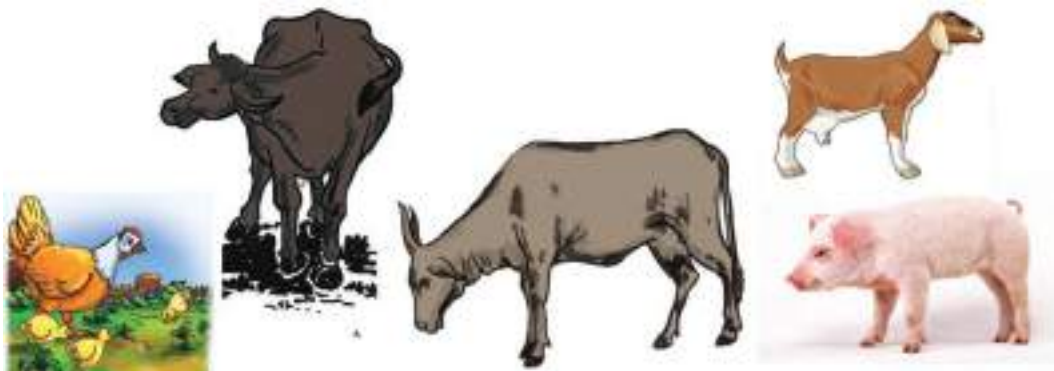
Banana



Orange

A) Food

We eat cereals, vegetables, fruits, fish, meat etc. How can we get such foods ? Do you know? We get these foods from plants and animals. We get cereals, pulses, vegetables, fruits etc. from plants. We get foods from animals in the form of milk, eggs, meat, honey etc.



We eat different parts of the plants. The roots of some plants are eaten. The stems and leaves of some plants are also eaten.

Similarly, the edible fruits are eaten of some other plants.

Plants having edible roots



Radish



Carrot



Turnip

Raddish, Carrot, Turnip etc have edible roots.

Plants having edible stems



Potato



Yam



Garlic



Ginger



Onion

Potato, yam, garlic, ginger, onion etc. have edible stems.

Plants having edible leaves:



Broad leaf



mustardCress



Spinach



Fenugreek

Broad leaf mustard, cress, spinach, fenugreek etc. have edible leaves.

Plants having edible fruits



Apple

Orange

Banana

Grapes

Apple, orange, banana, grapes, lady's finger, tomato etc. give us edible fruits.

Plants giving cereals and pulses



Pea

Bean

Wheat

Maize

Rice, wheat, maize, barley, buckwheat etc. are used as cereals. They contain seeds. Similarly, gram, bean, pea etc. are in the group of pulses.

Besides, we are also dependent on plants for other things. We produce oil from the seeds of mustard, til, coconut, soyabean,

sunflower etc. Oil is used to cook and massage the body. We use some plants for medicine. They are neem, tulsi, babari, etc. We also prepare gum, rubber, scent, etc from the plants. We can get many more advantages from them.

B. Clothing

We use animals and plants not only for food but also for clothes to wear. We obtain raw materials that we require for making clothes. We use some plants to make clothes. We make cotton clothes from the fur of cotton plants. We make quilt, shirt, pant, etc from the cotton fur. We wear cotton clothes usually in the summer season. Similarly, jute plants have fibres and we use them to make rope, bag, carpet, clothes etc.



We keep sheep and rabbits for wool and meat. We use wool to make sweater, socks, carpet etc. We use woollen clothes during winter season to keep our body warm. Silk-worm produces silk and we use it to make silk saree and sal.



Besides these, there are various advantages from animals. We make shoes, suitcase, jacket, purse, bag etc. from the leather of animals. Leather goods are soft and strong.

We use some animals such as horse, camel, donkey etc to transport the load. Similarly, we tame dogs and cats for security and hobby.

Teaching instructions

Introduce food items and clothes that we get from domestic animals and plants at local.

Activity

- Write down the names and advantages of domestic animals in the following table. Also, discuss them with your friends:

Name of animals	Advantages
1.
2.
3.
4.

- You may be using shoes, clothes, bag and belt. Which of them are obtained from plants and which of them from animals? Differentiate.

- Match the following:

Name of plants	edible parts
a. Radish	stem
b. Spinach	fruit
c. Ginger	roots
d. Tomato	leaves
	flower

- Choose appropriate words to fill in the gaps:

Medicine wool Milk Cereals Carrysoft

- Cows are kept for
- is made from neem plant.
- Donkeys are used to load.
- Rice, wheat, etc are.....
- is used to make sweater, socks, etc.

3. Answer the following questions in short:

- a. Write down any three advantages of plants.
- b. Write down any three advantages of animals.
- c. Name any two animals that are kept for wool.
- d. Name any three plants having edible stem.
- e. What items can we make from animal leather? Write down their names.

4. Draw a picture of your favourite domestic animal and write down its advantages.

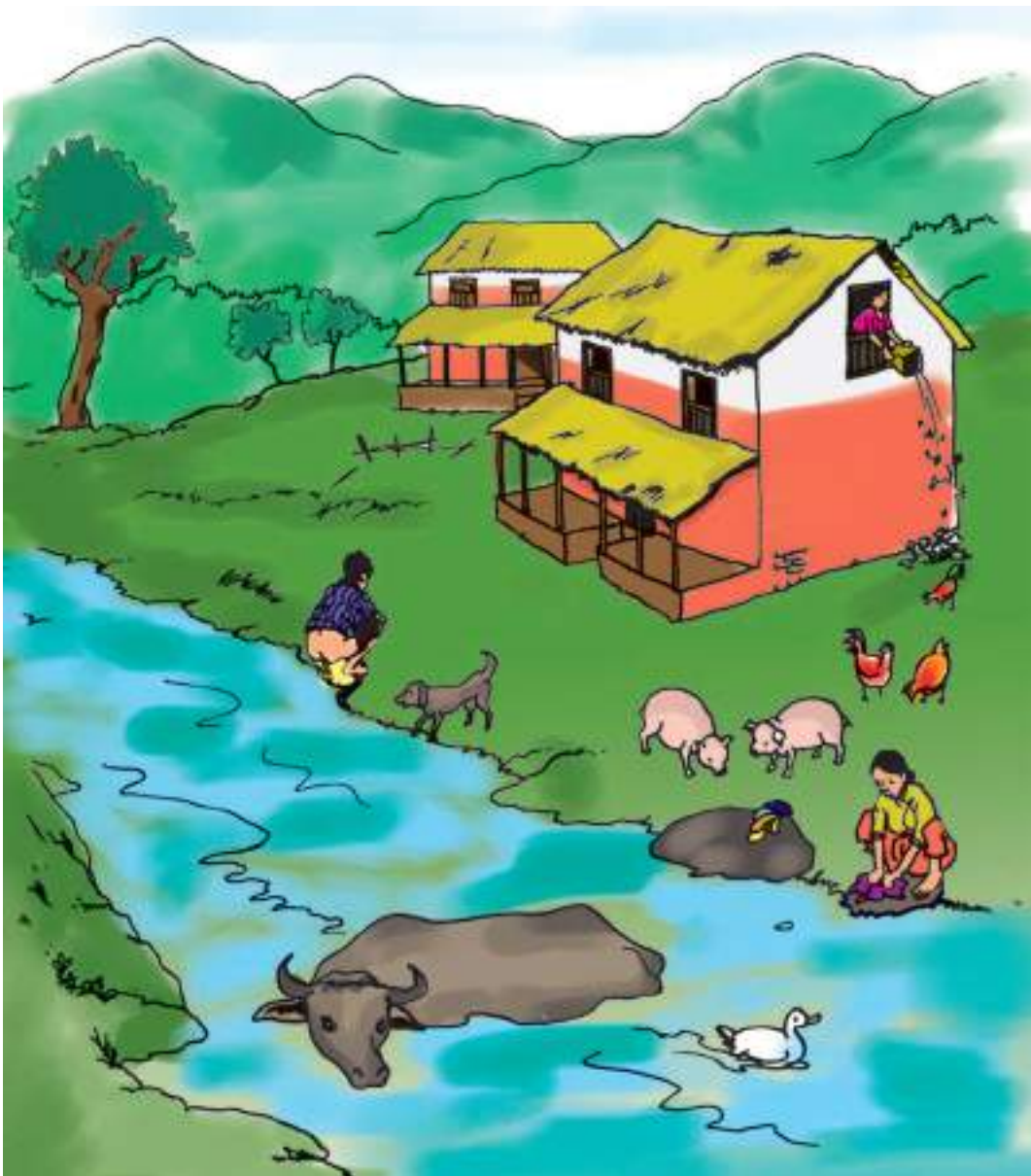
5. Collect and paste different food items that you obtain from plants. Write down their names.

Lesson 8

our Environment



Causes of Environmental Pollution



Activity 1

Observe and discuss the causes of environmental pollution that you see around the house and its surrounding given in the above picture.

The environment gets polluted when we throw both disposable and non-disposable wastes, unsystematically, that result from what we do inside and outside the house. When we litter and defecate everywhere, the house and its environment becomes dirty. Similarly, the animals left by people litter and make toilet everywhere. This makes our environment dirty. If the house and its surroundings are dirty, the flies and mosquitoes grow. They can transmit different types of diseases. The air is polluted due to smoke that comes from fire when we light it everywhere. The dirty air causes different types of diseases.

Measures for keeping environment clean:



Activity 2

Why does the house in the picture look clean? Discuss.

Measures for keeping environment clean:

Garbage and wastes should not be thrown here and there to make environment clean. We can put disposable wastes in a ditch to make compost.

Non-disposable wastes should be collected separately.

If we do not let domestic animals like cows, buffalo, hen, etc walk here and there, we can be away from wastes that they produce.

We should go to toilets and use them properly.

An appropriate provision for drainage system should be made. If we keep our house and surroundings clean, we can protect ourselves from diseases.

Smoke-free chimneys should be used in the village while cooking food.

Smoke and dust get the air polluted. To prevent it, we should plant the trees.



Activity

3. Make a list of disposable and non-disposable wastes that you can find around your house and school surroundings.
4. What can you do to keep your school clean? Make a list of activities.
5. Collect the pictures that demonstrate both clean and polluted environments.

EXERCISE



1. Tick ✓ the correct and X the incorrect statement.

- a. We have to free domestic animals to keep our house and its surrounding clean.
- b. An improved oven (chulo) should be used to reduce smoke.
- c. Planting trees helps in reducing air pollution.
- d. We should use toilets properly.
- e. Dirty environment affects us.

2. Fill up the gaps choosing the correct words:

Afforestation Toilet An improved kitchen Free Pit

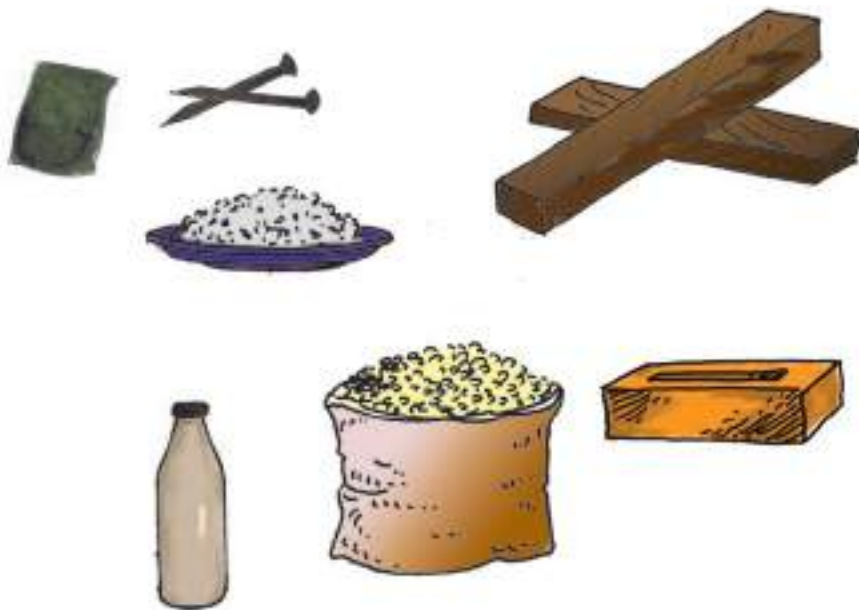
- a. We should not let domestic animals.....
- b. should be used to reduce smoke.
- c. A dirty..... is a breeding place of germs.
- d. Disposable wastes should be disposed in a
- e. should be done to reduce air pollution.

