

## **APPENDIX**

### **LIST OF CONTENT**

- 1. List of Abbreviations**
- 2. Appendix 1 Intervention Programme and Unit test with Answer Keys**
- 3. Appendix 2 Information Schedule**
- 4. Appendix 3 Semistructured Interview Schedule for Students**
- 5. Appendix 4 Semistructured Interview Schedule for Teachers**
- 6. Appendix 5 Scores in the Pre test and Post test in 8 tests**

### **LIST OF ABBREVIATIONS**

**&-And**

**A- answer**

**a1 - activity pre test scores**

**a2- activity post test scores**

**BJGVJ - Bharat Jan Gyan Vigyan Jatha.**

**CBSE- Central Board of Secondary Education**

**DPEP- District Primary Education Programme**

**ECCE- Early Childhood Care and Education.**

**MAB - Man and Biosphere**

**MACESE- Maulana Azad Centre for Elementary and Social Education**

**NER- National Enrolment Rate**

**NGO's- Non Governmental Organisations**

**No. - Number**

**NPE- National Policy on Education**

**o1 - oral test pre-test scores**

**o2- oral post test scores**

**S.D - Standard deviation**

**S.Em - Standard Error of Mean**

**T.V- television**

**t1- total of all the three pre test scores**

**t2- total of all the three post test scores**

**UEE- Universal Elementary Education**

**UNEP - United Nations Environment Programme**

**UNESCO- United Nations Educational and Cultural Organisation**

**w1 - written pre-test scores**

**w2- written post test scores**

**X - Mean**

## **APPENDIX NO. 1**

### **Unit I Living and Nonliving Things**

#### **Instructional Objectives:-**

1. Students will be able to differentiate the world around them into two parts animate and inanimate.
2. Students will be able to describe that living beings breath.
3. Students will be able to state that non living cannot move.
4. Students will be able to state that nonliving things neither take water nor they eat.
5. Students will be able to illustrate that nonliving cannot move.
6. Students will be able to experiment and explain that plants are living beings.

#### **Script:-**

**30- minutes**

Teacher:- Good Morning Children!

Students:- Good Morning Madam!

Teacher :- Students which are the things that you see around you?

Students:- Teacher, we can see number of things like pencil, compass, notebook, book, bench, table, chair, duster, chalk, our friends, you, blackboard, scale, sharpener, birds, tree, glass and our school bags.

Teacher:- Right! can you divide these things which you have mentioned into two different categories?

Students:- Yes miss, boys, girls you and birds are living and rest of the things are nonliving.

Teacher:- Okay, But how can you say that boys, girls, birds and myself are living?

Students:- Because we have life and other things do not have life.

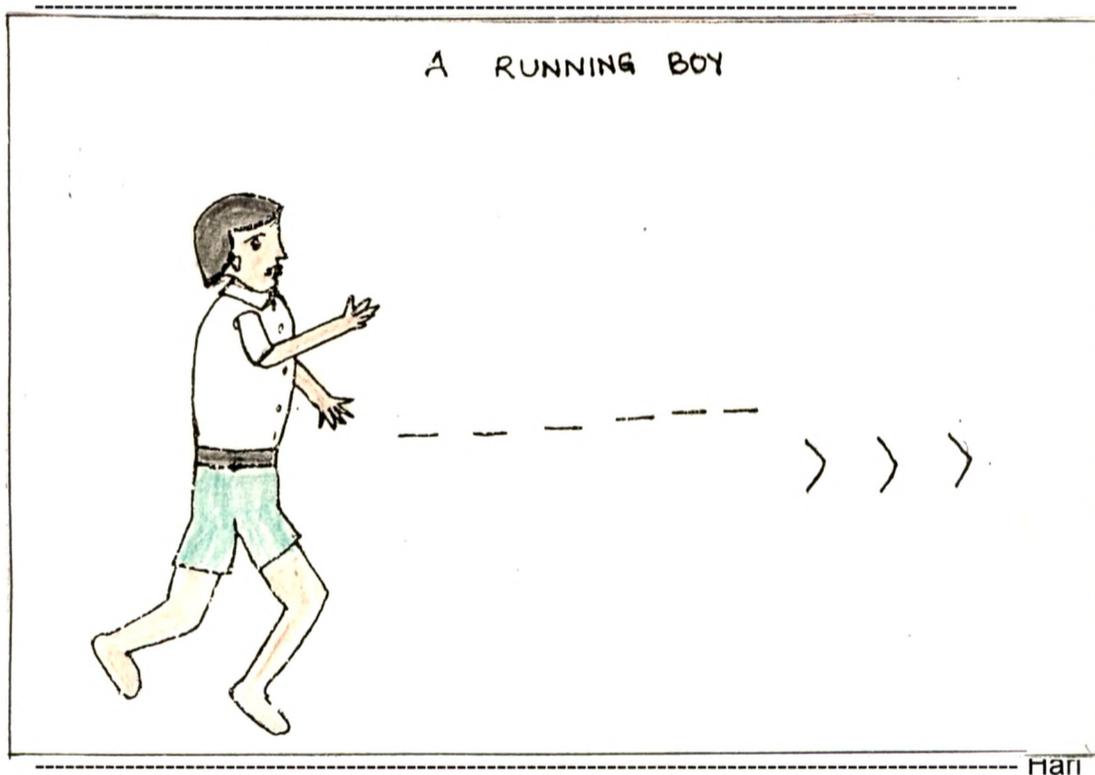
Teacher:- That's right. But a question arises, what are non living things?

Students:- The things that don't possess life are nonliving.

Teachers:- Good!

[ calls a student and asks him to get chalk stick, " Go fast and come back fast" when the student came back, he was breathing very fast. ]

**Figure 1.1 Living beings Breath**



goes running and comes back running

Teacher demonstrates breathing pattern.

Teacher:- Look here children, Hari is breathing so fast. All of us respire i.e. all of us inhale air and all of us exhale air. Come-on let us see how we inhale and how we exhale?

Keep one finger near your nose, take a deep breath and then push the inhaled air out side. This process is known as breathing .

**Figure 1.2 How do we Breath?**

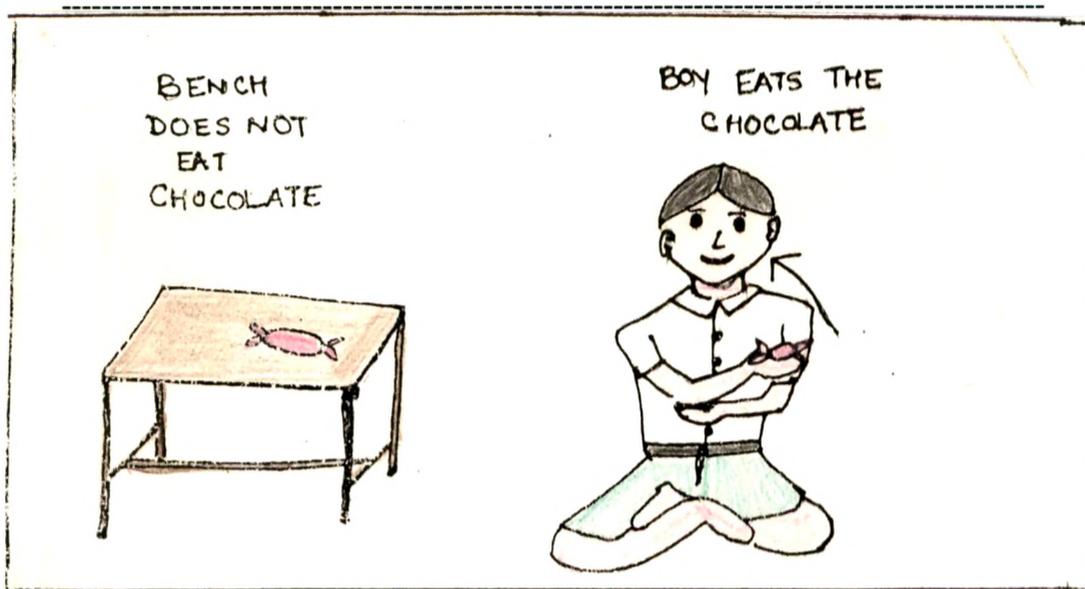


So, look here all of us are living beings and all of us breath. Therefore, we generalise that all living beings breath. Is that true ?

Students: Yes, miss.

(Teacher writes the first characteristic of living being on black board)

**Figure 1.3 Living beings eat Food.**



I am giving a chocolate to this bench and to this boy.

Student:- Miss, Rahul is eating the chocolate .

(Teacher gives chocolates to all the children and asks.)

Teacher:- You all ate away your chocolates but did the bench eat?.

Students :- No.

Teacher :-What can you say from this ?

Students :- Living beings eat food.

Teacher:- Why do we eat food? What is the need?

Students:- We eat food to grow into strong and big people.

Teacher:- That's right. What can we say from this?

Students:- All living beings need food to grow and therefore they eat. ( Mehul:-

Teacher may I go and drink water?)

Teacher:- Yes Mehul! Children, Mehul wants to drink water. Have you ever seen your desk seeking permission to go and drink water? Why?

Students:- No miss. Because desk is nonliving. Therefore it does not need water to drink.

Teacher:- Good! Now tell me a character of living being from above incident.

Student:- All living beings need water. They cannot live without water.

(Mehul comes back to the class)

Teacher:- Good! Children, did you notice, Hari came running and Mehul walked into the classroom, can your pencil, pen or school do that?

Students:- (start laughing) No miss, that's not possible as they are nonliving and they cannot move from one place to another.

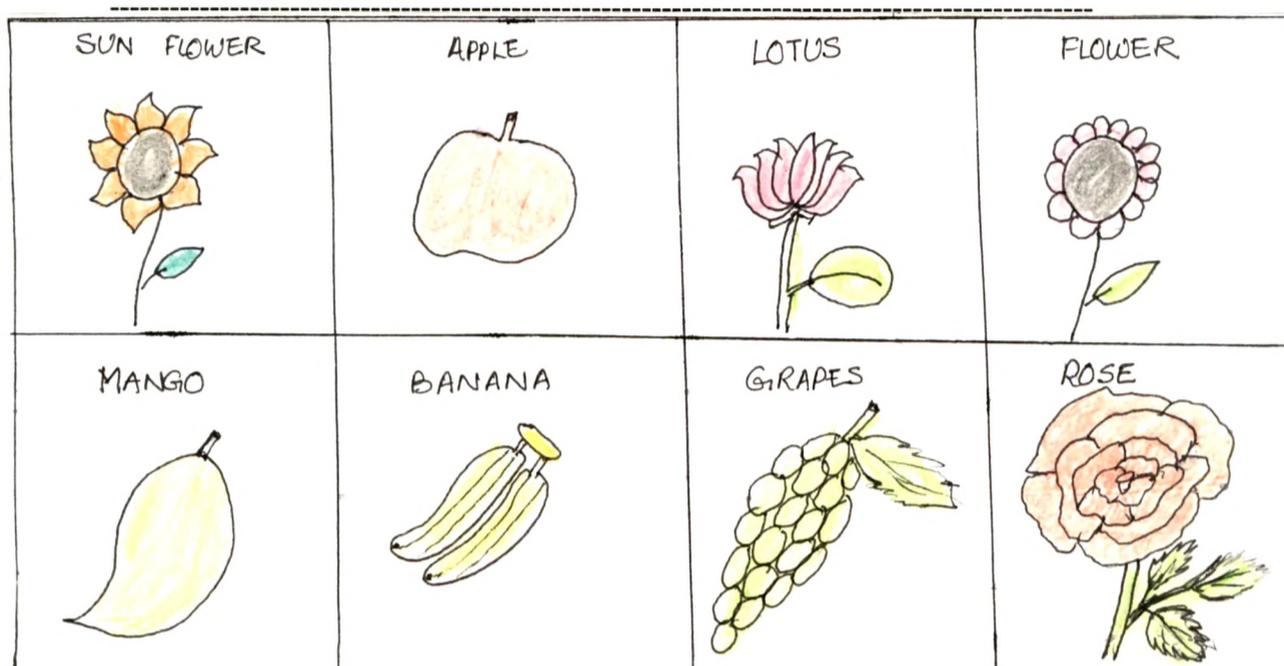
Teacher:- Very good! So today we have seen some characters of living things.

Write all these characteristics in your note books.

Teacher:- Have you finished writing?

Students: Yes miss.

**Figure 1.4 Pictures of Living Things**



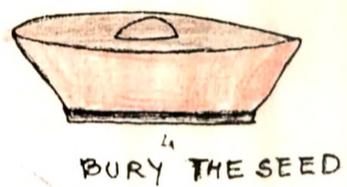
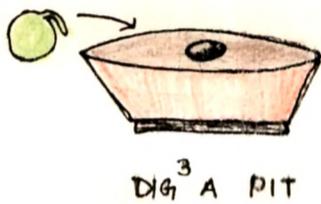
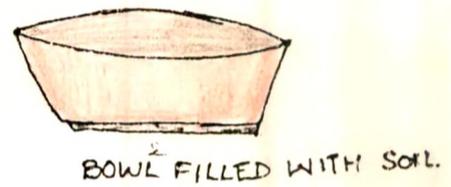
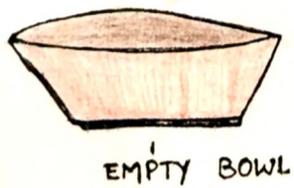
Teacher shows pictures of some birds and animals and then the students identify them as living being or nonliving being and also mention why they are living or nonliving.

Teacher:- Good! Now you write down your homework .

**Figure 1.5 Germination of Plant from Seed.**

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EXPERIMENT TO SHOW PLANTS ARE LIVING,



---

Try and germinate it, like this.