3. Answer the following questions:

- a. Write down any four causes of environmental pollution?
- b. What is the advantage of degradable wastes?
- c. What happens when toilet is not used properly?
- d. What are three ways to keep your house and school clean?
- e. What are the effects of dirty environment?

Lesson 9

Types of objects (matters)



A. Floating and sinking objects

Some objects float on water. Floating objects are lighter than water. Wood, plastic, paper, etc float on water. Objects heavier than water sink in water. They are stone, iron nails, brick, etc.

Activity 1

Put a piece of wood, stone, iron nails, paper in water one by one. See what happens? Make a list of them according to floating and non-floating objects.

Teaching instructions

Encourage students to experiment other materials than that mentioned in the lesson.

B. Soluble and insoluble substances

When we stir salt, sugar, etc with a spoon, they dissolve in water. They are called soluble substances. When you stir sand, chalk, soil, etc with a spoon, they do not dissolve in water. Such substances are called insoluble.

Activity 2

Put flour, wood dust, salt and sugar in water one by one and stir slowly with a spoon. See what happens? Make a list of them according to soluble and insoluble substances.

Activity 3

Make a list of five soluble and five insoluble substances that you find in your house.

C. Transparent and opaque objects

Light can pass through a clear plastic, a clear glass and water. However, light can not pass through stone, wood and iron. Objects that do allow to pass light through are called transparent and that do not allow to pass through are called opaque objects.

Activity 4

Put a thin plastic, a glass, a piece of wood and a steel plate or other similar objects before a burning candle or glowing torch light. Through which objects you can see a burning candle or glowing torch light. See and find out.

EXERCISE



1. Tick ✓ the correct and X the incorrect statement.

- a. Glass is a transparent object.
- b. Soil is not soluble in water.
- c. Iron nails sink in water.
- d. Wood is an opaque object.

2. Use suitable words in the gaps:

- a. Salt..... in water. (floats, sinks, is soluble)
- b. passes through glass. (water, light, air)
- c. Iron..... in water. (sinks, is soluble, floats)
- d. Plastic in water. (floats, is soluble, sinks)

3. Answer the following questions:

- a. Name any three sinking and three floating objects in water.
- b. Name any three soluble and three insoluble substances in water.
- c. Name any three transparent and three opaque objects.

Lesson 10

Use of wind and water



A. Use of moving air

Have you ever seen a paper windmill ? What happens when you run with a phir-phire in moving air? What happens if you have to rotate it?

Wind rotates the paper windmill. In the same way, it can move the turbines of wind mills. When turbines move, we can join a machine to generate electricity. Moving air helps the clothes dry quickly. Farmers use moving air to separate husk from grains by winnowing method. When it blows in the summer season, it makes our body cool. We can also pump water using moving air.



B. Use of running water

Not only moving air but also running water is useful to us in many ways. Running water moves the Pani Ghatta (local mill) to grind crops. Because of running water, a machine moves to generate electricity that we are using nowadays. We can row a boat on the running water.

Activity

1. Visit a Pani Ghatta (a local mill) if it is in the village. Observe and discuss how running water works.

- 2 How is husk separated from grain by farmers in the village? Observe and discuss.
- 3 With the help of your teacher, make a paper windmill and use it.

EXERCISE



1. Tick ✓ the correct and X the incorrect statement.

- a. Besides sunlight, moving air also helps to dry clothes
- b. Water at rest is used to run Ghatta.
- c. Electricity cannot be generated from running water.
- d. Moving air is necessary for winnowing.

2. Fill in the blanks.

- a.rotates turbines.
- b. Running water generates.....
- c. is needed to run Pani Ghatta.

3 Answer the following question.

- a. For what purpose do you use wind in your house?
- b. How is electricity that we use generated ?
- c. What are the uses of running water?

Teaching instructions:

If possible, take students for short visit to show water mill (pani ghatta) and explain its working principle you can also make a sample water mill.

Lesson 11

A windy day



Describe the weather in the above picture. What type of situation do you see in the picture? Why are leaves and branches of trees moving? Why are the clothes hung for drying flying? When we see an environment around us, the branches and leaves are moving, the dust particles are flying, the clothes are moving outside, the kites are flying in the sky and the long hair is being blown in the air. All three movements show that the day is windy.

The air sometimes blows slowly and sometimes with a great speed. Wind blowing with a great speed is called storm. Wind at high speed destructs much but gentle blowing air is useful to us.

When air becomes hot, it becomes lighter and rises up. The cold air of the surroundings comes there immediately. In this time,

we experience blowing of wind. It blows continuously. However, air blows gently in general, and it sometimes blows with a force.

Blowing air makes the day cool. In summer days we feel hot due to the heat of the sun. We feel cool when air blows in this time. Blowing air helps us to dry wet clothes faster. The leaves and fruits of trees may drop. If there is dust on land, the wind also blows it.

Activity

1. Hold a ribbon or a newspaper and stand in any place outside the classroom. Observe whether the ribbon moves or not. If it moves itself, what is the reason? Discuss with your friends and find out.
2. Bring your textbook or a copy near your mouth to move it. What do you experience? Why did it happen? Tell.
3. Make a paper fan. Hold it and stand in open place. Does this fan move continuously or it sometimes stops to move? Discuss and find the reason.

EXERCISE



1. Tick (✓) the correct and cross (x) the wrong statements.
 - a. Wind with great force is storm.
 - b. Air becomes heavier when it gets heated.
 - c. We feel cold when wind blows.
 - d. Leaves of plants do not move when wind blows.
 - e. Storm destructs.

2. Fill in the blanks with suitable words:

- a. Paper fan needs..... (blowing air, running water)
- b. Light becomes..... when we heat it. (Lighter, heavier)
- c. When air blows, clothes get dried..... (more slowly, faster)

3. Answer the following questions:

- a. What is storm?
- b. What does storm destruct?
- c. Does wind blow in the same way?
- d. When does season become cold?
- e. How do you know about blowing or non-blowing of air?

Lesson 12

A cold day



What type of situation is shown in the above picture? Is it winter or summer season? What might be snow? Have you ever thought? What happens when water becomes very cold? Most of the mountains (higher ones) are covered with snow throughout the year. They are Himalayas. Cloud at a greater height becomes very cold and changes into snow and starts falling down. So, a situation of freezing water is called snow.

Snow falls during winter season. It is very cold when snow falls. The days sometimes become foggy. We feel very cold in these days. The fog is the nearest cloud. In this way, it is very cold when snow falls, air blows, spreads fog and moves air.

It affects our body if days are very cold. It is difficult to move

parts of our body. Also, it makes difficulty while walking and working. In order to protect our body from cold, we have to wear thick and warm clothes during cold season. During snow fall, we need to stay inside to protect ourselves from cold.

Activity

1. During winter season, we sometimes see white powder on the ground. Why does it seem? Discuss and find out.
2. Why do you think foggy and cloudy days are colder? Does your hair gets wet or not while walking in the morning? If it gets wet, give causes. Discuss.

EXERCISE



1. Match the following:

- | | | |
|----|---------|-------|
| a. | Wind | Kite |
| b. | Snow | Light |
| c. | Hot Air | Rain |
| | | foggy |

2. Answer the following questions:

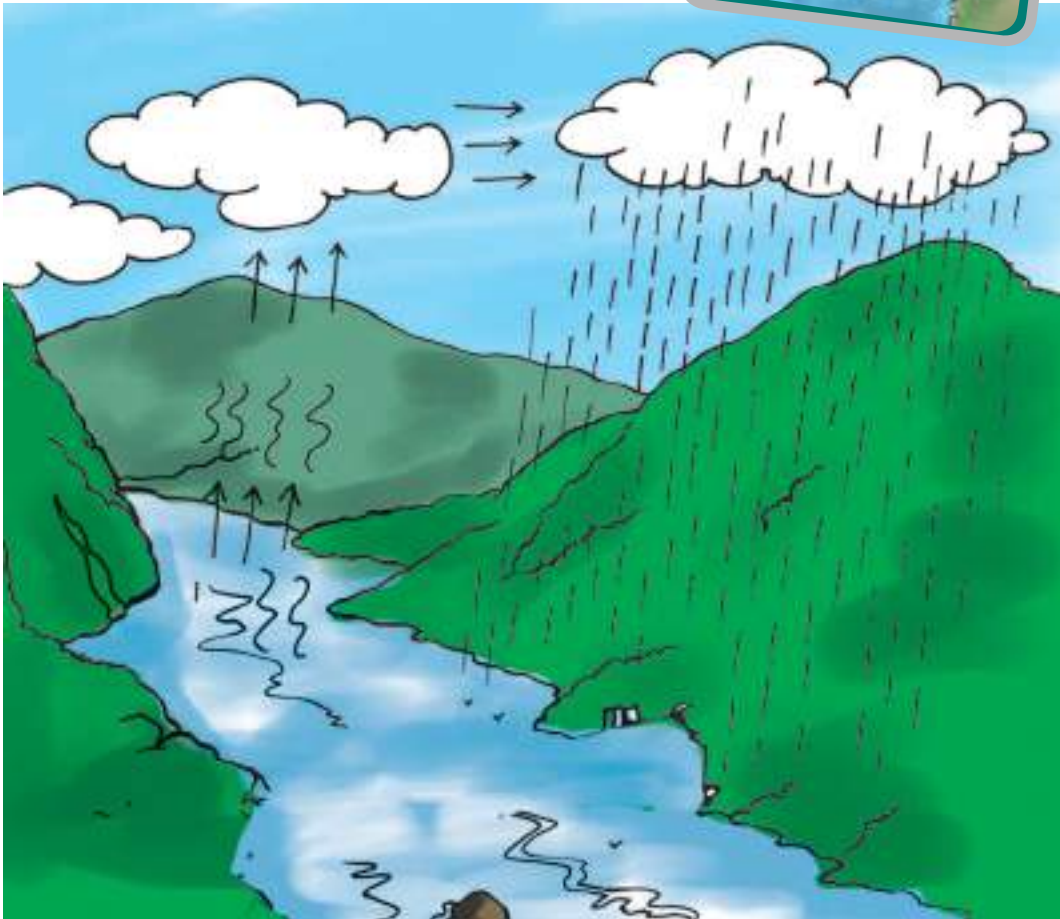
- a. What causes very cold?
- b. How is snow formed?
- c. What happens to us when days are very cold?
- d. What do you do to prevent your self from cold?

3. Draw a picture of a windy day.



Lesson 13

Cloud and Rain



What will form cloud? Have you seen that water dries while cooking food, boiling water and drying clothes? Where does this water go? This water becomes vapour and goes into air. When it goes higher, it changes into cloud. It rains when cloud is seen in the sky. So, cloud is a form of water. The heat from sun, the water evaporates from the sources of it like river, lake, pond, sea and ocean to make vapours and they form cloud. All days do not have the same weather. Some days are warm and some others are cold.

It sometimes rains. Why do they happen? Let's discuss. Do you see the sky clear in the above picture? The sky is full of clouds. A Cloudy day is cooler than a sunny day. Why is it so? In cloudy day, cloud blocks the sun light and there is less heat and light. So, when the sky is full of clouds, it becomes cold and dark.



What is cloud and how does it form? You know this. Now learn how it rains from cloud. When water of sea, river, lake, pond, etc gets heated due to the sun, it becomes vapour. It is lighter and rises up in the air. When it reaches higher, it freezes and forms cloud. Water vapour clinks together and becomes heavier and falls down as rain. Rain water again mixes into different sources of water like river, pond, sea and finally ocean, etc. Clouds form from this water and it rains from time to time.

Activity

1. Boil water in a kettle. When it starts giving water vapour, put a steel glass of cold water. Observe what happens when hot water vapours strike on the cold surface of glass. Discuss.
2. Take a polythene bag or a colourful bottle and fill water about half and tie above the water level. Leave this bag or bottle in the sun for some hours. What do you see inside the bag or bottle? Why did it happen? Discuss.

EXERCISE



1. Tick (✓) the best answer.

- a. A cloudy day is cooler than a sunny day. Why? (No light, No heat, No sun in the sky)
- b. Amount of water decreases while boiling. Why? (water is lost, changes into vapour, pot absorbs)
- c. When does it rain? (when it is too hot, when air blows, when cloud is seen)

2. Answer the following questions.

- a. How does cloud form?
- b. Why is a cloudy day cooler?
- c. How does rain fall?

3. Draw a picture of a rainy day.

Lesson 14

The Earth



Look at this picture. It is round. It is our Earth. Do you see all parts of the Earth at the same? In it, parts of land and water are separated. The surface of the Earth is formed by the parts of land and water. About $\frac{1}{4}$ part of the Earth is land and about $\frac{3}{4}$ part is water. Human beings, animals and plants exist on the earth.

Surface of Land is not the same in all parts. For example, there are mountains, plains, valleys and Himalayas on land. The land part of the Earth is called continent. The water part of the Earth is made of ocean, pond, river etc. The water part of the Earth is called ocean.

Earth is surrounded by a thick layer of air. The layer of air is called atmosphere. Atmosphere contains several gases. They are nitrogen, oxygen, carbondioxide, etc. Air consists of water

vapour, dust particles and smoke. As we go higher from the surface of the Earth, the layer of air becomes thinner.

Can you tell what makes land? Have you gone to see the cracked surface of the Earth? What do you see there? The soil covers the Earth's upper surface. The layer of soil is not very thick. When we start digging the Earth's inner part, we find different layers of soil with hard rocks. We do not find the same type of soil in different parts of the Earth. It differs according to places. Where there is no soil there are only rocks. Degraded things mix up with broken rocks and they become soil after a long time.

What things are mixed to make soil? Have you seen? Are there air and water also in soil? There are small particles of rocks, degraded objects (biological matters), air and water in soil. But we find these objects in a different quantity in different places. So, the soil of different places also differs.

The rocks that we find on land are both hard and soft. Soft rocks break down easily into smaller pebbles and helps in soil formation. But hard rocks do not break down into smaller pieces. Rocks are useful. Rocks are used to build house, wall, statue and to make the road.

Activity

1. Locate the water and land parts in the globe. What percentage of Earth's surface is water and land? Guess.
2. Dig the soil of different places to know whether it has water or not and put some soil on a thin paper. Keep it for some time and then look at it. Is paper wet?
3. Put some soil into a glass containing water. Can you see some air bubbles coming out of soil? Why it happens so?
4. Take a ball of soil and put it on a glass of water. Do you see that water vapours are raising upwards? Why did it happen?

EXERCISE



1. Fill in the correct word in the gaps:

- a. Land part of the Earth is called.....
- b. part of the Earth is water.
(one-fourth, half, three-fourth)
- c. Hardness of rock can be checked by
(looking, toughness, scratching)

2. Answer the following questions:

- a. What is the shape of the Earth?
- b. What are the parts of earth ?
- c. What are the constituents of soil?
- d. What is there below the soil?
- e. Write down the uses of water.
- f. How is hardness of rock checked?



Lesson 15

Means of communication



We talk to each other while sitting together. While talking, we give information to other people about various things and also receive information from others. But how do we receive information if we are far away from each other?

We receive information of our own place, surroundings and distant places through letters, radio, television, newspapers, email, internet and telephone.

Information about different events is called communication. Radio, letters, television, newspapers and telephone are the means of communication.

Activity

1. In the beginning of the lesson, there are some pictures of the means of communication. What are those means? Identify and share their names with your friend.

2. In the very beginning of the lesson, some pictures of the means of information are given. What information do they give? Read and discuss in a group and present in the classroom.
3. Have you talked in telephone? While talking in telephone we can talk to others and listen to the talk as well. In this way, we can give and receive information through telephone. So, telephone is a means of two way communication. But it is not possible through letters. So, it is a means of one way communication.

Radio and newspaper can be either one way or two way means of communication. Are they one way or two way means of communication? Discuss in a group of your friends and present to the class.

EXERCISE



1. **Answer the following questions:**
 - a. What do you mean by communication?
 - b. Write down the names of any three means of communication.
 - c. What informs you about the start of the second period in your school?
 - d. Why do you think a telephone is a means of two way communication?
2. **Read a current newspaper at your house or school and note down the news on your copy and read it in the class.**
3. **Listen to the radio at your home or surroundings .Write down a piece of the news on your exercise book and present it to the class.**

Lesson 16

Local technologies



There are different things around us. We use some of them in our daily life. We throw away many things as wastes. Some objects are not useful and we throw them as garbages and wastes. However, all of them are not wastes. We can make compost from rubbish that comes from our kitchen. Similarly, the rubbish from toilets and animals can be used for making Gobar Gas Plant.

Compost Manure

As shown in the above picture, we should collect the decayed parts of the vegetables, rotten fruits, stale and dropped food in a pit. After some days, all these decay and change into manure. Such manure is called compost manure.

Benefits of making compost manure

We should throw decayed and rotten waste materials into a pit. Due to this they are not scattered everywhere and the surrounding environment does not become dirty.

Compost manure is very good for plants. It consists of all nutrients for plants to grow.

Compost manure can be made from degradable garbage and wastes. So, it reduces the expenses of buying chemical fertilizers.

Activity

1. Visit a compost manure pit in your locality. Ask a responsible person about constituents of compost manure and share the ideas in the class.

Bio Gas

Have you heard about bio gas? Human and animals excreta are collected in a pit and gas comes out from it. Such gas is called bio gas. Bio gas is used to light bulb and cook food.

2. Visit a bio gas plant in your area (if possible). Try to know how the gas evolved in the plant from responsible person. Discuss about the benefits of Gobar Gas in the class.

Sharpening the weapons

We use different types of tools in our house and shops to cut things. These tools are usually made from iron. Do you recognize the following tools?



For what purposes are they used? Discuss with classmates and tell. Sharp edged tools become blunt after long use and it is difficult to work with them. Such blunt tools can be sharpened again. Look at the following picture. You can see a person sharpening the tools.

3. Take a old pair of scissors and one new scissors. Now cut some useless pieces of clothes by using the new scissors and the blunt scissors one by one. Which scissors cut it easily and properly? Tell.

Benefits of sharpening instruments:

Sharpened tools have sharp edge and cut things properly.

Sharpened tools cut things easily.

Blunt tools can be sharpened and reused by sharpening. In this way, we do not have to buy new expenses.

Cold store for storing food items

We all need food. We eat different types of food. Cereals like rice, wheat, maize and millet, vegetables, fruits, milk, fish, meat, etc are our main food items. We have to store these food properly otherwise they may decay and cannot be used for longer time.

Food grains should be stored in safe and dry places. Similarly, vegetables, fruits, milk, fish and meat should be stored in cold places to prevent from decaying. There are different cold store centres in different places to store the food items. Rooms used for storing food items are made cold by using ice or electricity. These rooms are called cold store rooms.



EXERCISE



1. Tick (✓) the correct and cross (x) the wrong statements:

- a. Compost manure is made by decaying waste garbages.
- b. Compost manure can also be made by non-decayed wastes like plastic, glass, iron pieces, etc.
- c. Bio gas is produced from glass, stone and plastic.
- d. Animals dung is used to get bio gas.
- e. Blunt tools can be made sharp.
- f. Cold store is made hot while storing food items.

2. Answer the following questions:

- a. What are used to make compost manure?
- b. Write down any two advantages of compost manure.
- c. How is bio gas useful to us? Write down any two uses.
- d. What should be done to blunt tools for making them sharp?
- e. What do you mean by cold storage?

Teaching instructions:

If the students at their home make compost manure, ask them to share their experiences in the class. If possible, bring students to the places where copost fertilizer is made so that they can observe these places. If there are students from the families that make Gobar Gas, ask them to share their experiences in the class. If possible, bring students to places where Gobar Gas is in use so that they can observe its use. Give an example of cold storage if it is in your surroundings. Also, say that we can storre vegetables, fruits, milk, fishes, meat etc. for a long time to protect them from decaying. In the same way, tell your students that these foods decay soon in summer season. However, they do not decay in winter season. Inform students about several accidents that may occur due to the use of sharp tools, and make them aware of different measures to be taken for security.

Section 2: Health Education

Lesson 1

Keep your body Clean



Observe the above pictures and find out what they are doing.

We become healthy if our body is clean. Body sweats while playing, working and walking to school. Dust particles stick to sweat and body becomes dirty giving bad smell. If we do not clean our body, we become sick.

We have to bathe to keep our body clean. If we do not bathe from time to time, there may be lice both in our body and head. While bathing, we must clean our head, hands, feet, stomach and other organs with soap and water properly. After bath, wipe your body with a towel and wear clean clothes. We must wash our hands and feet with soap water after playing sports and working. We

must wash our hands well before eating food. We must brush our teeth daily. We must use a brush or Dattiwan (a local brush obtained from a tree). If we brush our teeth twice a day, both mouth and teeth become clean. We must cut nails from time to time. If we do not cut nails, dust may be trapped on nails and that goes to our stomach while taking food. If dirt goes to stomach, it may cause various diseases.

Activity

1. What should be done for personal hygiene? Discuss and tell in a group.

- a. After using toilet, hands and mouth should be properly with water and soap.
- b. We must wash our..... before eating.
- c. Long nails should be.....
- d. We should take.....regularly to remove dirt from our body.
- e. Tooth brush orshould be used to clean our teeth.

2. Observe your classmates and find how they are in the classroom.

- a. Hands and legs are clean or not.
- b. How are their nails?
- c. Head is clean or not.
- d. Body is dirty or clean.
- e. Teeth are clean or not.

After looking at hands, legs, short nails, head, body and teeth, clap to thank students who are clean. Request to your classmates to become clean because they have poor personal hygiene.

EXERCISE



1. Answer the following questions in short:

- How does a body become dirty?
- What happens if body is not clean?
- Write down any two ways to keep our body healthy.
- What objects do we need to keep our body clean?
- Which parts of our body should we clean daily?

2. Match the following:

- | | |
|----------------------|---------------------|
| a. Brush or Dattiwan | a. to wipe the body |
| b. Soap water | b. to comb hair |
| c. Nail cutter | c. to cut nail |
| d. Handkerchief | d. to brush teeth |
| e. Comb | e. to clean body |

Teaching instructions:

Clarify that students should discuss during the activity. Ask a group member to tell orally to the class. If possible, make students practice washing face, hand and brushing teeth practically. Create an environment by making students observe and discuss the pictures in the lesson.

Health Information

Clean your eyes with clean water twice a day and get rid of trachoma. If we keep our teeth clean, we can prevent them from infection of germs.



Lesson 2

Physical exercise rest and clothing



We need physical exercise to keep our body healthy. Different organs of our body get exercise while playing, walking and working. The exercise makes our body strong and energetic. We can exercise either in the morning or in the evening or when we have free time.

Our body gets tired when we study, play and walk for a long time. We should take rest when our body gets tired. Rest or sleep help us to get rid of tiredness. We should sleep about eight hours a day.

Sports, like exercise, also make our body smart. It keeps our digestive system fit and fine and increases appetites. The clothes that we use are also important for our health. Wearing clean and neat clothes prevents us from infection of diseases.

Our clothes are different according to the season. Our clothes for winter should be clean and thick. The clothes that we use while going to bed should also be clean and thick. These clothes protect us from cold.

We can wear thin cotton clothes during summer season. They are light and help our body keep cool. The clothes that we wear according to different seasons help our body keep smart and healthy.



Observe the following pictures and discuss:

Clothes for summer season	Clothes for winter season
	

Activity

Divide yourself in three groups consisting of equal number. The name of groups are 'Rest', 'Exercise', 'Uniform', etc. Now write down your own importance and demonstrate in the class.

2. Read the following statements and tell what you can do.

Statement	What happens ?	What should be done
1. Playing and running	Body sweats out and gives foul smell	Should take bath
2. No regular bathing
3. Wearing thick clothes in summer days
4. No timing for sleeping

3. Make a list of five clothes that we can wear in summer and and we can wear in winter season and present them in the classroom.

Summer wear	Winter wear
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

Teaching instructions:

Activate students while doing activities. Utilize the pictures maximally given in the lesson. Divide students into groups such as exercise, rest and uniform to further clarify about the contents.