Take a box or earthen pot. I am giving you one seed. You try to germinate it, make your observations as it grows.

In the earthen pot, fill some soil, in the centre dig a whole and put the seed inside cover it with mud and sprinkle little water over it like this. (Teacher demonstrates).

Teacher:- Neelam, tell me what are the characteristics of living beings.

Neelam:- 1. They have life.

2. Living beings breath.

3. Living beings take food.

4. Living beings take water

5. Living beings can move from one place to another place.

Teacher:- Very good! Neelam please sit down.

Bye for now, we will meet in the next class.

**30 minutes**

Students:- Good morning Miss.

Teacher:- Good morning Children, please sit down.

Yesterday we saw the characters of living beings. They have life, they breath, they eat food, they drink water and they can move from one place to another place. Have you done your homework children?

Students:- yes miss.

(Teacher takes out some sprouted seeds, sprouted carrot and onion from the bag)

Teacher:- Children what is this?

Students:- Carrot

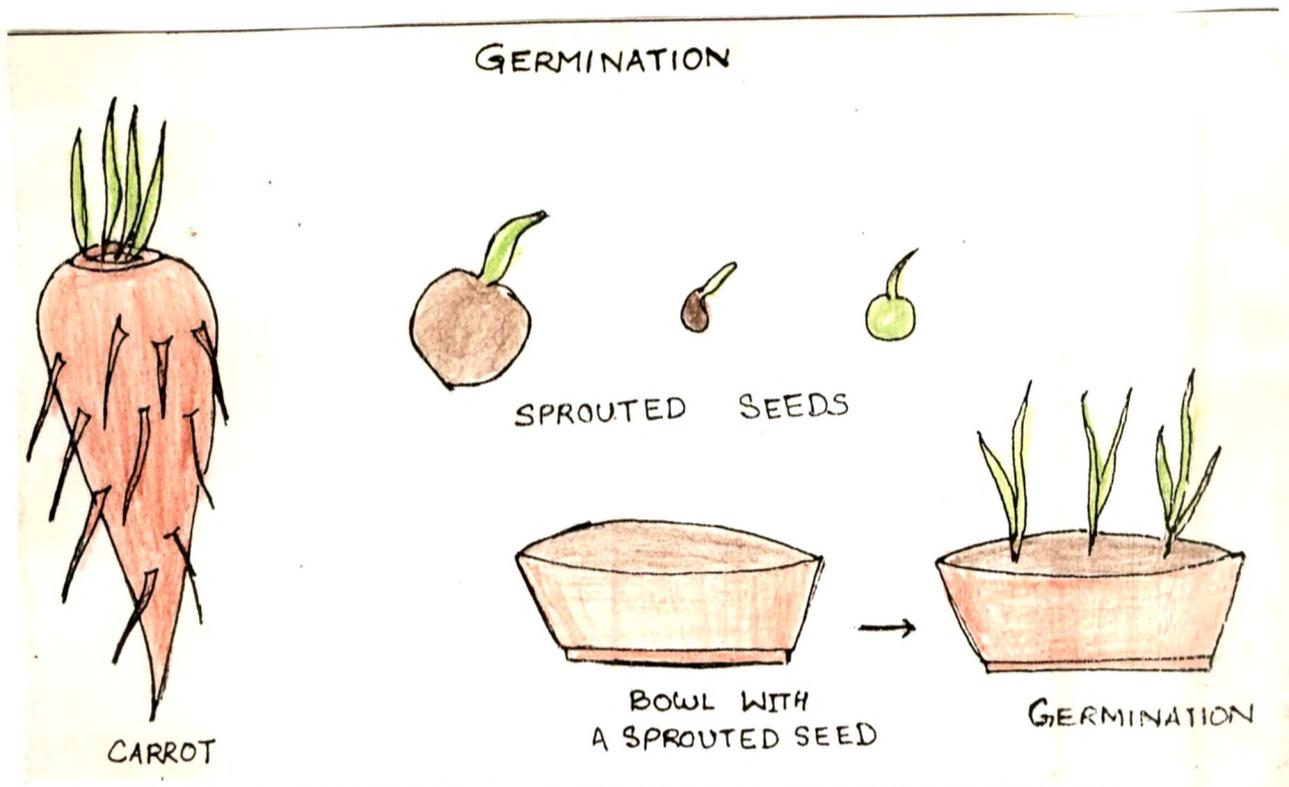
Teacher:- Look children this carrot has something like horns on its head.

Students:- Yes, miss.

Teacher:- If we bury this in soil, it will grow into a plant.

**Figure 1.6 Sprouted Seeds Grow into a Plant.**

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Students:- Miss the other grains on your table have horns and tails.

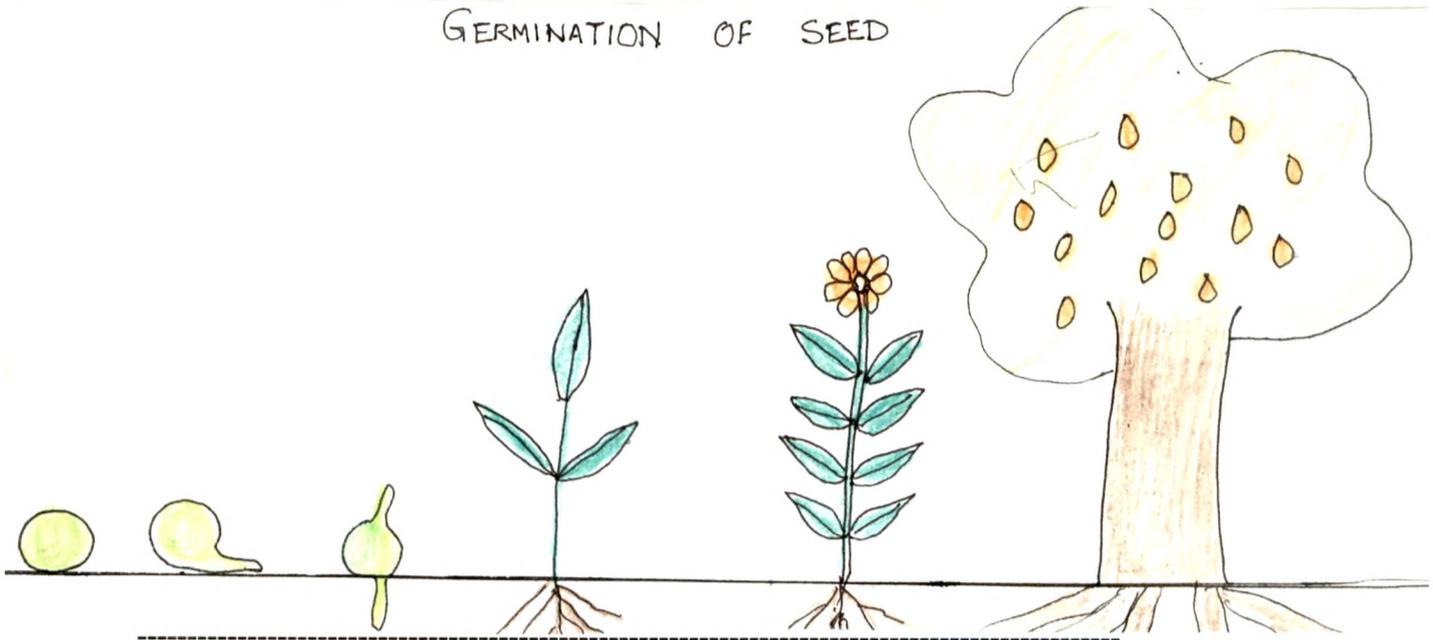
Teachers:- Now look here, if we grow a seed in this earthen pot, it will grow into a plant like this.

(Teacher shows both the earthen pots to children)

Teacher:- Let us see how a seed grows into a tree. Look here carefully.

**Figure 1.7 The Seed Grows into a Plant.**

## GERMINATION OF SEED



(Teacher sticks a seed collage on the flannel board -- from the seed grows the tail and then the horn--- from the tail and horn grows a plant --- from the plant flowers and finally fruits.)

Teacher:- When a seed grows into a tree, we say growth and development has taken place.

Teacher:- We water the plants, so can we say plants drink water?

Students:- Yes.

Teacher:- Children from where the plants get their food? Do their mothers provide them food? Where is their kitchen?

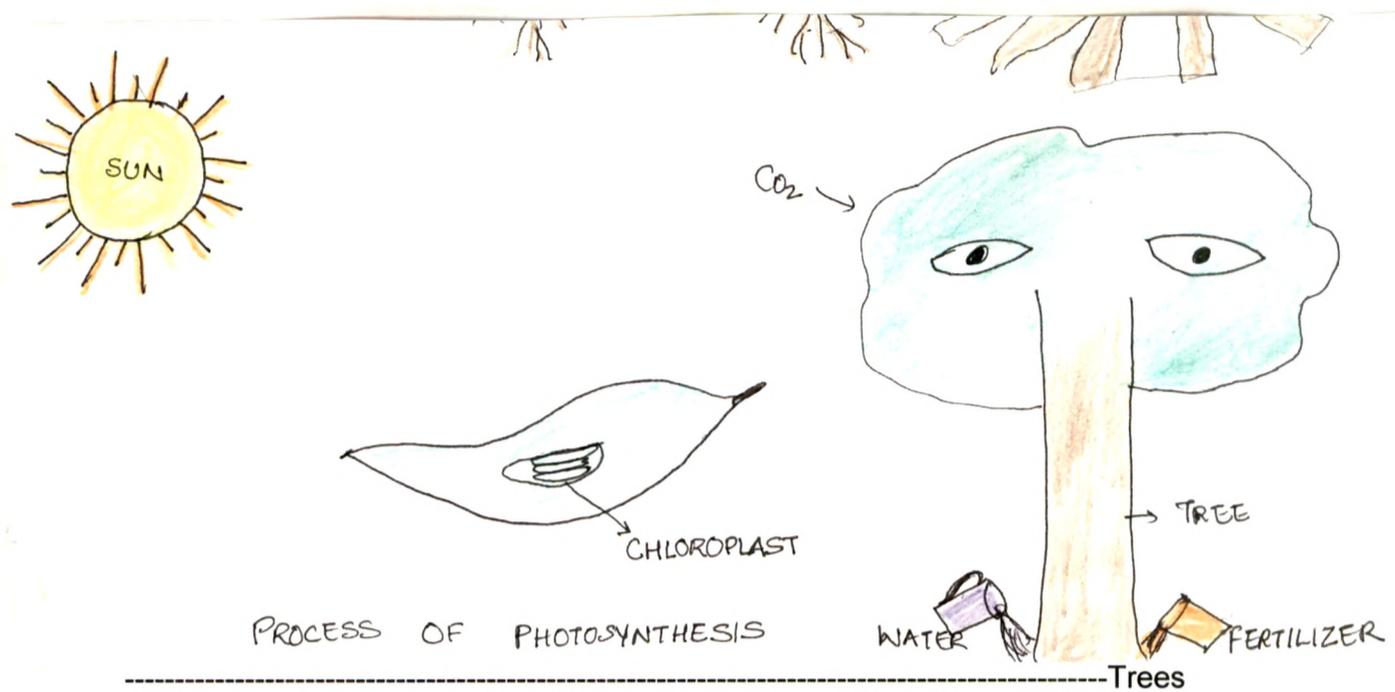
Students:- No miss. We provide them with fertilisers.

Teacher:- Good! Can the plant fill its stomach with the small amount of fertiliser?

It is so big. Teacher:- Plants prepare their own food.

**Figure 1.8 Plants Prepare their Own Food.**

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with the help of sun rays, water, fertiliser and chlorophyll and carbon dioxide prepare their own food. Chlorophyll is their kitchen.

Teacher:- Now what do you say whether plants are living or nonliving?

Students:- Living

Teachers:- That's right! But why?

Students:- They can grow, they can drink water, they can prepare food, they can breath and they have life.

Teacher:- Good! You said they breath. Which air they exhale?

Students:- They inhale carbon dioxide and exhale oxygen.

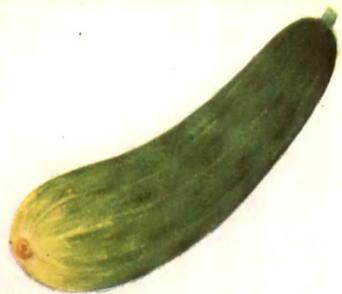
Teacher:- Good! That's excellent. Oxygen is a life supporting gas if we cannot get oxygen, we will not be in a position to live. Isn't it?

Students:- Yes teacher. **Figure 1.9 Pictures of Fruits and Vegetables.**

Teacher shows pictures of some fruits and vegetables and asks students to identify whether they are living or nonliving and why?