EXERCISE



1. Write down short answers:

- a. What is physical exercise?
- b. Why should we do exercise?
- c. How do you take rest when you are tired?
- d. How many hours do you sleep in the evening?
- e. What types of clothes do you wear to prevent yourself from cold?
- f. What should be done to keep our body smart?

1. Tick (✓) the correct and cross (x) the wrong statements:

- a. Exercise should be done to keep our body healthy.
- b. It is good to sleep for longer time.
- c. It is difficult to do work after taking rest.
- d. Light cotton clothes are good for winter season.
- e. Exercises are needed for adults only.

3. Write down any five summer and five winter wear worn in your community.

Wearing in winter	Wearing in summer
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

Lesson 3

Let's keep our house and surrounding clean



Clean house is good and everybody likes it. Everybody's clean house makes our neighbourhood clean. There is clean environment in our clean neighbourhood. There is a lower possibility of communicable diseases if our house and neighbourhood are clean and neat. A clean environment is required for a healthy life. Household garbage should be collected and thrown in a particular place.

Our house and neighbourhood becomes dirty if we throw rubbish here and there. The water collected in pits helps in increasing mosquitoes and germs of other diseases. Dirt pollutes the environment. Put the dirt on a basket or ditch to keep our

house clean. Compost can be made from degradable dirt. Compost manure is the best for vegetables and crops. Non-decayed wastes can be collected separately. A proper management of dirt helps in keeping our house and neighbouring clean.

The house and neighbourhood become clean if we all use toilets. The environment of house and neighbouring gets polluted if toilets are not clean. We have to put water on toilets after we use them. We have to use germs killer and insecticides to clean toilets. We should not throw paper, plastic, a piece of wood and clothes pieces in the toilet. They may block the toilets. We should use longer brush to clean the toilets.

We have to keep sources of water and water tap clean. We should not throw straw, ash, coal, wrapper of soap and shampoo in the surroundings of the tap. The tap becomes dirty and gets polluted if the dirt that comes from bathing and washing clothes is not cleaned. We waste water if we leave the tap running. We must turn off the tap after finishing our task.



Activity

1. Discuss about the pictures given in the lesson in a group. Then, answer the following questions:
 - a. What provisions have been made to keep the house and neighbourhood clean?
 - b. How should we keep the toilets clean?
 - c. Why should we keep the tap and its surroundings clean?
 - d. What are the people in the pictures given in the lesson doing?
2. Discuss the following topics in a group and ask the team leader to tell their causes.

Group A: Any three reasons that cause environmental pollutions.

Group B: Any two measures to keep their surrounding clean.

Group C: Any three disadvantages of dirty house and neighbourhood.

Group D: Any two methods to clean the toilet.

Group E: Any two points that should be kept in mind while using water sources.

Teaching instructions:

Clarify students about the fact that they should discuss while doing activities.

Ask a member of a group to tell orally to the class.

Use both oral and written techniques while doing practice.

Make students write some health messages and past in the classroom.

EXERCISE



1. Answer the following questions in short:

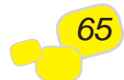
- a. What kind of house and surrounding is liked by all?
- b. How can we keep our house clean?
- c. What are the methods to keep the environment clean?
- d. What should be done to keep your toilet clean?
- e. Why should we not keep our tap dirty?

2 Say whether you agree or disagree with this statement.

- a. I clean my room myself.
- b. I do not help to clean my house.
- c. I do not throw dirty things in the class.
- d. Dirty houses make surrounding dirty.
- e. We should not keep toilets dirty.
- f. We have to keep the environment clean and fresh jointly.
- g. Our house and surrounding must be clean.

Health Information

Let's keep our house and school clean, throw garbage into pit and make the whole environment healthy.



Lesson 4

Sources of food



What food items are given in the following pictures? Observe them and discuss with friends.



We cannot survive without food. We eat a variety of foods. Our main foods are prepared from grains, vegetables and fruits. We get foods like milk and meat from animals.

Cows and buffaloes give us milk. Curd, ghee and butter are made from milk. Milk and ghee are used to make variety of sweets. Ducks and hens lay eggs. The meat of sheep, goat, buffalo, pig, fish and hens are used in our food. We get some foods from animals and some other food from plants. We get meat, milk, eggs, ghee, butter, etc from animals. Similarly, we get grains, vegetables, fruits and pulses from plants. These are grown on farm. The food that we find in our village and community differ according to geographical structure and weather. We have to eat local food items. Fresh and clean food are useful for health. It

is not a good habit to buy and eat readymade food found in the market. These food may be harmful to our health.

We have to eat yellow coloured fruits and green vegetables. We have to eat fruits, green vegetables, mango, papaya, pumpkin, etc from time to time. These foods help us to keep our eyes healthy.

Activity

1. Make a list of food items available in your locality. Also, ask your friends to write down the sources of those foods.

Food items	Sources
1.
2.
3.
4.

2. You get foods from both animals and plants in your home. Draw a table and classify them as obtained from animals and plants.
-

EXERCISE



1. Copy only the correct sentences from the sentences given below:

- a. We have to eat yellow coloured fruits and green vegetables.
- b. Only meat and fish make the eyes healthy.
- c. We get milk from animals.
- d. Mango is obtained from plant.
- e. We get eggs from animals.

2. Answer the following question

- a. What are the sources of our food?
- b. What can be made from milk? Write down any four items.
- c. What types of foods are needed for keeping our eyes healthy?
- d. Junk food found in the market are harmful. Why? Give two reasons.

Health Information

Let's take cereals, pulses and vegetables in our food and have a healthy body

Lesson 5

safe foods



We must eat safe food to be healthy. We have to eat meal in the right time. Overeating causes indigestion. We should not hurry while taking food. We have to chew it slowly. We always have to eat clean and fresh food only. Stale, raw and decayed food cause different types of diseases. So, we have to protect food from flies, cockroach, dust, etc.

For safe food

Green vegetables should be washed before cooking.



Fruits should be washed properly before eating.

Hands should be washed with soap and water before and after meal.



Utensils must be well washed and clean.



Milk should be boiled properly before drinking.

Food should be covered to protect from dust and flies.



We need nutritious food to keep our body strong and healthy. Meat, fish, milk, cereals, pulses, fruits and green vegetables are rich in nutrition. We do not get energy if they are not nutritious. The organs of our body do not grow if there is lack of elements of nutrition in our food.

We have to include all necessary nutrients in our food. There are different nutrients in different types of food. Nutrients obtained from food grow our body, give energy and protect from diseases. So, we have to eat lentil, rice, curry, milk, meat, etc. Our body also needs different types of fruits according to seasons like apple, orange, mango, papaya, guava, banana, etc.

Eating home made fresh food is more useful for our health than eating ready made food found in the market. If we store food for a long time after cooking, the nutrients in it are lost.

Activity

1. What can we do to get safe food? Discuss in a group and present to the class.
2. Make a list of fruit plants found around your school and mention the time when they give fruits. (months/ seasons)

Teaching instructions:

Make students observe the pictures and ask for reactions. Encourage students to write and tell about what students do at home. Tell about safe and healthy food.

EXERCISE



1. Answer the following question

- a. When do we have lean and thin body?
- b. What kind of foods do we need to be healthy and smart?
- c. Why should we have green vegetables and yellow coloured fruits?

2. Distinguish the following statements into true or false.

- a. We get energy from food.
- b. We have to wash our hand and mouth properly before and after eating.
- c. Green vegetables and yellow coloured fruits cause diseases.

Health Information

Let's eat vegetables and raw fruits only after cleaning them.



Lesson 6

Causes and symptoms of diseases



Look at the pictures and talk about them.



Diarrhoea



Measles



Tuberculosis



Polio



Diphtheria



Tetanus

There are different causes of diseases in our body. When we become sick, we do not like to eat and play.

Eating stale, infected and decayed food and drinking dirty water may cause diarrhoea and colitis. The diseases like measles, chickenpox, tuberculosis, polio and diphtheria spread to others through droplets while coughing, sneezing and spreading polluted air.

Dirty body and unhealthy habits also can cause diseases. Our inability to have the full dose of vaccine in a fixed time can also cause diseases. Sometimes insects bite and cause diseases.

Different types of symptoms appear when we suffer from diseases. In the time of diarrhoea there is pain in stomach and frequent release of stool in the form of liquid. In dysentery, mucus with blood is found in stool. A person suffering from polio cannot move hand and legs, may be paralysed. In pneumonia, it is difficult to breathe and there is fever too.

Measles and chickenpox seem similar but they are different. When someone suffers from measles, eyes become red, smaller poxes are seen on the body. Similarly, in chickenpox, red coloured blister are found throughout the body and the body itches.

Some of the diseases are non-communicable. The diseases like blood pressure, cancer and diabetes do not transmit from one person to another. If we do not exercise regularly and become careless on food habits, then we may suffer from these diseases. Diarrhoea, measles, chickenpox, diphtheria etc transmit from one person to another.

In heart disease, there is pain in heart, up and down in blood pressure and feeling of weakness. In diabetes, the patient feels frequent urination and weak. However, these diseases do not transmit from one person to another person. Asthma, Goitre and Arthritis are also non-communicable diseases.

Teaching instructions:

Make students act about different techniques of the transmission of communicable diseases. Prepare a poster that clearly indicates symptoms of diseases. Make students discuss about the pictures given in the textbook. Make students prepare a table with the names of diseases and their symptoms.

Activity

1. Name the disease based on the following symptoms. Find out by discussing with your friends and write them in your exercise books:
 - a. Rash all over the body and irritation.
 - b. frequent loss of water from body and weal.
 - c. Stool with mucus and blood stains.
 - d. Leg becomes weak, skinny and bowed, paralysis may occur.
 - e. Difficult to breathe with ghyar-ghyar sound.
2. Draw a separate picture of different people suffering from different diseases and paste to the wall of the classroom.
3. Conduct a quiz contest in the class among different groups based on symptoms and diseases or diseases and symptoms.
4. Ask your classmates about disease that they are suffering from. If yes, name the disease.

EXERCISE



1. **Answer the following questions:**
 - a. Explain two causes of diseases.
 - b. Mention any two symptoms of chickenpox.
 - c. Mention any two symptoms of dysentery.
 - d. What are the causes of measles?
 - e. What are the two symptoms of heart disease?

2. Match the following:

Dysentry	up and down in blood pressure
Measles	mucus with blood
Heart disease	non-communicable
Asthma	eyes become red
Diabetes	polluted air

Health Information

Dirty water causes diarrhoea, dysentery and cholera. So, let's always drink clean and boiled water and be safe from communicable diseases.

Lesson 7

Prevention and treatment of diseases



We have to be careful when we are not feeling well. We have to go for treatment in time if we are suffering from diseases. To increase our internal energy, we have to take vaccines. To prevent our body from tuberculosis, we need to take BCG vaccine. DPT vaccine is given to children to fight against tetanus,



diphtheria and whooping cough. Similarly, to protect from polio, polio drop is given to children. We should not delay in taking vaccines. BCG and measles vaccines are given only once, polio and DPT vaccines are given thrice and T.T. is given five times to the children.

If we are suffering from diseases, we have to visit health centres. If we are sick, we have to use medicine and follow instructions given by the doctors. In the village, people visit faith healers if they are sick. Faith healer is not a doctor. To treat diseases, we have to advise others to go to health centres. In the village, there are sub-health post, health post or health centres. There are hospitals, nursing homes and clinics in big cities and towns.

Teaching instructions:

Divide students into groups and make them act of a person who is suffering from a particular disease or a patient who is being brought to hospital for treatment. Ask students some questions individually. For example, what are the institutions that provide

health services in the villages and towns. Make students write and read about a time table of vaccination and measures that we need to take to prevent ourselves from different diseases.

Activity

1. Divide yourself into groups of doctors and patients and play their roles in the class.
2. Complete the following table and demonstrate in the class:

Name of vaccines	Time to be given
1. DPT	three times
2.	
3.	

EXERCISE



1. Answer the following questions:

- a. Which vaccine is taken to protect our body from tetanus?
- b. Which vaccine is taken against polio?
- c. Where do you go for health check up if you are sick?
- d. Which vaccines have you taken? Ask your parents and write down.