# PICTORIAL VEGETABLES CHART

CHART NO. 95



**CUCUMBER** खीरा



**RADISH** मूली



**TOMATO** टमाटर



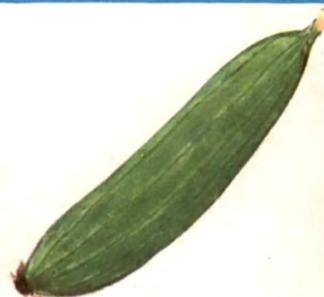
**PEAS** मटर



**BEET** चुकन्दर



**TINDA** टिण्डा



**RIDYE-GOURD** तोरई



**MUSHROOM** खुम्बी



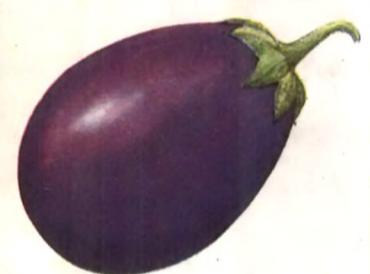
**CABBAGE** बन्द गोभी



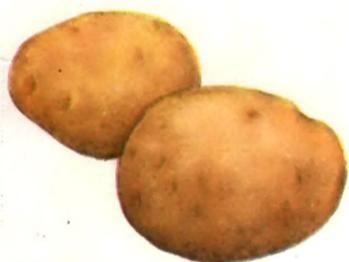
**PUMPKIN** सीताफल



**LEMON** नीबू



**BRINJAL** बैंगन



**POTATO** आलू



**LADY'S FINGER** भिंडी



**CHARRATIS** करेला



**CARROT** गाजर



**ESCULENT-ROOT** कचालू



**GOURD** लौकी



**GINGER** अदरक



**CAULI FLOWER** फूल गोभी



**TURNIP** शलजम



**CAPSICUM** शिमला मिर्च



**FRENCH BEAN** सेमफली



**ONION** प्याज़

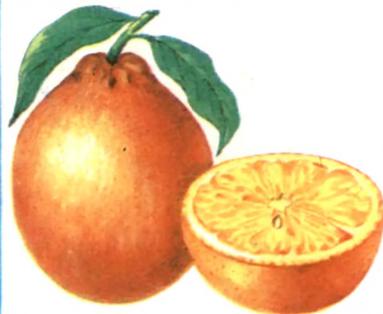
# PICTORIAL FRUITS CHART

CHART NO.



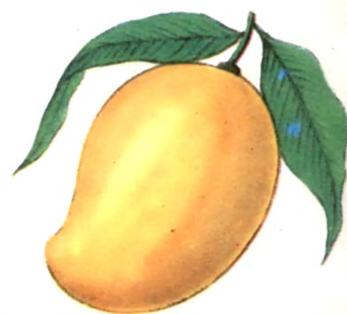
APPLE

सेब



MALTA

मालटा



MANGO

आम



POMEGRANATE

अ



PEACH

आड़ू



PINE-APPLE

अनात्रास



CHERRY

चेरी



GRAPE-FRUIT

मौस



ORANGE

संतरा



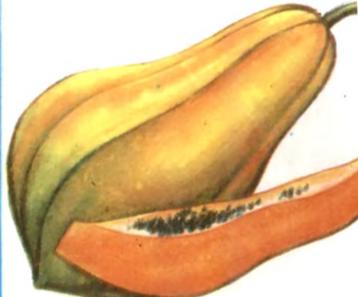
COCOANUT

नारियल



GRAPES

अंगूर



PAPAYA

पपी



CUSTARDAPPLE

शरीफ़ा



BANANA

केला



LITCHI

लीची



GUAVA

अमरू



PEAR

नाशपाती



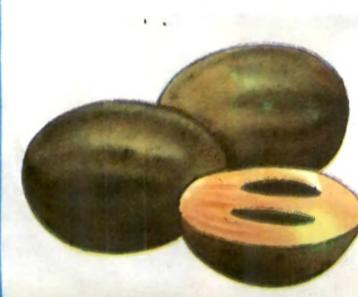
RASBERRY

रसभरी



PLUM

आलूबुखारा



CHICKOO

चीकू



STRAWBERRY

सट्रॉबेरी



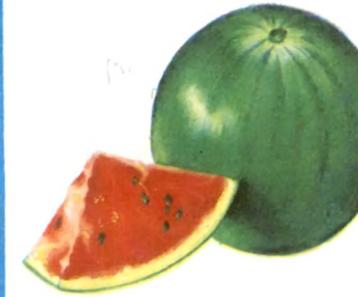
MUSK-MELON

खरबूज़ा



LOQUAT

लौकाट



WATER-MELON

तरबूज़

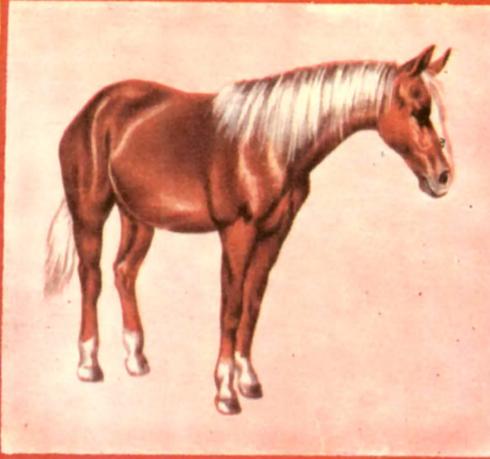
# LIVING ARTICLES

# सजीव वस्तुएँ



HUMAN

मानव



HORSE

घोड़ा



FISH

मछली



BIRD

पक्षी



TREE

पेड़



PLANT

पौधा

# NON-LIVING ARTICLES

# निर्जिव वस्तुएँ



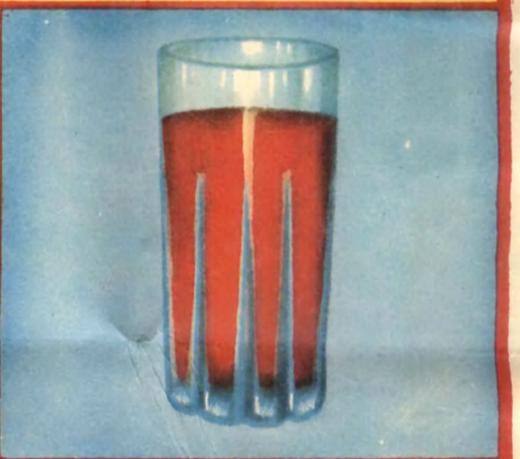
BUILDING

भवन



CAR

मोटर कार



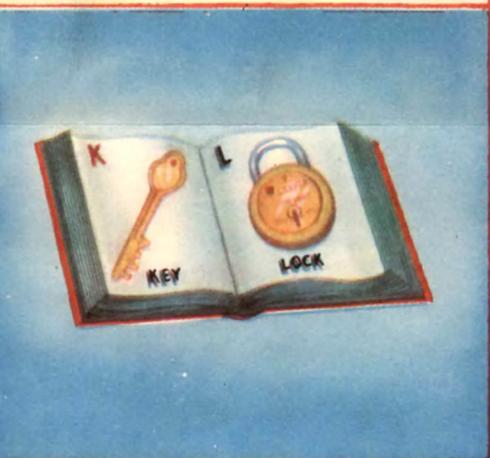
GLASS-TUMBLER

गिलास



FURNITURE

मेज़, स्टूल



BOOK

पुस्तक



PEN-INKPOT

कलम-दवात

Teacher:- What are the characters of nonliving? Who will answer this?

Students:- Nonliving things do not have life, they cannot grow, they cannot eat food or drink water, they cannot breathe and they don't have children.

Teacher:- Very good! Now write down your homework.

Make a list of living and nonliving things that you find in your house. Minimum of 20 nonliving things should be written.

Teacher:- Now you have understood that all the things that are present around you are either living things or nonliving things. So, have you clearly understood what is living and what is nonliving thing?

Students:- Yes miss

Teacher:- Now we shall meet tomorrow. Go home and make a list of five living things and ten nonliving things that you see around in your house.

## UNIT I

Written test.

10 marks.

Q.1 Fill in the following blanks by indicating whether it is living or non living.

2(1/2x 4)

1. Bird is a \_\_\_\_\_ thing.
2. Table is a \_\_\_\_\_ thing.
3. Cockroach is a \_\_\_\_\_ thing.
4. Fish is a \_\_\_\_\_ thing.

Q.2 Indicate whether following statements are true or false. For a true statement

mark ( ) and for a wrong statement mark ( X)

4 ( 1x4)

1. Trees are living thing.

2. Roses are nonliving things.

3. Bench can breath.

4. Duster has a child.

Q.3 Who can be called living? write in one sentence. 1

Q.4 Which things can be called as nonliving? Write in one sentence. 1

Q.5 Write two examples of living things. 1

Q.6 Write two examples of non living things. 1

Oral Examination 10( 1x5)

Q.1 Which are the characters of living things?

Q.2 Which are the characters of nonliving things?

Activity Test.

Here is a set of pictures wherein 30 pictures are given. What you have to do is very simple. You have two glasses. On one glass living is written and on another glass nonliving is written. Put a picture of living thing in a glass labelled as living. Put a picture a nonliving in the glass labelled as nonliving. So start now.

( Sheet living and non living objects)

Answer key for unit test I tests.

A-1

1. Living

2. Nonliving

3. Living

A-2

1. Right.

2. Wrong

3. Wrong

#### 4. Living

#### 4. Wrong

A-3 One who possesses life is living.

A-4 One who does not possess life is non living.

A-5 Boys and girls are examples of living beings ( They can write any two names)

A-6 Chair and table are examples of nonliving things. ( They can write any two names)

#### Oral answers

A-1 One who has life.

That can move on its own.

They can grow and develop.

They can eat and drink.

They can breath.

They have babies.

A-2 They don't have life.

They cant move one place to another.

They can neither eat nor drink.

They can't breath.

They don't have children.

#### Activity test    answer key

#### Living things.

1) Guava

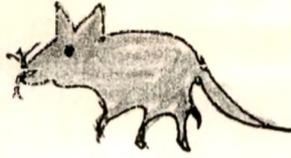
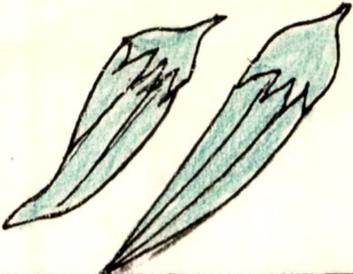
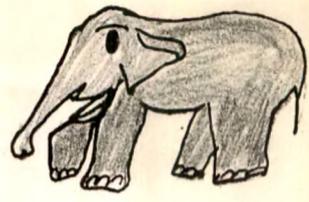
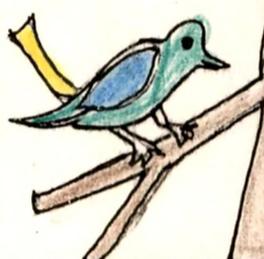
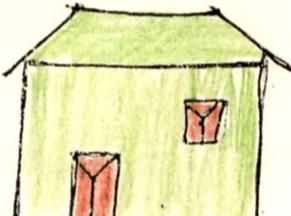
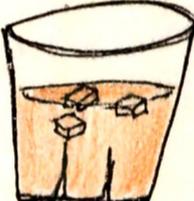
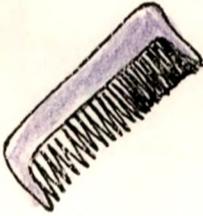
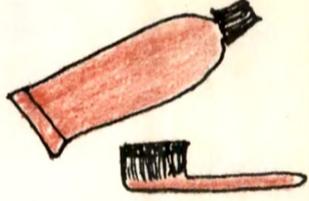
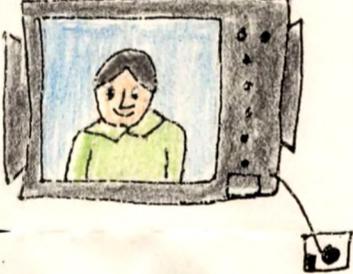
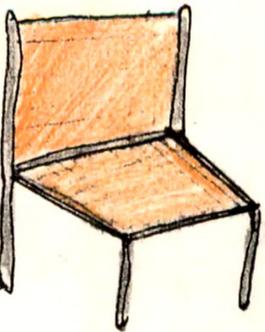
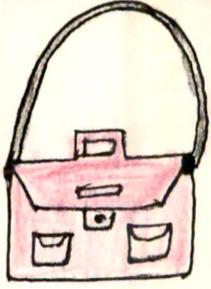
2) Cat

3) Donkey

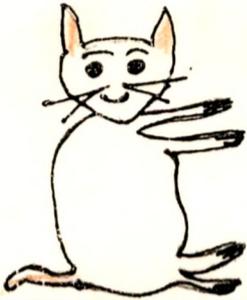
4) Duck

5) Mango

6) A boy and girls

 <p>MOUSE</p>	<p>LADY FINGER</p> 	
<p>GIRL BOY</p> 	<p>BIRD</p> 	<p>FLOWER POT</p> 
<p>HOUSE</p> 	<p>GLASS</p> 	<p>TABLE</p> 
<p>COMB</p> 	<p>HONEY</p> 	<p>TOOTH PASTE TOOTH BRUSH</p> 
<p>TELEVISION</p> 	<p>BADMINTON RACKET</p>  <p>SHUTTLE COCK</p>	<p>KIT-KAT</p>  <p>CHOCOLATE</p>
<p>SCISSORS</p> 	<p>CHAIR</p> 	<p>SCHOOL BAG</p> 