2. Match the following:

- | | |
|----------------------|---------------------------|
| a. BCG | Tetanus |
| b. DPT | Tuberculosis |
| c. TT | Whooping cough/diphtheria |
| d. Polio and vaccine | Diarrhoea |
| | Paralysis |

3. Separate true or false statements. If they are false, write down them correctly.

- a. We have to visit Dhami if we are sick.
- b. Medicines are kept in health centres.
- c. DPT vaccine is given against Tuberculosis.
- d. Late treatment is better for sick people.
- e. Polio drop is is taken orally.

Health Information

Fever is a symptom of a disease. Let's go to health centre immediately when this symptom appears.

Lesson 8

Causes of accident



Let's play sports only on a clean and plain ground.

An accident may occur due to various reason. Most of the accidents take place while crossing the road, getting on and off the vehicles and working with tools. Some accidents happen due to our own negligence.

There is danger of road accidents even in big cities and towns. People, vehicles and motorbikes are increasing day by day in cities and towns. If we walk following traffic rules, we can protect ourselves from accidents. We can protect ourselves from accidents when we follow the measures of security.



“Let’s use Zebra Crossing while crossing the road”.

In the village, we walk through forests, streams and steepy paths when we go to or come back from school. If we do not become careful while walking, we may fall down or injured. An accident also occurs when we fall from a tree. The service of doctor and health centre may not be available when we encounter an accident. We have to treat a wounded person using first aid to prevent his/her situation from getting worse. First aid is a treatment given to people immediately when we cannot bring them to hospital on time. Such a service can be provided by people who have skills of first aid. Dettol and bandage can be used to cure small wounds or injuries at home. It is first aid. We have to bring people to hospital only after stopping the bleeding.



We can save life of injured people by providing first aid. It is useful for all to have knowledge and skills of the first aid. The provision of the first aid should be made in order to stop the situation of a wounded person from getting worse.

Activity

1. Look at the pictures below. Are these activities safe or danger? Give reason.





2. What should you do when your friend gets injured in front of your eyes? Write down a list of your help tips in your copy.

EXERCISE



Exercise 1

- How does an accident take place?
- What should be done to avoid accidents?
- How do you cure minor hurt in your house?
- What do you mean by first-aid?
- What should be done to injured person after first-aid?

2. Match the following:

- | | |
|------------------|---------------------------------------|
| a. Hospital | to avoid accident on road. |
| b. First-aid | should be clean and safe. |
| c. Play ground | where people are cured |
| d. Traffic rules | facility of transportation |
| e. City and Town | person getting hurt |
| | immediate treatment given to injured. |

Health Information

Let us stay away from sharp tools, fire and electricity to avoid from accidents.

Lesson 9

Health Service



We may become sick due to different reasons. We have to cure when we become sick. We get recovered soon after treatment. There are institutions that provide health services to people in the village and towns. They treat diseases and provide advices about health services. They also conduct programs relating to vaccines. They also treat people who encountered accidents. We have to go to places where we can treat diseases and can get advice about health services. We have to suggest our family members





and the people of villages to visit the doctors and get proper treatment. We have to care and love sick people. When we are sick, we should not delay to take medicine and instructions of doctors.

We have to take different vaccines in different time interval to prevent diseases. We can prevent diseases if we frequently go to hospitals to check up our health. Such vaccines are given at sub-health post, health centres and hospitals.

Health institutions provide health services to people. We have to fully utilize services provided by them. We have to follow advice of doctors and health workers. A healthy body does not suffer from diseases. A healthy life is always happy.

Ask your classmates what vaccines are given to their brothers and sisters. Also, pay attention to place and date in the following table:

Name of Student	Vaccine	Times	Year	Place
a. Ramhari	BCG	TWO	2064	Health Post
b.
c.
d.
d.
e.

Teaching instructions:

Introduce about health service providers such as health posts, sub-health posts and hospitals etc.

Explain to students about different services such as treatment service, emergency service, vaccination service, child health service, family planning, maternity service etc. provided by health centres

Activity

Ask your parents about the health services provided by health institutions in your locality and make a list.

1. Answer the following questions in short:

EXERCISE



- a) Why are health services necessary?
- b) Vaccines are given to children. Why?
- c) What are the health services given by health institutions?
- d) Name any two health services provided by health institutions.

2. Fill in the blanks:

- a. An institution that provides health services is called
- b. should be given in time to prevent from diseases.
- c. Disease germs generally cannot attack body.
- d. advise patients at health centres.

Health Information

We have to feed cereals, maize like crops, pulses, green vegetables and yellow coloured fruits to our children after the age of six months.

Lesson 10

Smoking



An act of taking tobacco or a cigarette or Khaini or Bidi is called smoking. Smoking is injurious to health.

One of the harmful chemical objects found in tobacco is nicotine. Its effect is not seen immediately. It shows its effect slowly on lungs and throat. Smoking may cause the cancer of lungs and throat. It also causes heart disease. We should not smoke because it is injurious to health. Even we do not have to make friends who smoke. We should not take up smoking even if we see adults smoking. Smoking not only affects smokers but also others who live with them.



Smoking can become a habit when we smoke one or two times copying others or compelled by someone else. It is very difficult to avoid the habit of smoking. People who smoke have bad smell. Similarly, teeth, lip tongue and skin are seen black. During cough they may have pain in chest. In long term, they may suffer from heart disease and may have problems on respiratory system.

If someone smokes in our house, we have to help in quitting this habit. We have to advise them. If we know that they take cigarette, Khaini and Bidi, we have to advise not to smoke. If they do not quit, we should tell teachers or guardians to convince them. Even friends can give pressure to quit smoking habit of their colleagues. Because of this, a smoker is forced to quit

smoking. We should not copy our parents when we see them smoking. We have to tell them about negative effects of smoking. We have to spread awareness in the community that smoking is injurious to health. We should advise smokers to quit it. It destroys both health and wealth.

Activity

1. Study the case given below and tell the negative effects of smoking:

You went to a friend's house. Your friend's mother smoked. You knew that even your friend used to smoke in the interval of one hour.

Make list of bad effects of smoking and tell your friend.

2. You have known that smoking is injurious to health. Prepare sample posters to raise awareness among friends, family and neighbours about the effects of smoking.
3. Make a table of people you have recognized to find out types of smoking (tobacco, Khaini, Bidi, Cigarette, etc.)

EXERCISE



1. Answer the following questions and show your teacher:

- (a) What is smoking?
- (b) Which element harms the body of a smoker?
- (c) What are the problems seen on their body ?
- (d) Write down any three diseases caused by smoking.

2. Fill in the blanks with the suitable words:

Nicotine

tobacco

near

forces

copy

give up

- (a) is used in cigarette.
- (b) It is not good to the smoking by small children by seeing others.
- (c) The harmful substance found in tobacco is
- (d) Smoking is injurious to health of the person who is smoking and it affects the health of other people who are living him/her.
- (e) When any form of tobacco is used for long time, it is difficult to
- (f) Never involved in smoking, though someone you.

Health Information

Let us not smoke. It takes our life

Section 3: Physical Education

Lesson 1

Locomotor Skills



Walking, running, jumping and throwing

Walking, running, jumping and throwing are skills of motion. Changing from one place to another is called motion games.

Warm-up games

I try to walk sitting on a line. First I step on a part of ankle and then on foot. I can run left and right, back and front freely. I can run in a curved way like a snake too. Now let's do these activities together.

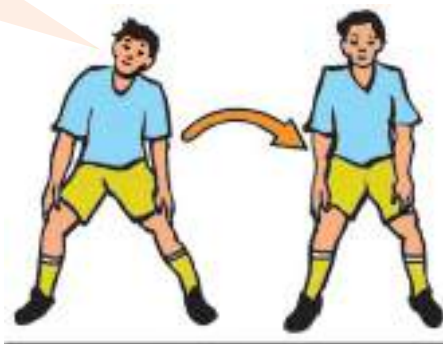
Let's run in a circular path for three minutes.



Now, lift the legs upto knee.

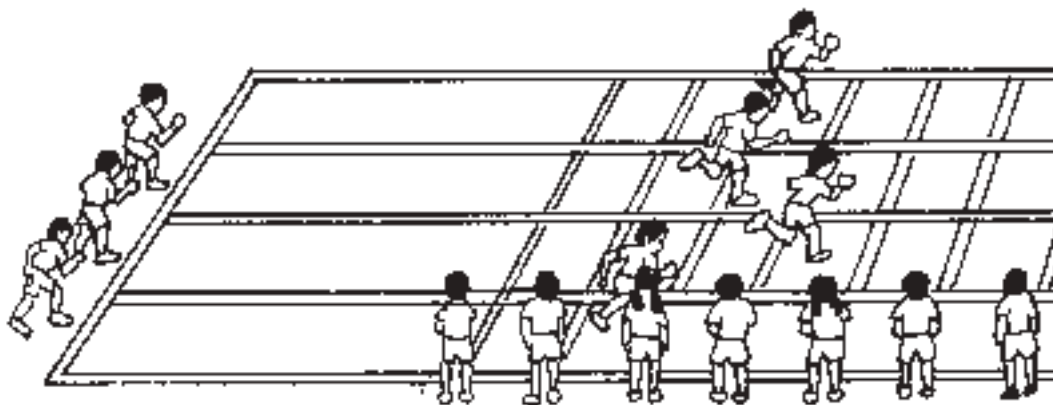


Now, round in a circle to the right hand side. This should be once clockwise and once anti clockwise.



Running

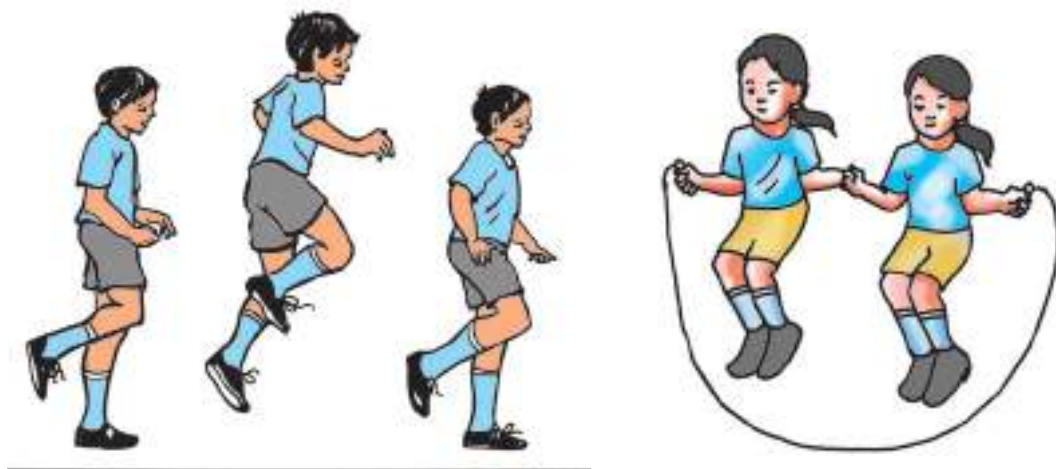
I can run 30 m distance with my friend. I practice it daily for better performance. Now let's run together as per teacher's instructions:



Hopping/skipping

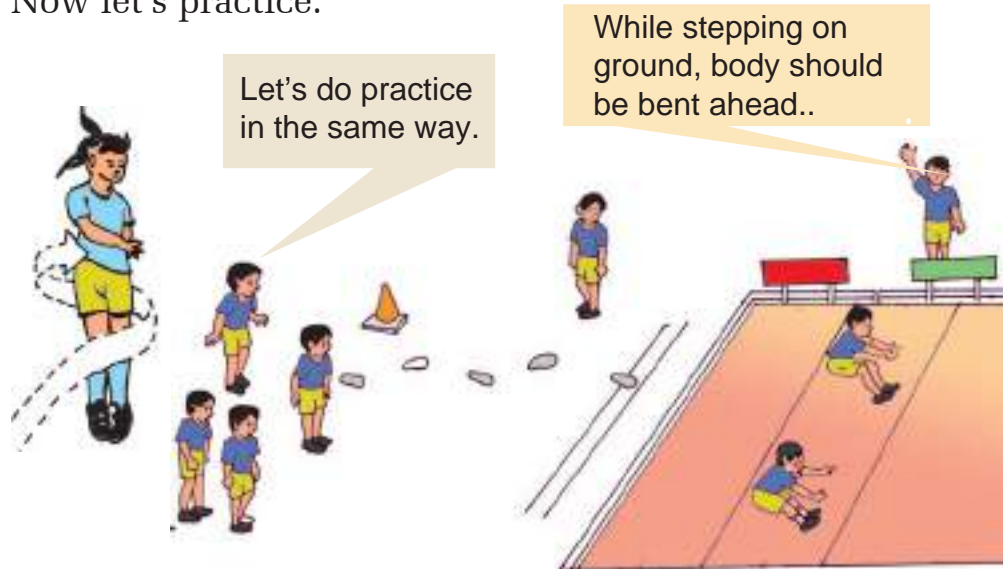
I can go away with one foot by hopping. While hopping, I use the same foot to jump and step on the ground. I can skip too.