CAT



FROCK



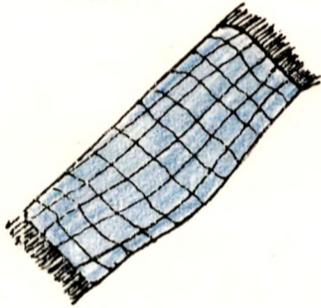
BAT



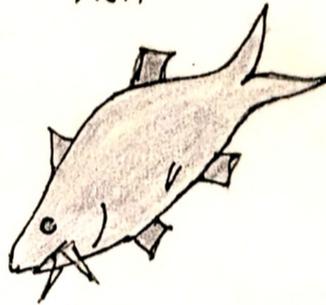
BALL



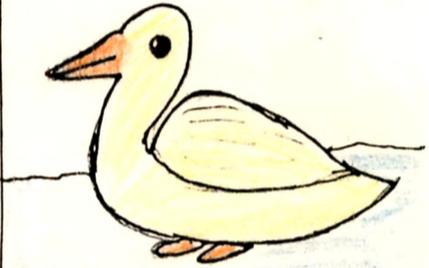
TOWEL



FISH



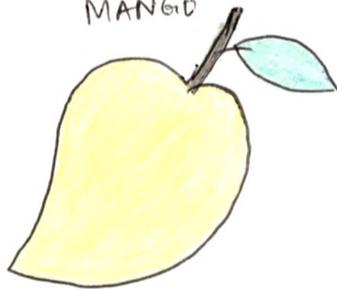
DUCK



ROSE



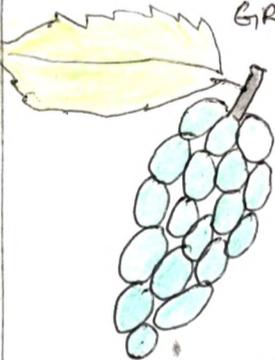
MANGO



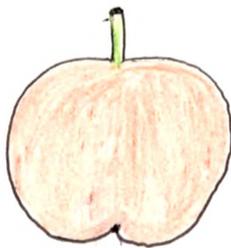
BANANA



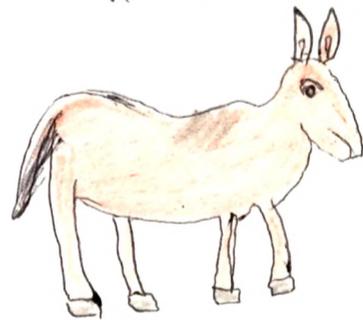
GRAPES



APPLE



HORSE



- |                  |                 |                       |
|------------------|-----------------|-----------------------|
| 7) Fish          | 8) Ladyfinger   | 9) Potted plants      |
| 10) Mouse        | 11) Grapes      | 12) Bird on a branch. |
| 13) Elephant     | 14) Banana tree | 15) Rose              |
| Nonliving things |                 |                       |
| 1. House         | 2. Tooth brush  | 3. Chair              |
| 4. Glass         | 5. T.V          | 6. School bag         |
| 7. Bench         | 8. Badminton    | 9. Frock              |
| 10. Comb         | 11. Chocolate   | 12. Bat ball          |
| 13. Bottle       | 14. Scissors    | 15. Towel.            |

## **Unit II Plants and Animals**

### **Uses of Plants and their Protection**

#### **Instructional Objectives:-**

1. Students will be able to state importance of plants.
2. Students will be able to give examples of plants used in daily life.
3. Students will be able to make a list of plant products.
4. Students will be able to classify plants into different types based on their usage.
5. Students will be able to explain about what will happen if all the plants die down.
6. Students will be able to mention the names of harmful plants.
7. Students will be able to explain how to take care of plants.
8. Students will be able to describe importance of tree plantation.
9. Students will be able to sow some seeds.

10. Students will be able to explain importance of conservation of trees.

11. Students will be able to differentiate plant products from animal products.

Teacher:- Day before yesterday, we studied about living and nonliving things.

Who can be called living?

Students:- One who possesses life is called as living.

Teacher:- Good! living things can be classified into which two major categories?

Students:- We don't know.

Teacher:- Okay. Look here I will mention some names. You try to classify them.

Elephant, horse, tiger, lion, goat, wolf, rat, dog, cat, rose, mogra, neem, carrot, green peas. Now can you classify them?

Students:-Yes madam. We can classify them into plants and animals.

Teacher:- That's right. Living things can be classified into plants and animals.

Teacher:- Today I will tell you a story. All of you listen to it carefully. After the story ends, I will ask you some questions which you will have to answer.

### **Figure 2.1 Story of Hermit and the Boy.**

---

There was a small boy. His name was Sunny. He was very naughty boy. All the time he would do one or the other kind of mischief. One day his teacher gave him homework but he went home and started playing. Mummy said " Sunny do your homework. But Sunny ignored. In the evening papa scolded Sunny. Sunny was very angry but could not say anything to his father. So he went to the garden

and started plucking flowers and small plants. While he was doing so Maltiben saw him. She explained and said " Look here Sunny, plucking flowers and plants is a sin". Sunny listened to her but there was no impact on him. Although as Maltiben said he apologised to his father and also did his homework. When he finished his homework, his mom gave him dinner. They sat on dining table. In the plate he had dal, rice, chapati, vegetable, pickle and salad. From all this Sunny just took rice and vegetable and he wasted all other things in the plate. Than he took a cotton bedsheet and slept. Next day was Sunday. His father had a holiday. So they planned to go for a picnic in the nearby park.

In the garden, Sunny saw different types of flowering plants like Juhi, Rose, Jasmine, Sunflower, Champa, Dahlia, Chrysanthemum, Shoeflower etc. Seeing all these flowers Sunny was delighted. He started walking fast and much ahead of his parents. At the park end there was a jungle. Sunny saw big big trees like Chickoo, Apple, Mango, Badam etc., While walking fast and enjoying identification of various trees, he didn't know that he has come much ahead and also lost his way. When he realised it, he started crying loudly. His cry was heard by a hermit staying nearby.

The hermit came to Sunny and asked him " My child what makes you cry? and What are you doing here in this jungle? Sunny narrated the entire story, how he got away from his parents. Hermit understood that Sunny was a naughty boy. So, he thought that he should be taught a good lesson. Hermit tied Sunny with a wooden pole, he tied his hands with a coir, in a small hut made up of grass, leaves and bamboo's.

The hermit sat on the rag made from jute. Sunny kept on crying. The hermit allowed him to cry. After some time the hermit felt that Sunny might be hungry so he gave him a basket full of fruits. The basket contained apple, orange, banana etc., But Sunny did not like to eat fruits as he was a choosy boy and kept on saying he wanted this and he wanted that. At night, the hermit freed Sunny and gave him some herbals tonic ( medicine).

Next day morning the hermit took Sunny to his field where he had grown wheat, rice bajra, jowar, chana, groundnut, tuar dal, etc., On the other side there were vegetables like brinjal, tomato, ladyfinger, bittergourd, etc., Aah ! Sunny was enjoying all this. Sunny joined his hands together and said “ I have understood my fault. Plants give us so many things. Breaking or plucking them indeed is a sin. Now I will not harm trees or plants.”

In the meanwhile, Sunny`s parents came. Sunny went away happily with them.

---

Teacher:- Where Sunny`s mother gave him food?

Students:- Sunny`s mother gave him food on the dining table.

Teacher:- Dining table and chair are made from what?

Students:- Dining table is made from wood.

Teacher:- Correct! Which things were there in Sunny`s plate?

Students:- Dal, rice, vegetable, chapati, pickle and salad.

Teacher;- Good! Sunny saw which flowers in the garden?

Students:- Dahlia, rose, sunflower, jasmine, mogra, chrysanthemum, Shoeflower etc.,

Teacher:- Fine! Sunny saw which trees in the garden?

Students:- Sunny saw apple, mango, guava, badam etc., trees in the garden.

Teacher:- Good! hermit's house was made from which things?

Students:-Hermit's house was made up of bamboo, dry leaves and grass.

Teacher:- Fine! Hermit tied Sunny with which thing?

Students:- Hermit tied sunny with coir.

Teacher:- Do you know coir is made from coconut, coir is made from the brown coconut hairs.

Students:- Yes, Miss.

Teacher:- After tying Sunny with a coir what did the hermit do?

Students:- He sat on the sack made out of jute.

Teacher:- Sack used to fill wheat and rice is made from jute. Jute is a kind of plant. Many medicines are prepared from plant juices like, neem juice, tulsi juice, adhatoda juice, ginger juice, etc., You might have seen the advertisement of pudinhara. Then vicco vajradanti tooth powder and tooth paste, herbal creams, shampoo etc., are plant products.

Teacher:- In the hermit's farm Sunny saw which cereals and pulses?

Students:-In the hermit's farm sunny saw wheat, rice, jowar, bajra, maize cereals and tuar (arhar) and chana pulses.

Teacher:- Correct! Hermit had grown which vegetables?

Students:- Brinjal, tomato, lady's finger, bittergourd and cabbage.

Teacher:- So, you have seen, plants give us so many things. Some more uses are shown in this chart. You observe it carefully and then copy in your notebook.

**Figure 2.2 Chart Showing Usefulness of Plants.**

CEREALS	WHEAT	RICE	MAIZE	BARLEY
PULSES	PEAS	YELLOW PEAS	CHICK PEAS	BLACK PEAS
FIBRES	COTTON	JUTE	COIR	
OIL SEEDS	SESAME	GROUNDNUT	SUNFLOWER	MUSTARD
TUBERS	POTATO	ONION	CARROT	RADDISH
BEVERAGES	TEA	COFFEE	COCO	

Teacher:- So you have seen plants are very useful to us. Apart from this there are many things that plants give us. The edible oils which you use like groundnut oil, cottonseed oil, sunflower oil, safflower oil etc., are the products from plant seeds. The cotton clothes that you wear are made from cotton, which is also a plant product. The chocolate that you eat, the bournvita that you mix in milk and drink are also plant products. Your benches, pencils, notebooks, books are also made out of wood pulp. Wood as you know is available from the trees. Which is used for manufacturing doors windows and furniture even roof are made of wood. Plants also give us fuel in different forms like petrol, kerosene, wood,

diesel. When huge huge trees get buried under the earth and after thousands of years get converted into fossil fuel like petrol and diesel.

So, children you have seen that, plants give us so many things. Plants give us a basic thing which is oxygen. Without oxygen no one can live.

Teacher:- There are some harmful plants also like calotropis, tobacco, ipomea, babool, cactus, etc., They harm the users.

**Figure 2.3 Usefulness of Plants**

USEFULNESS OF PLANTS


Write down your homework. I am giving you an outline of tree, what you have to do is that you have to write down the various products that we get from plants.

Teacher:- Have you written?

Students:- Yes.

Teacher:- We will see tomorrow how to take care of plants.

### **Plant Care**

**30 minutes**

Teacher:- Today I will tell you a story. Have you all done your homework ?

Students:- Yes miss.

Teacher:- Monitor collect the homework sheets and keep them on my table.

Teacher:- Okay children, now all of you sit straight.

#### **Figure 2.4 Story of Red and Yellow Flower**

---

One day Deepak went with his father to nursery where he saw number of plants and various colourful flowers. He started seeing all the plants around. Suddenly he saw a plant and he liked it very much. He told his father, that he wanted it." In the meanwhile, Vaishali who was studying with Deepak also came there. Vaishali also liked the same plant.

Vaishali and Deepak started fighting. Looking at their interest, the gardener gave seeds to both from the same plant. Both were satisfied and happily took the seeds to their houses. They sowed those seeds in their own earthen pots. Many days passed. One fine morning there was an announcement in the school, regarding plant exhibition. Deepak and Vaishali also participated in that exhibition. Both brought their potted plants in the exhibition. Now here two plants belonging to same parents met and talked with each other. The talk was as follows:-

( Vaishali had a red flower and Deepak had a yellow flower)

Red Flower:- Hello, brother how are you?

Yellow Flower:- Oh, Okay. I am just counting days.

Red flower:- Hey! Tell me what is the problem why do you talk like this?

**Figure 2.5 Yellow Flower Weeping**



(Yellow flower was pale, dull, bent and almost dwindled and it started crying)

Red flower:- What happened my brother, why are you crying?

Yellow flower:- Haven't you understood it while looking at my condition? I am living in a pathetic situation.

Red flower:- Both of us left the nursery in the form of seed, at that time. We were similar twins. Who made your condition like this and how?

Yellow flower:- ( sobs) Deepak took me home with great enthusiasm and put me into soil in the potted plant. After planting me, he poured lot of water. He used to come and see me every time till the leaves came. But after some days, he stopped looking at me totally as if he was angry with me! He kept me away from sunlight and he would not give me water , his friends used to pluck my leaves. Nor did he give me fertiliser, he kept me near the roadside window. Due to heavy pollution I could not even breath properly. Only today in this exhibition I am getting some fresh air. Hey! But red flower you look very happy.

Red flower:- Yes, Vaishali is a very good girl. She took me to her garden and in one pot she planted me. She positioned the pot in such a way that I get appropriate sunlight. She used to regularly pour water in the plant. When I grew little, she gave me appropriate amount of fertiliser.

Yellow flower:- Deepak also gave me fertiliser, but at a time he poured all the fertiliser, so what happened you know, my roots got damaged and got infected.

Now you tell me, can anyone digest food of one year in a day?

Red flower:- No, it is not possible. Food for whole year can't be taken in one day.

Yellow flower:- Then how could I ?

Red flower:-Vaishali used to water me every day and provide only appropriate amount of fertiliser.

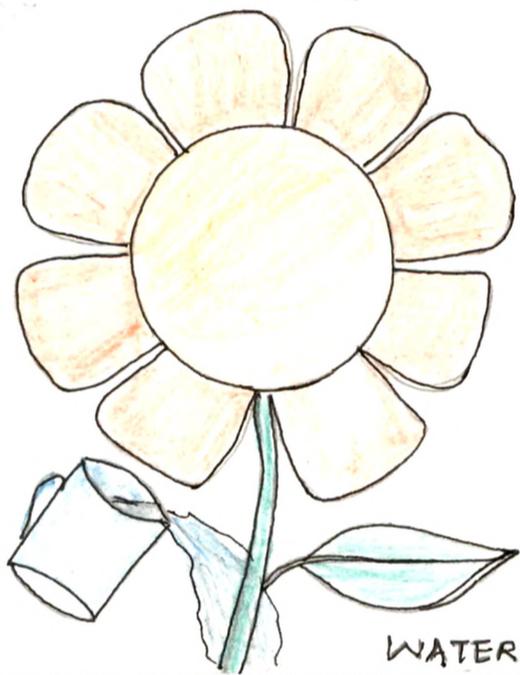
**Figure 2.6 Red Flower was provided with Fertiliser**

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**Figure 2.7 Red Flower was Watered Regularly**

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Red flower:- She used to give me pest control medicines also to protect me from pest. She used to remove extra and unwanted grass in my pot, so that, I got proper nutrition.

**Figure 2.8 Red Flower was Sprayed Pesticides**

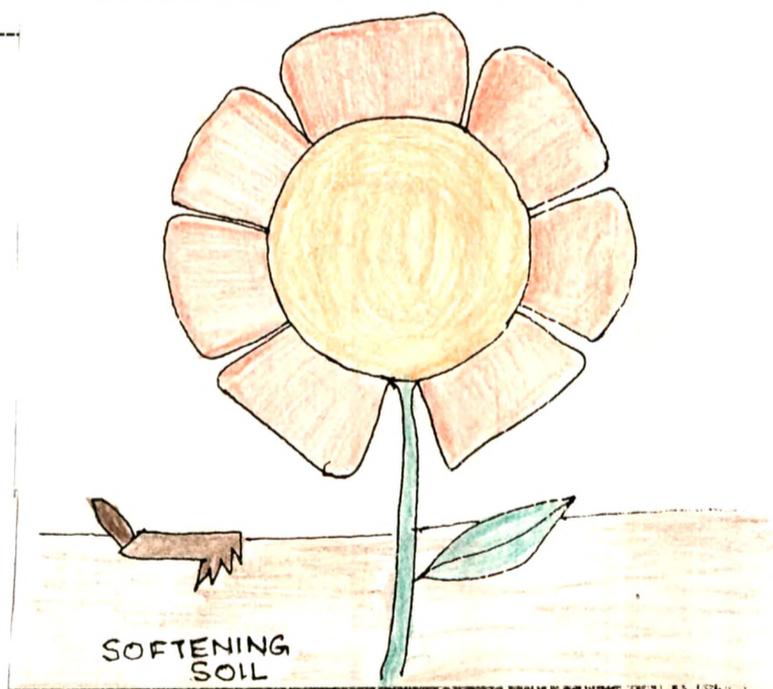
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Figure 2.9 Grass removed from the Vicinity of Red Flower



Figure 2.10 Soil around Red Flower was Made Porous



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Red flower:- She made the soil around my stem soft and porous, She also made a fence around me so that goat or cow will not eat away my leaves. This is the story of my smiling face.

(Red flower talks with children in the school)

Red flower:- Children if you want to keep your flowers smiling, then remember that you will have to do following things;

- Give appropriate amount of sunlight to your plant.
- Water the plant regularly.
- Remove extra grass from the pot.
- Keep the soil porous.
- Put appropriate amount of fertiliser.
- Spray medicine to keep the pests away.
- Make a fence around your plant to protect it from wandering animals.

Now have you all understood how to keep your plant hail and hearty?

Students: Yes.

Yellow flower:- Don't make any flower's condition like mine. Keep each and every plant smiling. Because plants give us so much selflessly.

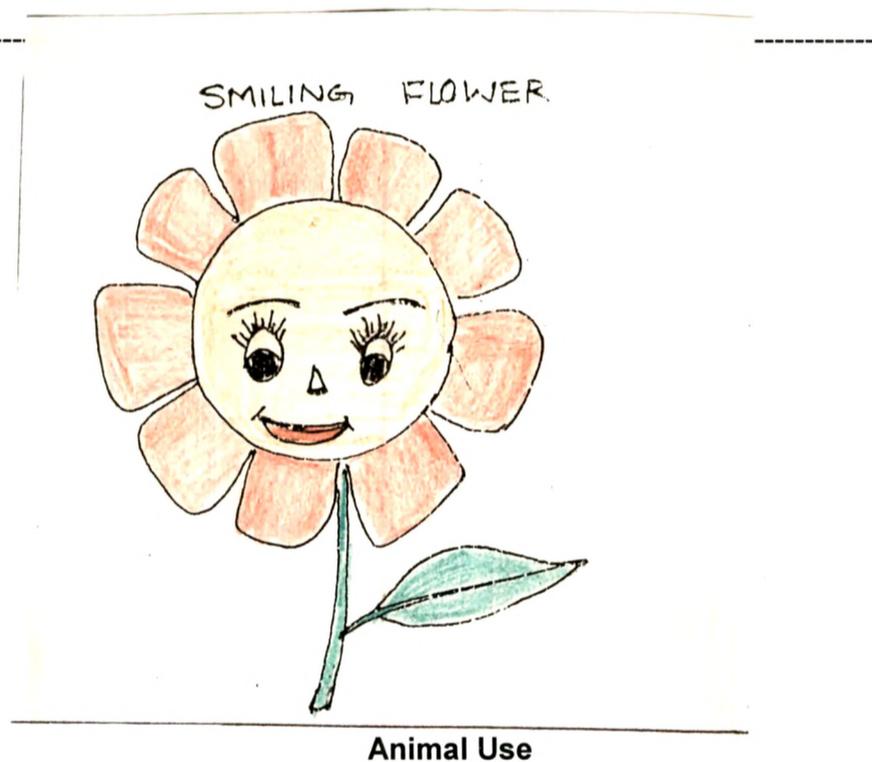
At the end of the exhibition Vaishali's plant got first prize.

Both the flowers said bye bye to all the children and other plants. Deepak learnt a lesson from this.

---

Teacher:- Write down your homework. Go home and plant a flowering plant in a small earthen pot or in any empty can. Use all the tips to keep the plant happy like Vaishali's flower.

**Figure 2.11 Grow a Flowering Plant and keep the Flower Happy**



**Instructional Objectives**

1. Students will be able to state the importance of animals.
2. Students will be able to give examples of various animal products.
3. Students will be able to identify and differentiate various things belonging to animal kingdom.

4. Students will be able to explain the relationship of animals with jungle.
5. Students will be able to describe conservation of animals.
6. Students will be able to identify harmful animals.
7. Students will be able to explain about how to take care of animals.
8. Students will be able to explain the necessity of love and affection for animals.

#### Animal Use

Teacher:- Good morning, children.

Students:- Good morning ,teacher.

Teacher:- We have studied earlier that the living beings can be classified as plants and animals. In the last class we studied uses of plants and now in this class, we shall see uses of animals.

Teacher:- Which things we get from animals?

Students:- Milk, wool, and animals are useful in farming also.

Teacher:- Right apart from this are there any other uses?

Students:- Animals excreta is used as fertiliser.

Teacher:- Good! do you know any other use?

Students:- No miss.

Teacher:-Animals give us many things. Let us see them one by one.

#### **Figure 2.12 Uses of Animals**

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# BIRDS CHART पक्षियों का चार्ट



SPARROW चिड़िया



PIGEON कबूतर



PEACOCK मोर



HOOPOE हड्डबंद



PARROT मोता



CROW कौता



COPPERSMITH उड़ता



SKYLARK चकवा (भरत)



EAGLE गरुड



KITE चीता



STARLING मोता (सोसिचर)

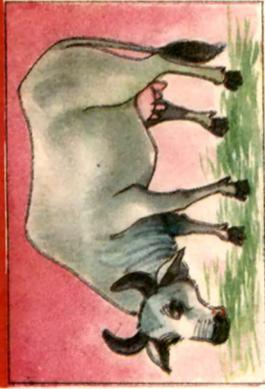


ROLLER नीलकण्ठ



# ANIMALS

# પાલતુઓ



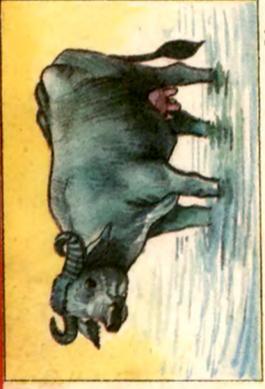
COW ગાય



SHEEP ઘેટું



PIG ભૂડું



BUFFALO ભેંસ



GOAT બકરી



MONKEY વાંદરો



OX બળદ



DOG કુતરો



SQUIRREL ખિસકોલી



DONKEY ગધેડું

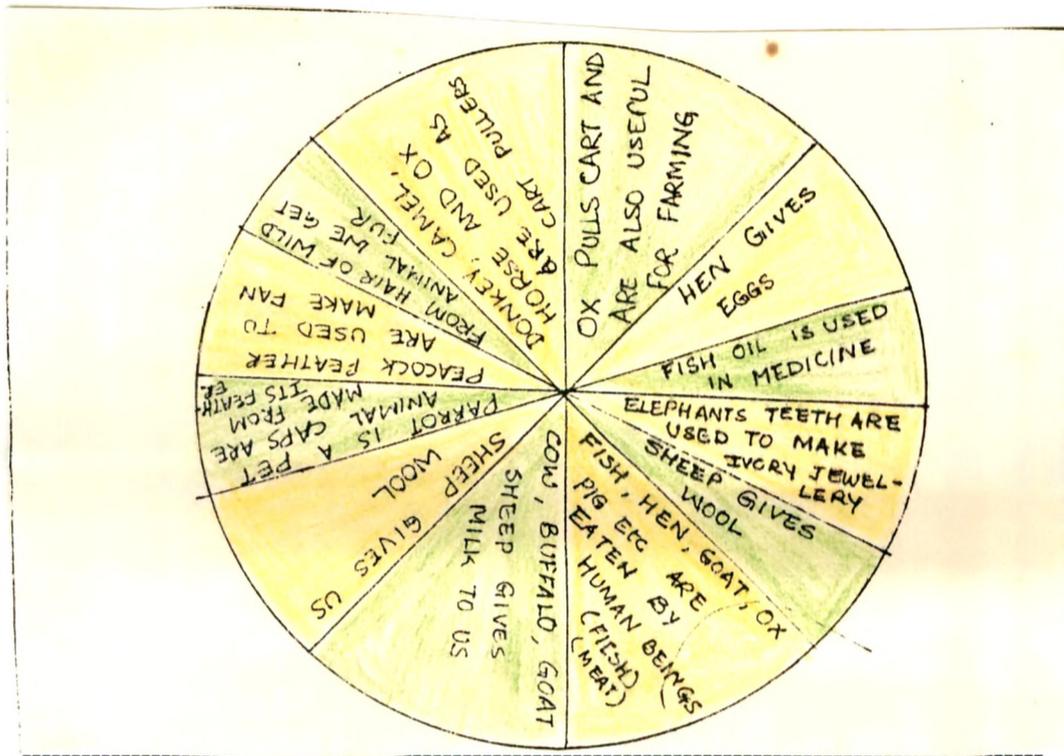


CAT બિલાડી



HORSE ઘોડો





Teacher:- In the first part which pictures you can see?

Students:- Cow, buffalo, and goat.

Teacher:- what do we get from these animals?

Students:- Milk.

In the second part which picture you can see?

Students:- Hen.

Teacher :- That's right! what does the hen give?

Students:- Hen gives us eggs.

Teacher:- Right. In the third part which animals you can see?

Students:- Fish, goat, and hen

Teacher:- What is their use?

Students:- People eat them.

Teacher :- In the fourth part which picture you can see?

Students:- Fish.

Teacher:- What is the use of fish?

Students: We get cod-liver oil and other medicine from fish. Which is this animal?

Teacher: Good, which is this animal?

Students:- Elephant.

Teacher :- What is the use of elephant?

students:- From their teeth we get ivory and out of that ornaments are prepared.

Apart from this, elephants are used in the jungle to lift wooden logs.

Teacher:- Identify these animals and tell their names.

Students:- Cat and dog. Teacher, they are pet animals.

Teacher:- Who's picture is this?

Students:- Sheep. It gives us wool. From the wool, sweater, cap, shocks, scarf, muffler etc., things are prepared.

Teacher:- Right, In this section, which picture you see?

Students:-Ox, donkey, camel, elephant and horse.

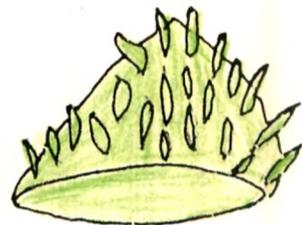
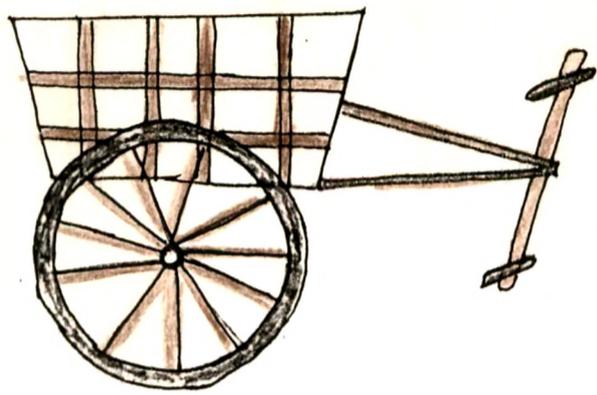
Teacher:- How these animals are useful to us?

Students:- They are used to lift wait and carry it from one place to another. Ox is used by the farmers in their farms for farming purpose.

Teacher:- Good! Identify this bird.

Students:- It is parrot some people use parrot as pet animal, while some wear caps made from their feathers.