Now let's do practice.

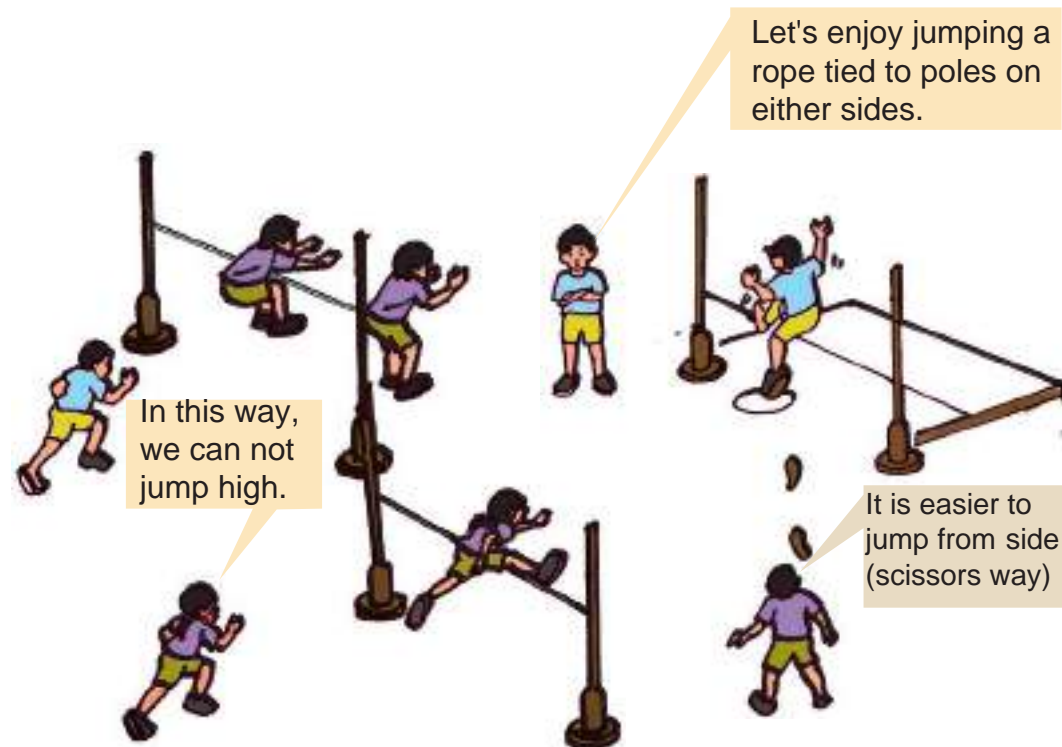


Jumping

I can jump in air. I can do long jump after running. I stand in a queue with my friends and go for jumping when my turn comes. Now let's practice.



I can jump upto a half metre.



I catch the rope to help my friends jump.

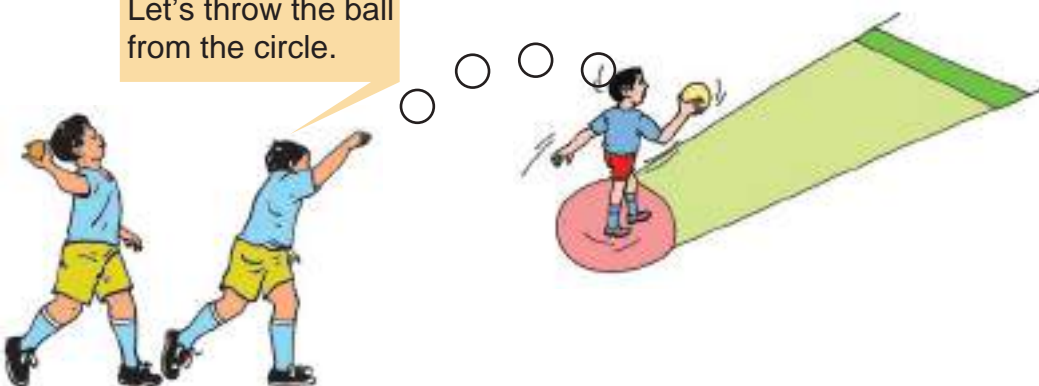
All friends can play together in this way, can't they?



Throwing

I can hit the target at a distance with a ball.

Let's throw the ball from the circle.



Lesson 2

Non locomotr skills

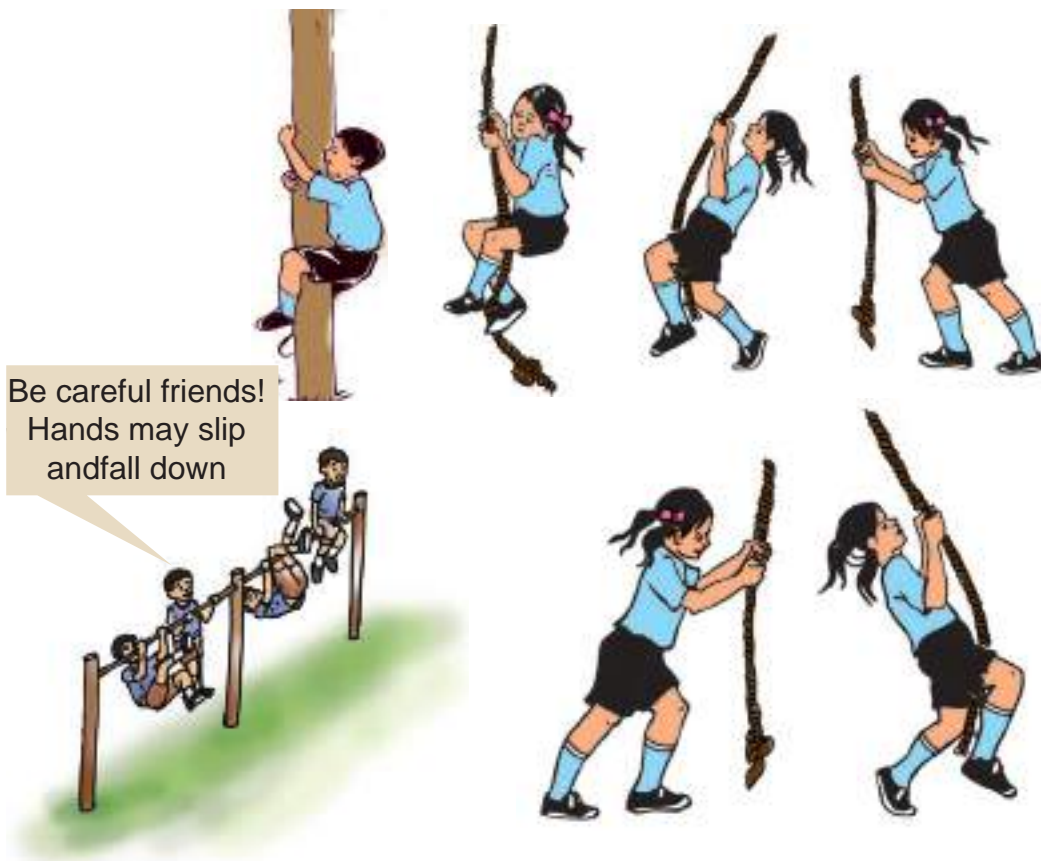


Exercises of different positions

Exercises that we do in the same place or without changing the position is are called exercise at rest.

Hanging, swinging and climbing activities

I can climb on and down the pole. I can also climb on a thick rope.



Physical exercise to be done differently

I can do different exercises by sitting, skipping, standing and bending the body. These exercises make our body smart. These exercises help in playing other games.

Let's do this exercise for 8 times.



Exercises by sitting

Raise your right and left legs one by one for 8 times



Raising one leg exercise



Now raise both legs at the same time for 8 times.



Raising both legs exercise

Friends, it is left leg and right hand.



Exercise by stepping one leg and one hand one by one



Exercise by keeping hands back in supine position



Exercise by raising both hands in supine position



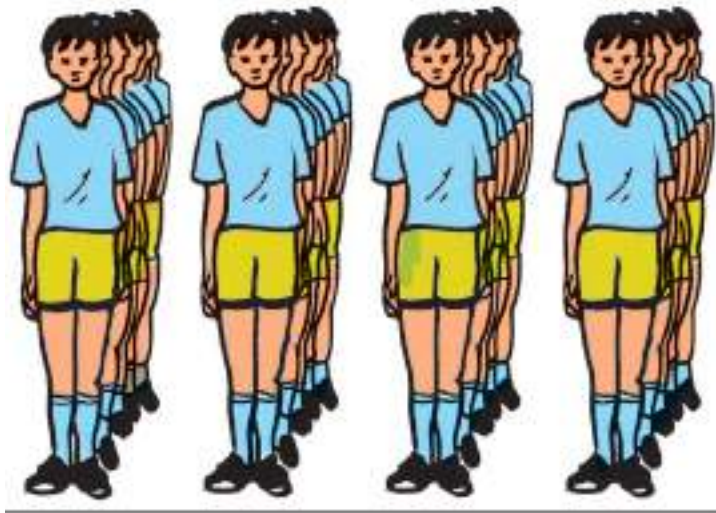
Lesson 3

Drill



We can drill in a group with friends. We do all activities of drill by following instructions. A teacher gives instructions and we do tasks according to his/her command. We play drill standing in a row or a line. We have to stand in a line properly while playing drill.

Standing in a line activity (front to back)

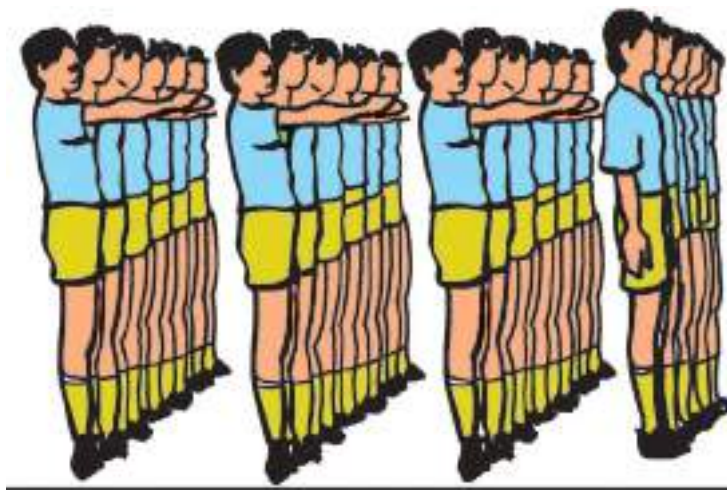


We stand in a line one after another. There has to be equal distance between friends while standing in a line.

Standing in a row (left to right)

While standing in a row, a friend standing right hand side is a leader. After that, remaining friends touch each other's shoulder by stretching their hands. While standing in rows, we add students from left hand side.

Stand at ease, attention and halt (drill) activity



In drill, we do the activities of attention and stand at ease before standing. A teacher gives instructions 'halt' when s/he wants to give further instructions or to come to rest.