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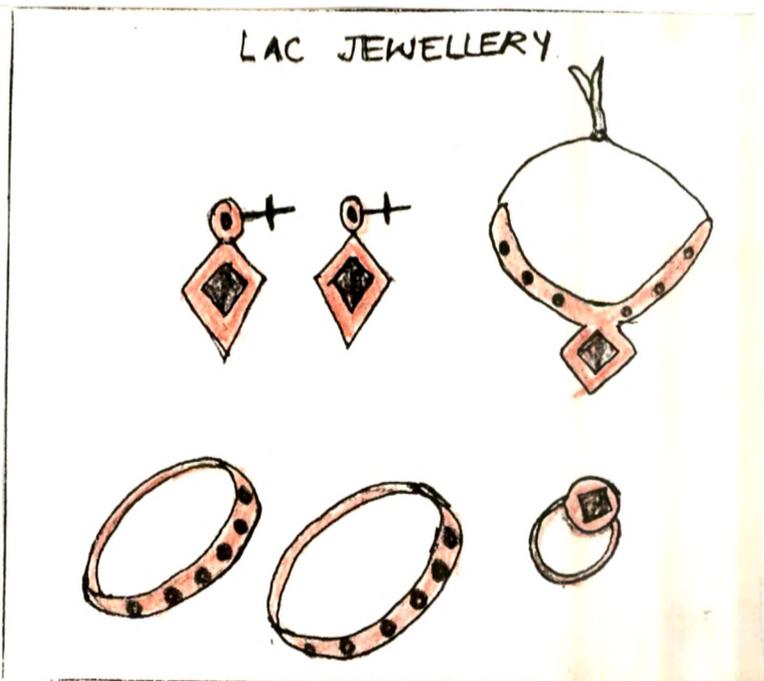
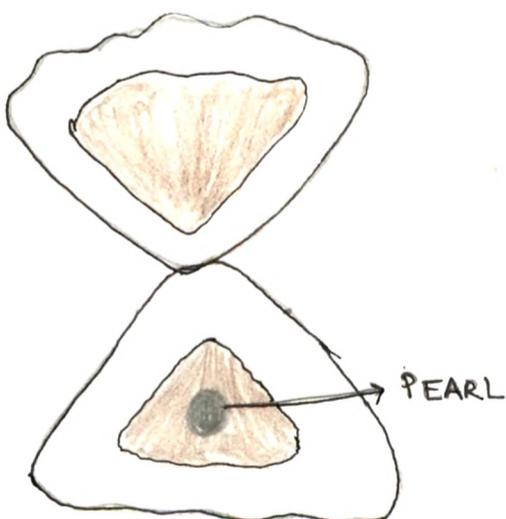
Teacher:- Whose picture is this?

Students:- Peacock, it is our national bird.

Teacher:- Very Good! Its feathers are used to make hand fans. In this section which pictures do you see.

Students:- Lion, wolf, zebra, giraffe, hippopotamus etc. Teacher, lion is the king of forest.

Teacher:- Correct! all these animals constitute our wild life and from the hair and skin of these animals fur coats, caps, purses, are made.



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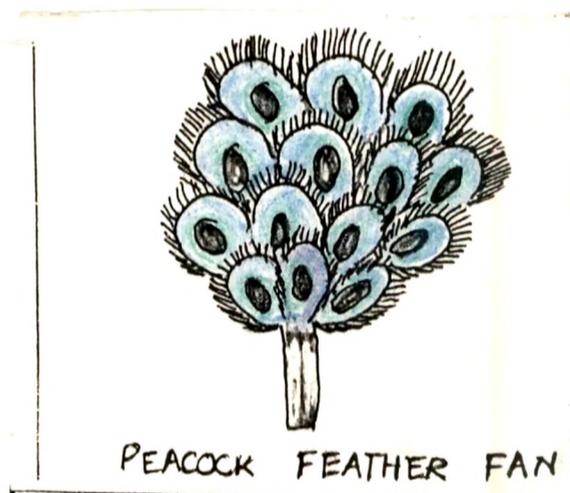
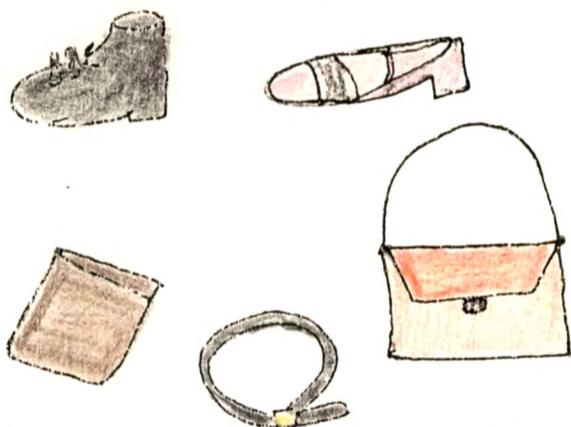
From the skin of various animals, leather is prepared and this leather is used to make shoes, sandals, purse, valet and belt. What is this?

Students:- Pearl necklace.

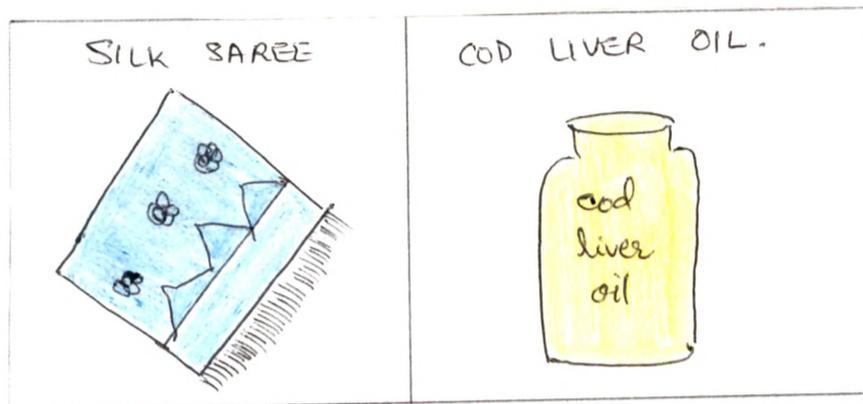
Teacher:- Good! Do you know how do we get pearls?

We get pearls from a sea animal named as oyster. You have seen some sea shells while playing in sand, some times you might have seen shells like this.

(Teacher shows sea shell). Similarly there are bigger shells in the sea. In these shells, the oysters keep there pearl.



Silk worm gives us silk. From silk, we make clothes. You might have seen in marriages people were those shining clothes with golden embroidery they are silk saris. There is a worm in the jungle, it gives lac and from it, number of ornaments can me made. Honey bees give us honey. Even the excreta of the animals is useful to us in making of fertiliser. See how useful are these animals to us.



Teacher:- Which animals can be called as farmers' friends?

Students:- Ox, peacock, earthworm, and snake.

Teacher:- By eating away the unwanted elements in the field they help the farmer.

Teacher:- Which are the harmful animals?

Students:- Termite, worm, snakes, mosquito, cockroach, rat, etc.,

Teacher:- Very good. Now take down your homework.

In this sheet fifteen animal names are hidden. what you have to do is, find out there names and separately on the piece of paper write their uses on a separate piece of paper.

There is another sheet. You have to write down the names of animal products.

### **Animal Care**

Teacher:- Good morning, students.

Students:- Good morning, teacher.

Teacher :- Monitor, Collect the homework sheets and keep it on my table. Children, today I am going to tell you a nice story. All of you please sit straight, maintain silence.

**Figure 2.13 Animal Court : Case against Human Atrocity.**

---

(Teacher tells the story using various masks. In the beginning she wears bullocks mask)

I am an oxen and my name is Jivlo. Look at me, I am so weak. I am working for Chagan farmer. Chagan wakes me up at 4 O` clock in the morning with the help of stick. I get hurt due to that stick. If some body wakes you up in the morning, do you like it?

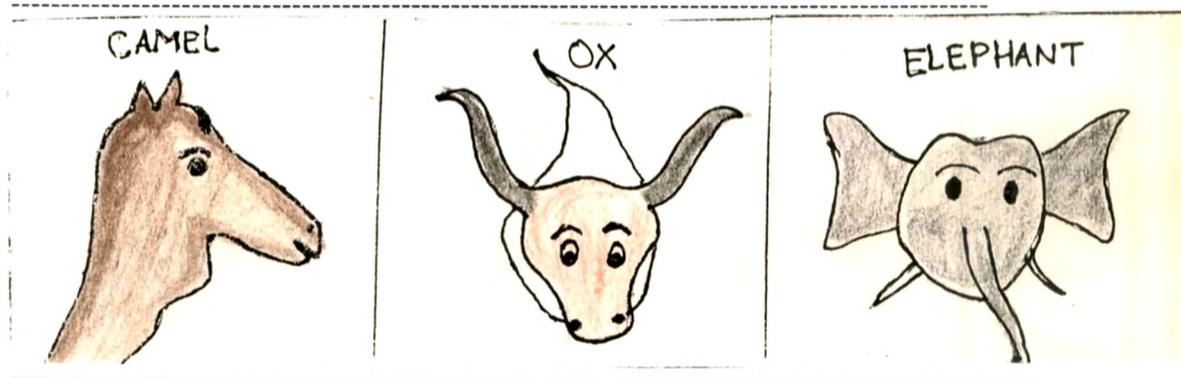
Students:- Not at all.

Ox:- I also didnt like. But whom to tell, my parents don't stay with me. When I used to get up he used to give me some water and dry grass. But I don't like dry grass. Eating dry grass is a problem as it hurt me in my throat, it is was difficult to chew. I only like fresh green grass, which is soft and yummy. I stared day dreaming how nice it would be if I could go to king lion in the forest and eat fresh leaves and grass with my friends and other animals. I would just play for whole day. Every one likes to play isn't it?

Students:- Yes very much.

Ox:- I also like to play. But Chagan would put a heavy hull on my shoulder Oh! the wood is very heavy . He would make me walk in the hot sun. In the lunch hour he would give me dry grass but he nicely ate chapati and butter milk. I felt

like crying. It is so hot. I swatted so much but Chagan had no sympathy for me. In the afternoon, Chagan went home and handed me over to Magan the oil mill owner. When I used to reach Magan's place, I used to be tired. I didn't have energy to walk. Magan would beat me with hunter. Look on my back, I have been wounded badly. Its very painful. In the evening, Chagan gave me to Jivan uncle. Jivan uncle was a nice man. He would give me water and green grass. He was very good. But his man Parag was very bad. In the evening I am so tired, still Parag would ply me in his cart to take load from one place to another. In that route, I had to climb a bridge with the luggage and it was indeed an uphill task. I could not walk at all and Parag used to beat me. At night, Parag would come and give me back to Chagan. I used to cry at nights as my entire body would pain.



One day, I got tired of this routine I broke my rope and went to jungle. There I found animals court of law. In the court, there were horse, camel, dog, elephant. They were all agitated due to atrocities done by human beings. Camel said “ These people ply me in cart and then they have beaten me to such an extent that my skin peals off. They don't give me water nor food and the place in which I live is filthy there are mosquitoes, my toes have been infected by germs” In

the meanwhile, elephant started crying. It said "due to atrocities of human beings my trunk has peeled off, my family members are killed for their tusks. Oh! My lord do some justice and punish my owner. We also have right to live. Horse started crying oh! king you must listen to me. These human beings torture us. They ply us in their cart, and they don't make us bath. They don't give us enough food and water and when hurt they don't take us to doctor. Moreover, they make us carry so much luggage and so any people sit in the cart. when we cannot walk they beat us with hunter. Oh! King, " save us."Dog said " People hit me with stones and they don't let us live in peace. My skin is damaged and in the wounds, there is pus formation. Oh! king do something otherwise I will die. At that time the king got up roaring, and said" I am also suffering due to the atrocities of human-beings. Day by day they are cutting my forests. If forests will cease to exist where will we go? People are ruthlessly killing my relatives and they are using the skin for decoration and the hair for making fur coats. If forests will not be there we will also die. Before this happens, let us kill the human beings. Than we can live happily everafter.

Comeon let us all go and attack human beings. All the animals joined the battalion. At that time horse says " The children coming in my cart are innocent. They are not in fault and they love me. Let us arrange a meeting with human beings. We will tell them about what we want.

( A meeting is called)

In this meeting Jivan, Chagan, Magan, Parag and all other human beings come.

All the animals make them understand, " We are not your enemy and we want to live with you, we will do your work also but you will have to take care of us. You should feed us well, you should give us water, you should keep our living place neat and clean If we are hurt you must take us to the doctor, you must give us work according to our capacity. You must make us bath, you must not cut our jungles nor kill our fellow beings. Let us follow the principle of live and let others live. Then we all will be happy.

---

Teacher:- So, children we must take care of our jungles and animals. From the story I narrated just now, what moral do you get?

Students :- To keep our animals happy, we must do following things.

We must keep the animals clean. We must keep their surroundings clean, We must not take work from them, beyond their capacity. Whenever they are hurt, they should be taken to the doctor. We should not cut their forests, we must not beat them, we must give them sufficient amount of food.

Teacher:- Very Good! Write all these points in your note books. For each point, you will have to draw pictures and that is your homework, okay, see you tomorrow.

## **UNIT II**

Written test

10

Q.1 Indicate whether following statement is true or false.

3(1x1/2)

1.Silk is a plant product.

2. We must feed plants with milk.

3. We must feed animals grass.

4. Caterpillar is the best friend of farmer.

5. Cow gives us vegetables.

6. We must beat animals.

Q.2 Answer the following in one sentence. 7

1. Which are the two main components of living world? 1

2. Write names of harmful plants. 1

3. Write names of harmful animals. 2

4. Write the names of farmers friends. 1

5. Plants breath which air? 1

6. Animals inhale which air? 1

Oral Examination 10 (1x5)

1. How to take care of animals?

2. How to take care of plants?

Activity test 30 marks

In front of you there is a bundle of pictures. what you have to do is make three piles from these. In one pile plant products and in another pile keep animal products. You may find some pictures which may not be either plant products and animal products put them as miscellaneous.