Do not move and speak at attention and stand at ease.



attention

stand at ease

halt

Lesson 4

Physical Exercise



Physical exercise is equally important for all people of different age groups. If we do exercise daily, our body becomes healthy and smart resulting in strong organs of the body. It is more enjoyable while doing exercise in a group of friends. We will practice some physical exercises:

1. Exercise of hands



2. Exercise of hands and legs



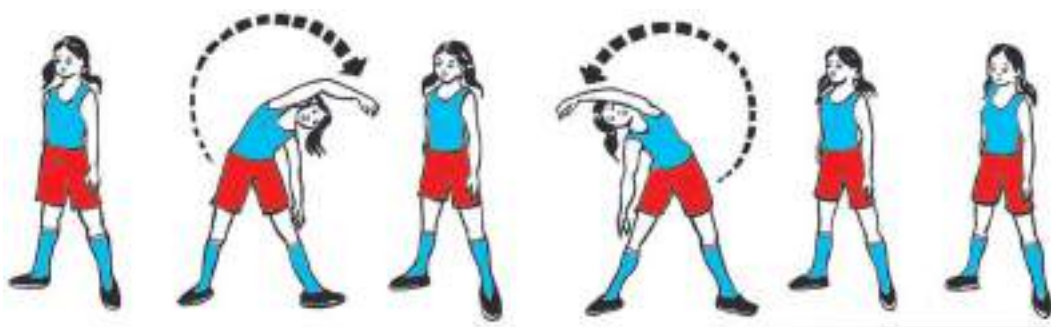
3. Exercise of shoulder.



4. Exercise of hands and chest.



5. Exercise of hands and waist.



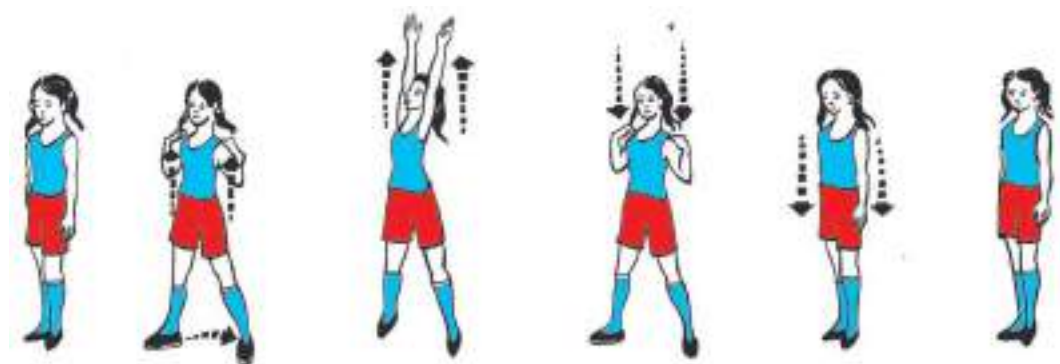
6. Exercise of waist.



7. Body rounding exercise



8. Body stretching exercise



Position : Attention

Counting 1 : Stretch the left leg and put both hands on the shoulders.

Counting 2 : Lift the ankle (heel) and bring both hands upward.

Counting 3 : Bring both hands down on the shoulders as given in counting 2 and step with heel.

Counting 4 : Come in the position of the very beginning.

Counting 5-15 : Repeat all countings again by stretching the right leg.

Counting 16 : Come in the position of attention

9) Physical exercise by bending body.



Position : Attention

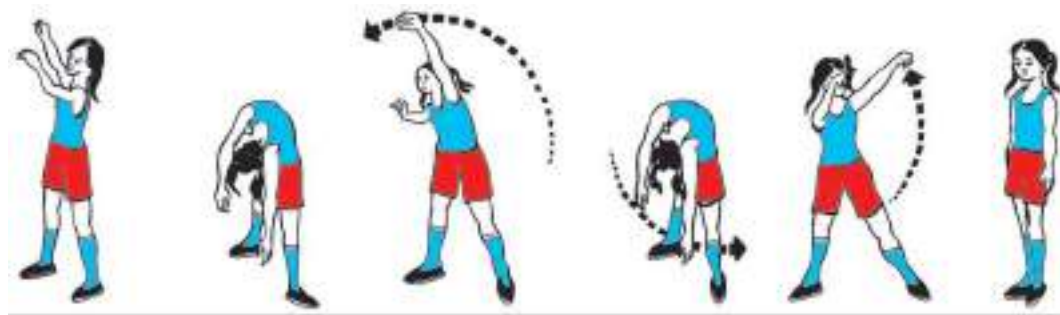
Counting 1 and 2 : Stretch the left leg towards left side, bend your body forward and try to touch the left leg with your hands.

Counting 3 and 4 : Bring your hands backward down and bend the body in the same direction.

Counting 5 and 6 : Repeat the countings by stretching the right leg.

After counting 16, raise both hands upward right hand side.

10. Physical exercises by rounding upper parts of body



Initial position : Stretch both legs and raise both hands up towards right hand sides.

Counting 1 to 4 : Bend forward, move upper parts of body from right to left to complete one rotation. Again raise both hands up towards left hand side.

Counting 5 to 8 : Round upper parts of body from left to right hand side.

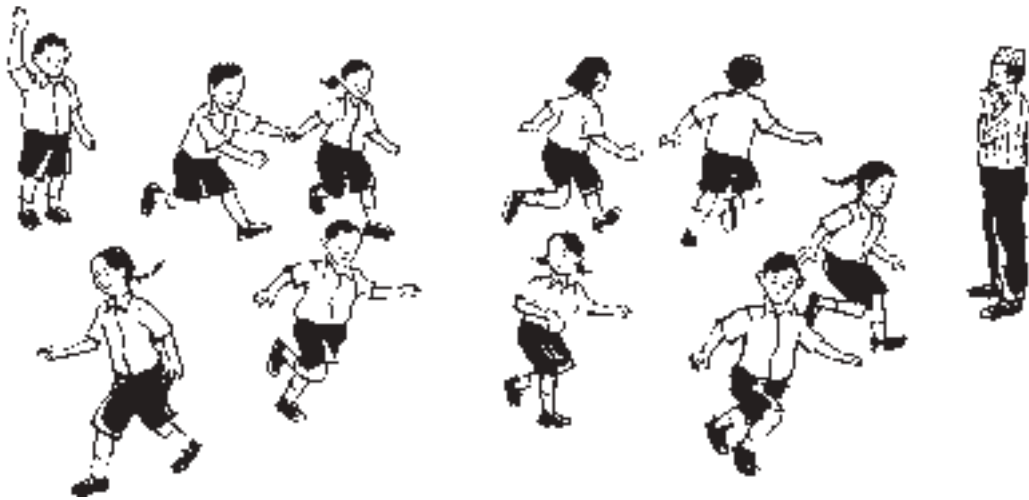
After counting 16, come in attention.

Lesson 5

minor Games



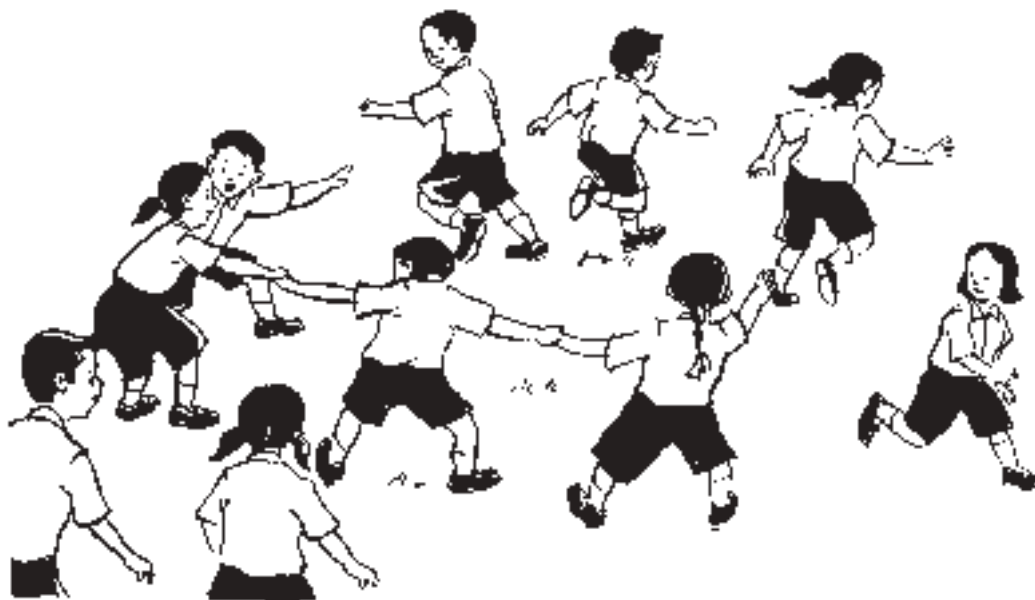
We can play minor games easily in a short time. We can play common games in different ways. Out of many common games, we will practise chasing by catching hands.



Pair chasing

In the beginning, form a pair. Rest of the players should disperse on the ground. A pair should chase as soon as it obtains the signal from a teacher. When chaser touch them, they should stand in one corner of the ground with raise hand. When the first pair touches students, another pair is formed to chase other students. In this way, the number of pairs increases and a student who finally remains untouched is declared as a winner.

Chain chasing



In the beginning, two students form a chain by catching each other's hands. Two students chase other students. Whoever is touched should join the chain and should start chasing other remaining students. One who remains untouched at the end should be declared the winner.

Lesson 6

Local Games



Games played, according to a particular place, at local level are called local games. We play local games in different ways. We play local games with our friends. We are proud of local games. The names of some famous local games are given below:

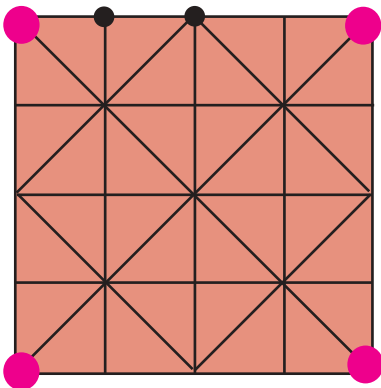
a) Gotta



b) Ghhyainkasa



c) Bagha chal



d) Chungi khel



e) **Dandi biyo**

Dandi biyo is Nepal's ancient game. It is played between two groups. Let's learn about together.

Practice for making score (Thyak lagaune)

Thyak lagaune is a skill of Dandi Biyo game. This is either played between two persons or between two groups. A sense of collective feeling is developed while playing in a group.

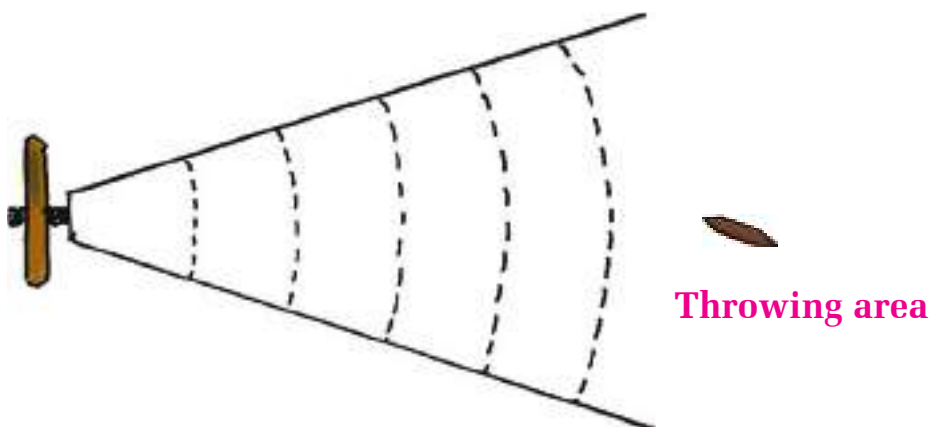
One makes 500 scores, that will be the winner.



Practice of throwing biyo

Let's toss for throwing biyo and catch it. One from throwing biyo group throws biyo and students of catching biyo group disperse on the ground to catch the biyo.

Dandi biyo Ghar



General rules for throwing biyo

If the thrown biyo is caught by an opponent group, score will not be given. If it is not caught and falls in a place, the biyo should be thrown to hit dandi in dandi biyo ghar from that place.

If thrown biyo hits the dandi, the turn goes to next group.

If biyo does not hit the dandi, the distance between biyo and dandi is measured with the help of dandi and the scores are noted down.

The group which can make predetermined scores earlier will be the winner of the game.

Lesson 7

Imitating games



We can imitate and act peoples' or animals' work and sounds as they do. These games can be very interesting for children like us. We feel shy and cannot speak without hesitation. We can overcome these habits when we act different aspects of peoples' and animals' life. We will imitate jumping of different animals here.

a) Rabbit jumping



(b) Frog jumping



(c) Kid jumping



(d) Cat walking



Lesson 8

Story Games



Some games are based on stories. We play them by acting. Such games are called story games. We imitate activities and reactions of different characters from the stories. I am very much interested in acting story games. We will do telling and doing practice of story games here.

Read the following story and play the game:

Activity 1

1. A rat ran here and there doing 'chin' chin. In the mean time, a cat appeared there doing 'Myawn' 'Myawn'. Rat got afraid and stopped making the noise.

Activity 2

2. Mother was drying clothes in the sun. Sister Sajani was washing clothes in a tap near the house. Sannani was cutting grass on the farm. Meanwhile, a jackle produced a sound of huinya ss... huinya ss.... Sannani and Sajani were comking back home when they heard the noise. On the way, they ran towards their mother when they heard mother's crying for help.....

Activity 3

3. Ram Pyari was washing clothes near a well. She pulled water from the well in a bucket. She poured water slowly into a pot. She washed clothes and put in the sun to dry.



Lesson 9

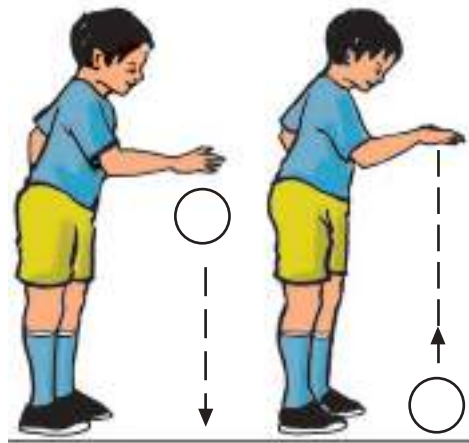
I can bounce the ball



There are different types of balls. Balls filled with air can jump higher. Playing a ball by throwing, bouncing and catching is enjoyable. We will learn different ways of bouncing a ball on the ground here.

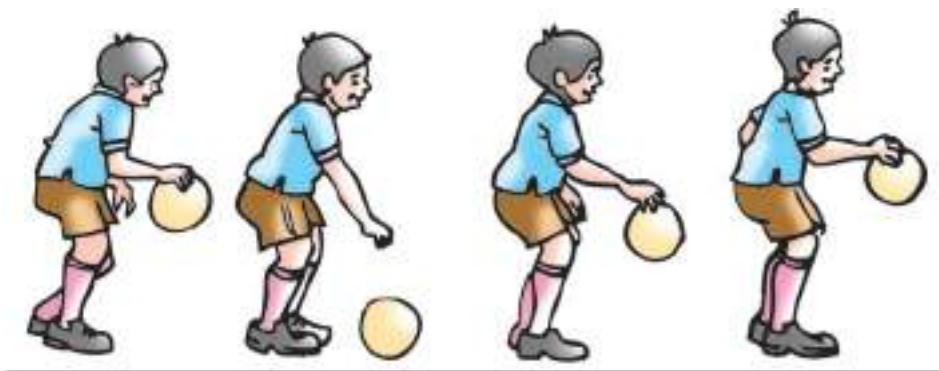
Activity 1

Let's hit the ball on the ground by using two hands as shown in the pictures. Do this practice for at least ten times.



Activity 2

We can dribble the ball on the ground by using one hand.



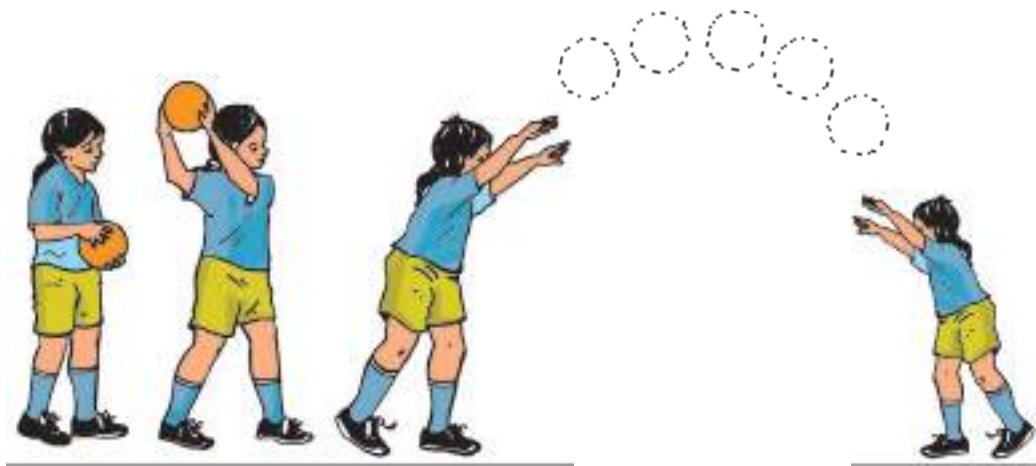
As shown in the picture, let's hit the ball downward with a hand slowly.

When ball returns upward after touching the ground, we have to push downward with the same hand.

Do this practice for at least ten times.

Activity 3

We can pass the ball to our friends by different ways.



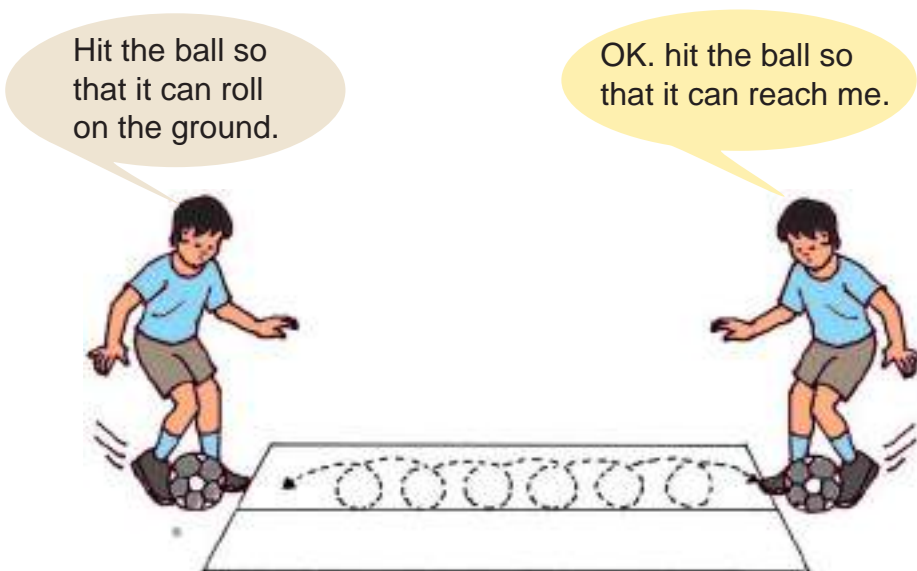
I pass the ball straight.
You pass the ball from
downward. OK

A friend who touches
the ball in the middle
should sit there. OK



Ball pass with a leg

We pass the ball to a friend by hitting it with a leg. Stopping the passed ball we pass it to each other.



Read and play

- Hit a ball on the ground in a circular boundary and try to catch and give the turn to your friend. Make a round in circular path and again sit in your own place.
- Sit in a line with all friends. Start the turn from first student and bounce the ball on the ground unless it crosses the boundary. Then pass the ball to your friend and come back to sit in your own place.
- Make a circular boundary and complete a rotation by dribbling the ball. Pass the ball to a friend and sit in your own place.
- Let all friends sit around circular boundary and send one friend at the centre and hit him after bouncing the ball. Tell your friend at centre not to be touched by a bounced ball.
- Practice to throw, catch and bounce the ball in a paired group. Let two friends stand opposite each other and pass the ball with changing your place and make a complete rotation.

Lesson 10

Gymnastic

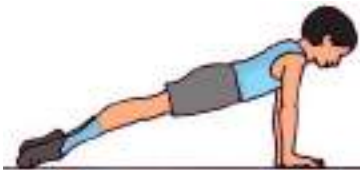


Gymnastic develops flexibility in the body. The exercises that we do during gymnastics balance our body. We will do different types of exercises here.

Activity 1

Balance of hands

For the balance of hands push up should be done 8 times. 1,2.....



Push ups

After over stooping a friend, I will also sit in this way at the end.

Activity 2

Stretching legs

Chest should touch the ground by stretching legs.



Activity 3

Balance of body

I swing 8 times with the right leg and 8 times with the left.



Activity 4

Half-hand stand



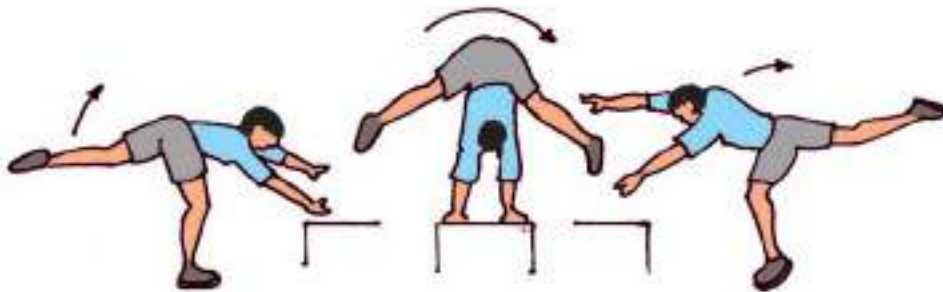
When you do this, hands become stronger but legs should be stretched. Ok



Activity 5

Box cartwheel

When you do box cart-wheel from above the box, do it from a lower height in the beginning.



Activity 6

Cartwheel

After these exercises, it is easy to do cartwheel. In cartwheel, first we bend towards left side and step on the ground with left hand. Then, we step with right hand as standing down and right and left legs are used to step on the ground.



Lesson 11

Balancing the body



Body holding capacity in difficult condition is called balancing. We have to practice to develop skills of balancing. We can balance our body focusing on this activity.

Activity 1

Balance on plank



Let's practice to walk in this way.

Activity 2

Balance on ladder (step)

Before this, we have to balance our body to walk on a wooden plank. If we are perfect on plank, then we can start to balance our body on ladder.



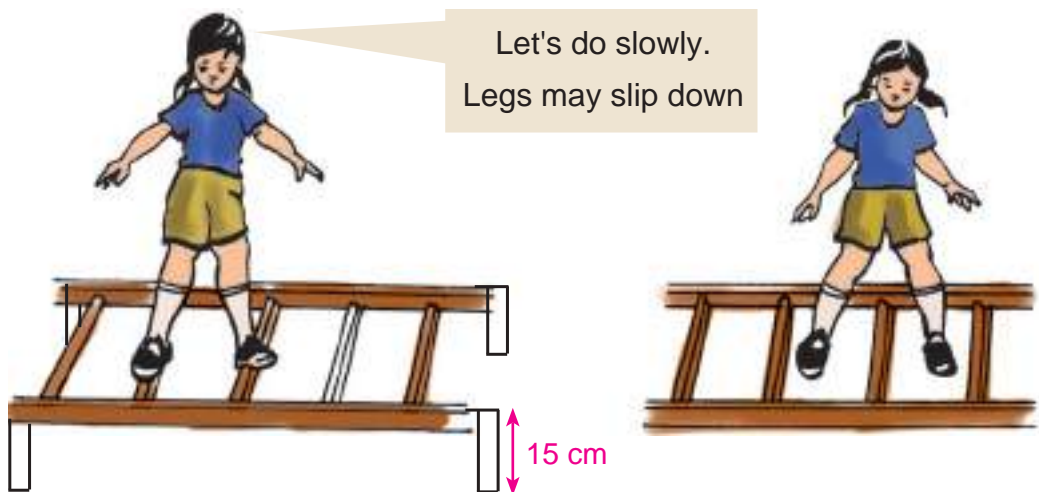
Stepping on ladder

Walking on ladder

15 cm



Stepping on blank ground



Walking on ladder from sideways.

Walking on the ground from sideways

Activity 3

Balance on rope



Teaching instructions:

Be careful while doing activities otherwise there is more chance of accident. Do other types of activities in presence of teachers.