Answer Key for unit II tests.

Written test

A-1

1. wrong,

2. wrong,

3. right,

4. wrong,

5. wrong,

6. wrong,

A-2

1. Living world has two main components, plants and animals.
2. Harmful plants are, tobacco, cactus and babool.
3. Harmful animals are termite, mosquito, cockroach, etc., etc.,
4. Farmers friends are snake, ox and earthworm.
5. Plants inhale carbondioxide.
6. Animals inhale oxygen.

Oral answer key.

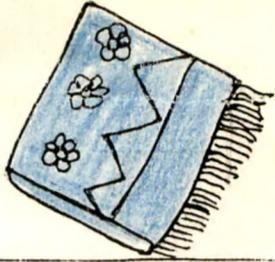
1) Animal care.

1. We must bathe our animals.
2. Their surroundings should be kept clean.
3. Work should be taken according to their capacity.
4. If they get hurt we must take them to doctor.
5. Their forests should not be cut.
6. They should be given appropriate amount of food and water.
7. We should not beat them.

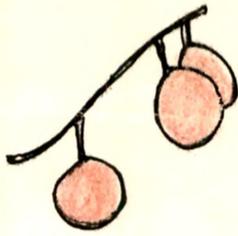
2) Plant care.

1. Plant should be kept in sunlight.
2. Plant should be watered regularly.
3. Extra grass growing around it should be removed.
4. Fertiliser has to be added to the plant.
5. Soil around the plant should be made soft.

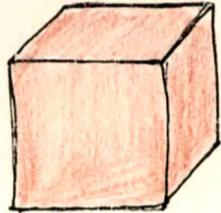
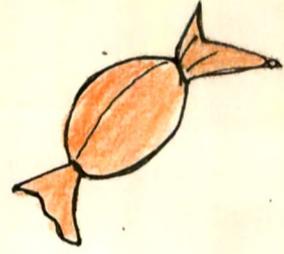
SILK SAREE



LITCHI



TOFFEE



TEA

OIL TIN



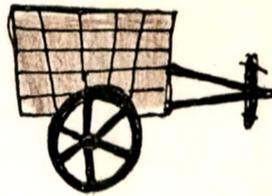
ROPE



RING



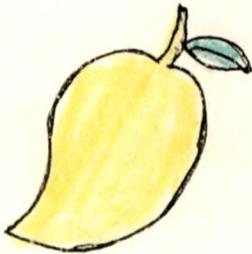
CART



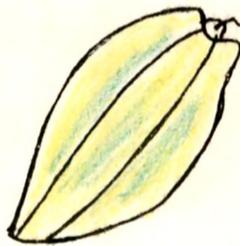
SUN FLOWER



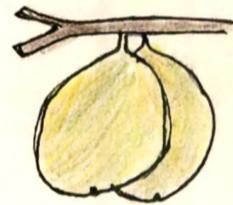
MANGO



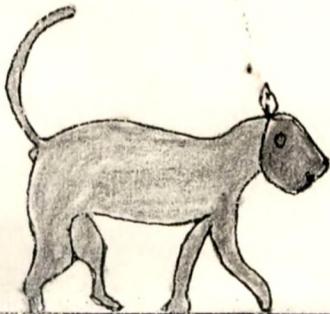
PAPPAYA



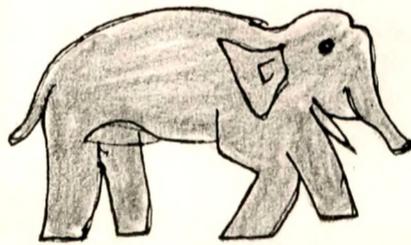
PEAR



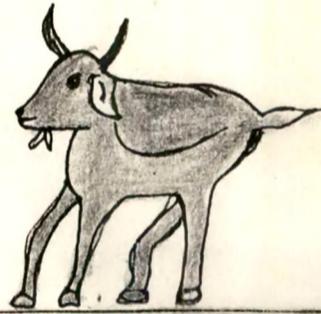
MONKEY



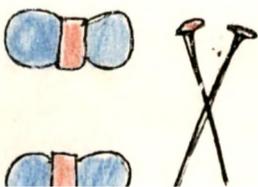
ELEPHANT



GOAT



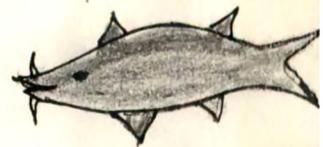
WOOL



LEATHER ARTICLES



FISH



COD LIVER OIL



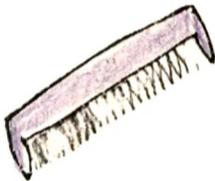
FERTILIZER



GLASS



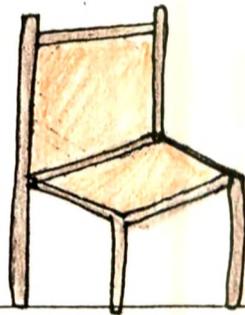
COMB



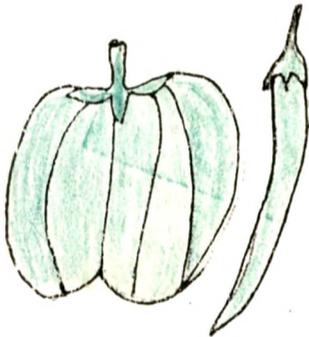
CHOCOLATE



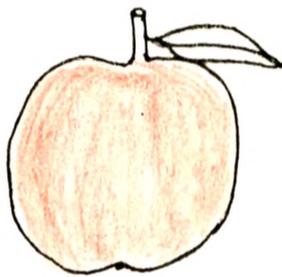
CHAIR



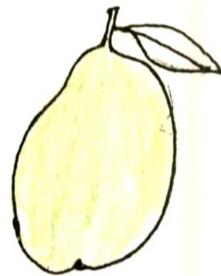
CHILLY



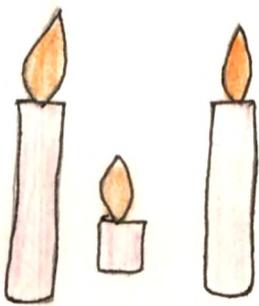
APPLE



GUAVA



CANDLE



LAC JEWELLERY



LEATHER ARTICLES

6. If there are germs, pesticides have to be sprayed.

**Activity test**

**Distracters**

- |                |                   |                  |                |
|----------------|-------------------|------------------|----------------|
| 1. glass       | 2. kitkat wrapper | 3. plastic chair | 4. television  |
| 5. comb        | Plants            | 6. chilly.       | 7. apple       |
| 8. guava       | 9. cherry         | 10. chocolate    | 11. coir       |
| 12. fertiliser | 13. tea           | 14. food plate   | 15. oil        |
| 16. cart       | 17. sunflower     | 18. mango        | 19. Papaya     |
| 20. Chickoo    | Animals           | 21. monkey       | 22. elephant   |
| 23. goat       | 24. wool          | 25. shoes        | 26. fish       |
| 27. lac        | 28. candles       | 29. purses       | 30. fertiliser |

**Unit III Sky and Earth**

**Instructional Objectives**

1. Students will be able to identify different celestial bodies.
2. Students will be able to draw various planets in the solar system.
3. Student will be able to mention directions with the help of sun.
4. Students will be able to identify directions with the help of pole star.
5. Students will be able to state month formation with the help of moon.
6. Students will be able to describe artificial satellite in their own words.
7. Students will be able to state in their own words regarding meteors, galaxy, milky way, planets, stars.

**Sun and Earth**

**30 minutes**

Teacher:- Students, you might have heard that man has reached moon.

Students:- Yes, miss.

Teacher:- Do you know that one Indian has also landed on moon?

Students:- Yes, miss.

Teacher:- His name is Rakesh Sharma. Many people have gone in space and have brought number of photographs. In this blue sky, that we see, there are number of hidden things. These things were photographed by the different satellites carrying huge cameras. Now, those hidden things and information about them, has come to forefront which we will be studying today. what is the name of planet on which we stay?

Students:- Earth.

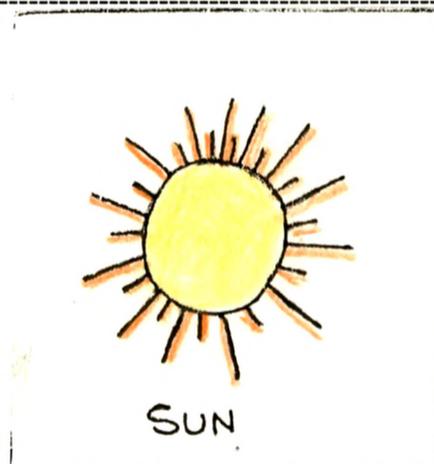
Teacher:- Good. When we see up what do we see?

Students:- Sky.

Teacher:- Good. Today, we shall study about Earth and Sky.

( Teacher shows model of Sun)

**Figure 3.1 Shows Model of Sun**



Teacher:- Are you familiar with this model? Who's model is this?

Students:- It's Sun's model.

Teacher:- Right. Let us listen to introduction of sun in his own words.

(Voice on tape recorder)

**Figure 3.2 Sun's Introduction on Tape Recorder**

---

My name is sun.

Every morning, I come on the Chariot of seven horses.

The direction in which I rise, is east.

The direction in which I set, is west.

Direction to my right is north and to my left is south.

With the stars, galaxies, meteors, comets and planets I form a solar system.

I help plants to prepare their food

I spread warmth and light every where.

I am a huge fire ball.

I have nine planets. Mars, Venus, Mercury, Earth, Jupiter, Neptune, Pluto,

Uranus and Saturn.

---

Teacher: Well, Students now tell me in which direction sun rises?

Students:- Sun rises in East.

Teacher :- Sun sets in which direction?

Students:- Sun sets in west direction.

Teacher:- Which is the direction on your right side, if you are facing the sun?

Students:- If we are facing the sun, then direction to our right side will be north.

Teacher:- Which is your right hand?

Students:- This. ( Raise their hand)

Teacher:- And this is my right hand. ( raises her hand). Which is sun's right side?

Sun and your right sides are different, isn't it?

Students:- Yes.

Teacher:- So, towards your right side, there is which direction?

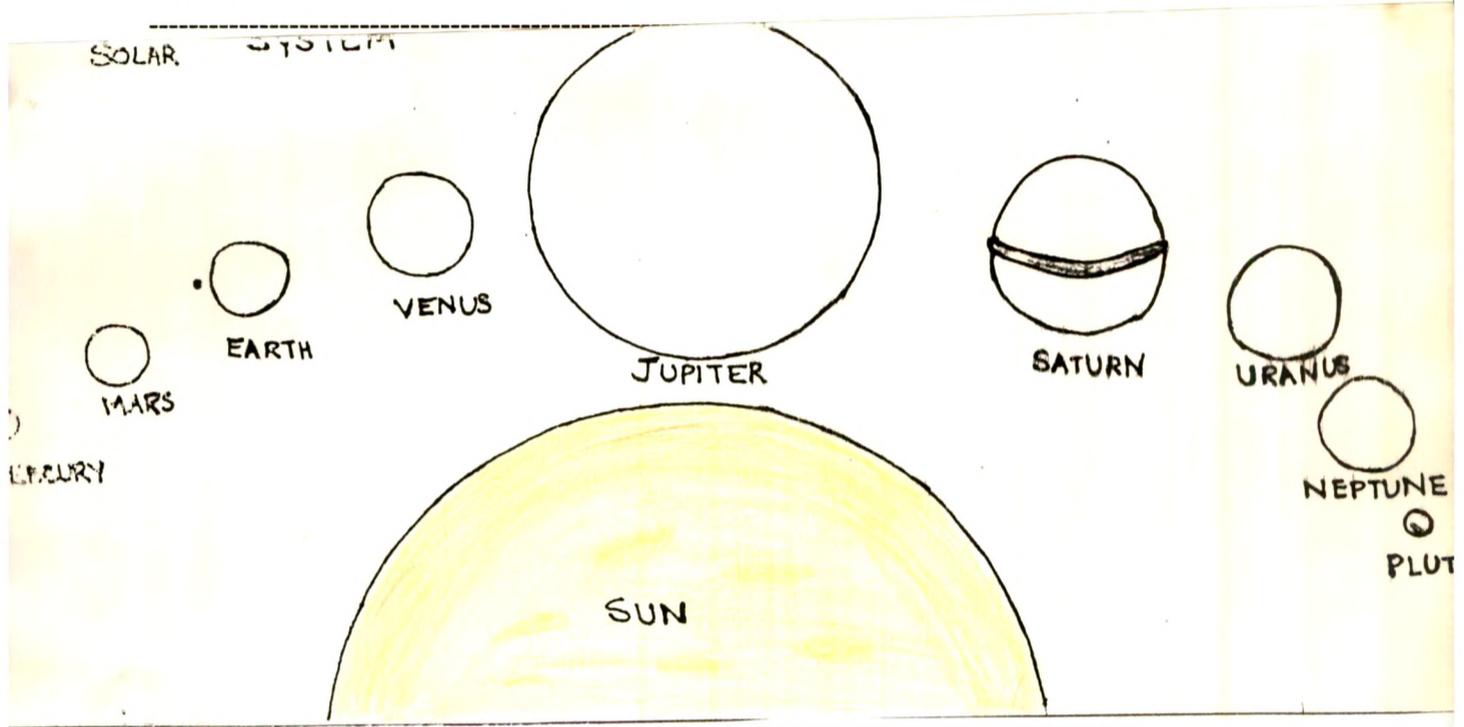
Students:- To our right side is south direction, if we are facing sun.

Teacher:- To your left it is which direction?

Students:- North.

( Teacher shows nine planets and a sun in a chart form)

Figure 3.3 Chart of Nine Planets



Teacher:- Sun has how many planets?

Students:- Nine.

Teacher:- What are the names of these nine planets?

Students:- Mars, Mercury, Venus, Earth, Jupiter, Saturn, Uranus, Neptune and Pluto.

Teacher:- Fine! What is meant by solar system?

Students:- Sun with its nine planets, stars, meteors, comets, galaxy together form a solar system.

Teacher:- Good, you have understood about sun very nicely.

Teacher:- What will happen if sun disappears and does not come back?

Students:- How will the plants prepare there food?

Teacher:- Then, what will happen?

Students: What will we eat? From where we will get the warmth? How will we get oxygen? Teacher, if the sun disappears, we will all die.

Teacher:- That's correct. Which is the smallest planet?

Students:- Mercury.

Teacher:- Which is the biggest planet?

Students:- Jupiter.

Teacher:- Which is the most beautiful planet?

Students :- Saturn.

Teacher:- On which planet we stay?

Students:- We stay on planet Earth.

Teacher:- Good! some time back we hear introduction of sun and now let us hear what earth has to say about it.

**Figure 3.4 Introduction of Earth on Tape Recorder.**

-----  
I am earth. On my surface, there is one fourth land and three fourth water.

I am the only life supporting planet.

On my land, people make houses. You will find beautiful plants and animals.

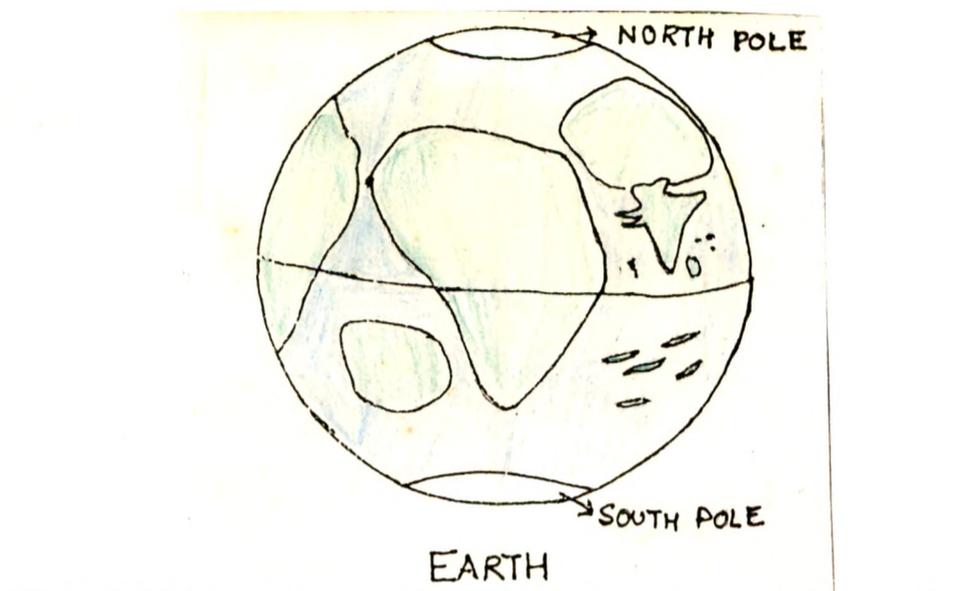
On my surface, there are mountains, rivers, valleys, grounds, seas, and oceans.

Like a top, I constantly revolve on my axis around the sun.

Moon moves around me. I am one of the planet of the solar system.

Moon is my Satellite.

I have a cover around myself which is known as atmosphere.



(Teacher calls three children)

You are sun, you are earth and you are moon. What you have to do is that Sun has to move on his axis round and round, Earth has to move around the sun on her axis like this. (Teacher demonstrates). Moon has to move around the earth. Now, maintain appropriate gap and move.

Teacher:- Look here children, sun moves on its axis, earth moves around sun and moon moves around earth.

Teacher:- Earth moves around whom?

Students:- Earth moves around the sun.

Teacher:- Who moves around earth?

Students:- Madam, moon moves around earth.

Teacher:- What are the proportions of land and water on the planet earth?

Students :- Earth has three fourth water and one fourth land.

Teacher:- Which layer surrounds earth?

Students:- Earth is surrounded by an atmospheric cover.

Teacher:- Which things are there on earth?

Students:- Earth has ground, river, houses, mountains, plants, animals, valleys, etc., etc.,

Teacher:- Good! Children do you know that earth is the only planet that supports life and sustains life? Its only on this planet that people live. **We have just one earth to live on and we must take care of it to our best.**

Teacher:- So, children, today we studied about sun and earth. Now tell me, what does sun give us?

Students:- Sun gives us light and warmth.

Teacher:- How sun is useful to Plants?

Students:- Sun helps plants to prepare their food.

Teacher:- If you are facing sun, which is the direction on your left side?

Students:- If sun is rising in front on us then the direction to our left will be north.

Teacher:- If you are facing the rising sun, which is the direction towards your right side?

Students:- If we are facing the rising sun then the direction to our right will be south.

Teacher:- Good! Now write down, your homework in your notebook. Draw the picture of the solar system.

### **MOON AND POLE STAR**

**30 Minutes**

Teacher:- Good morning, children.

Students:- Good morning, teacher.

Teacher:- Have you done your homework?

Students:- Yes, teacher.

Teacher:- Very Good!

Teacher:- Yesterday we studied about earth and sun, if you have any doubts you can ask.

Students:- We have understood properly.

Teacher:- Who moves around the planet earth?

Students:- Moon moves around the earth.

Teacher:- Now let us listen to the introduction of moon.



**Figure 3.5 Introduction of Moon on Tape Recorder.**

---

I am moon.

I am a satellite of earth.

I don't have my own light.

I glow due to sun rays which fall on my surface.

Depending on my shape and sizes people have made month pattern.

From new moon day to full moon day it is 'Shuklapaksh'.

From full moon day to no moon day it is 'Krishnapaksh'.

I move around earth.

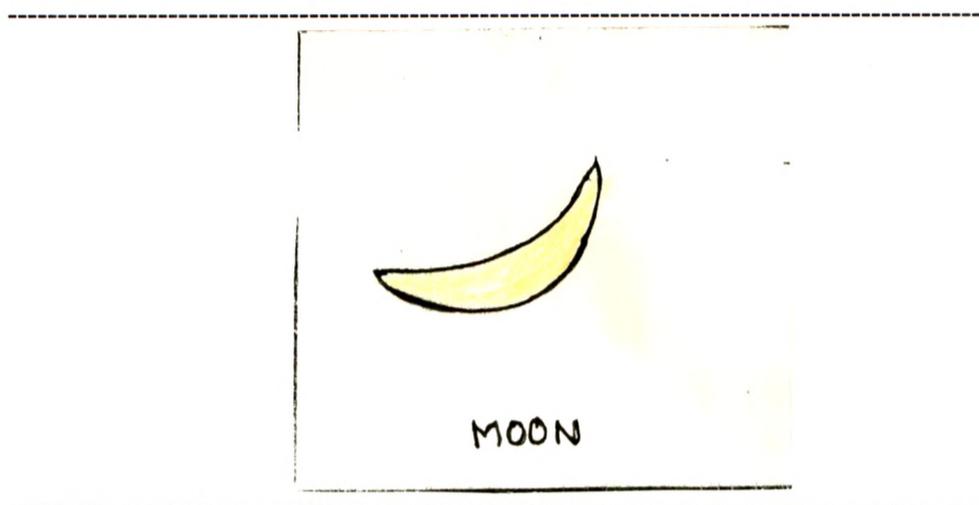
Now a days many beautiful satellites of different shapes move around with me.

Which human beings have sent.

I like them very much.

---

**Figure 3.6 Model of a Moon**



Teacher:- Earth moves on its axis and around the sun. Moon moves around the earth. While moon is moving around the earth, the shadow of earth falls on moon. When the shadow covers the moon totally, we call it as no moon day. When the moon shines completely with no shadow on it, we say, it is a full moon day. Moon exhibits sixteen different shapes.

Teacher:- When moon is not seen what do we call that day?

Students:- When moon is not seen, we call that day as no moon day.

Teacher:- When a complete moon is seen, what do we call that day?

Students:- We call it as a full moon day.

Teacher:- What is the name given to a fortnight from new moon day to full moon day.

Students:- From new moon day to full moon day it is known as "Shuklapaksh".

Teacher:- What is the name given from full moon day to no moon day?

Students:- From full moon day to no moon day, we say it is "Krishnapaksh".

Teacher:- Moon is who's satellite?

Students:- Moon is earth's satellite.

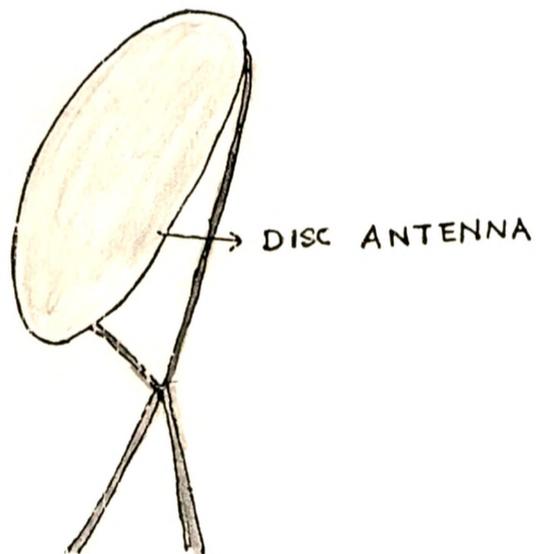
Teacher:- Does moon have its own light?

Students :- No, it shines due to the sun rays falling on its surface.

Teacher: Moon talked to us about some artificial satellites. Let us discuss about them. Children, sitting at home you see a cricket match which is played very far from our city. You can see number of programmes on your television sets. Have you seen big dish antennas?

Students:- Yes, miss.

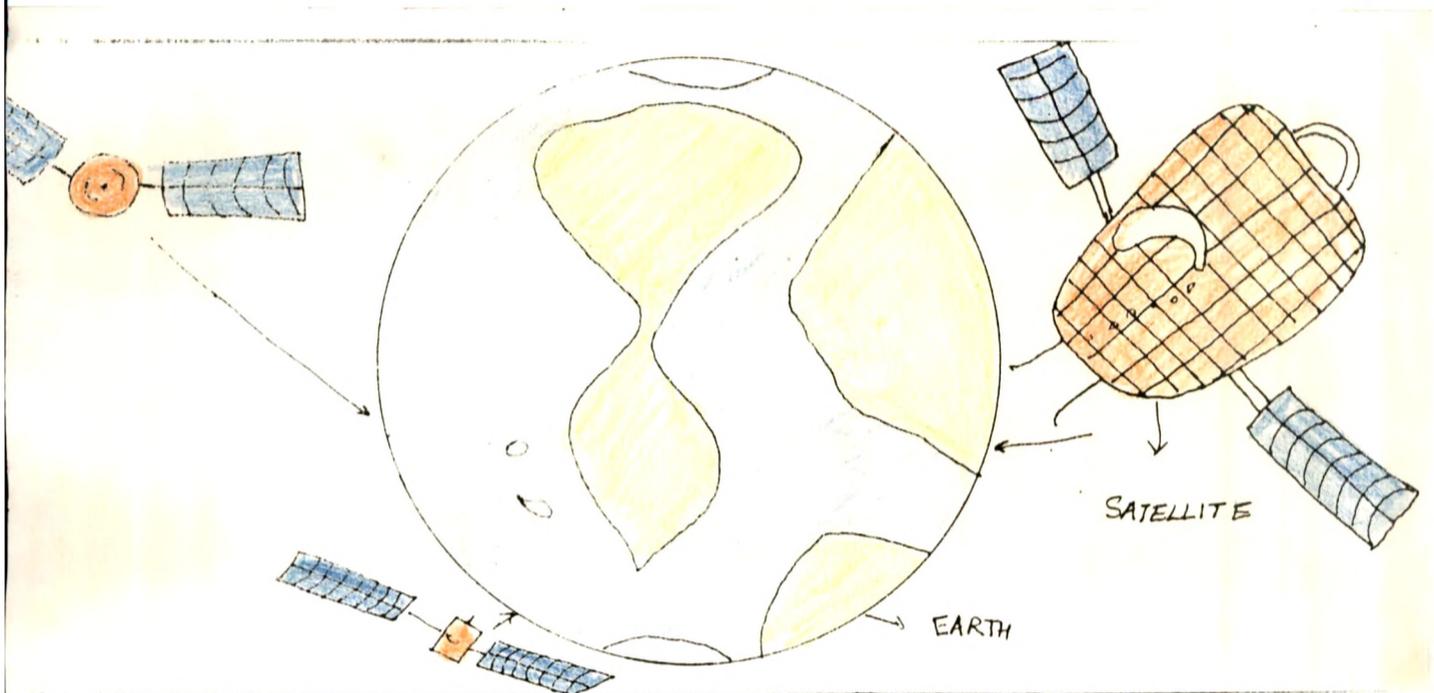
**Figure 3.7 Picture of Dish Antenna**



Teacher:- The antenna that you have seen are receiving antenna. Likewise, there are sending antennas. Through these antennas, the programmes are send to the satellites. From the satellites, it is reflected to your receiving dish antenna.

Now, look at this chart.

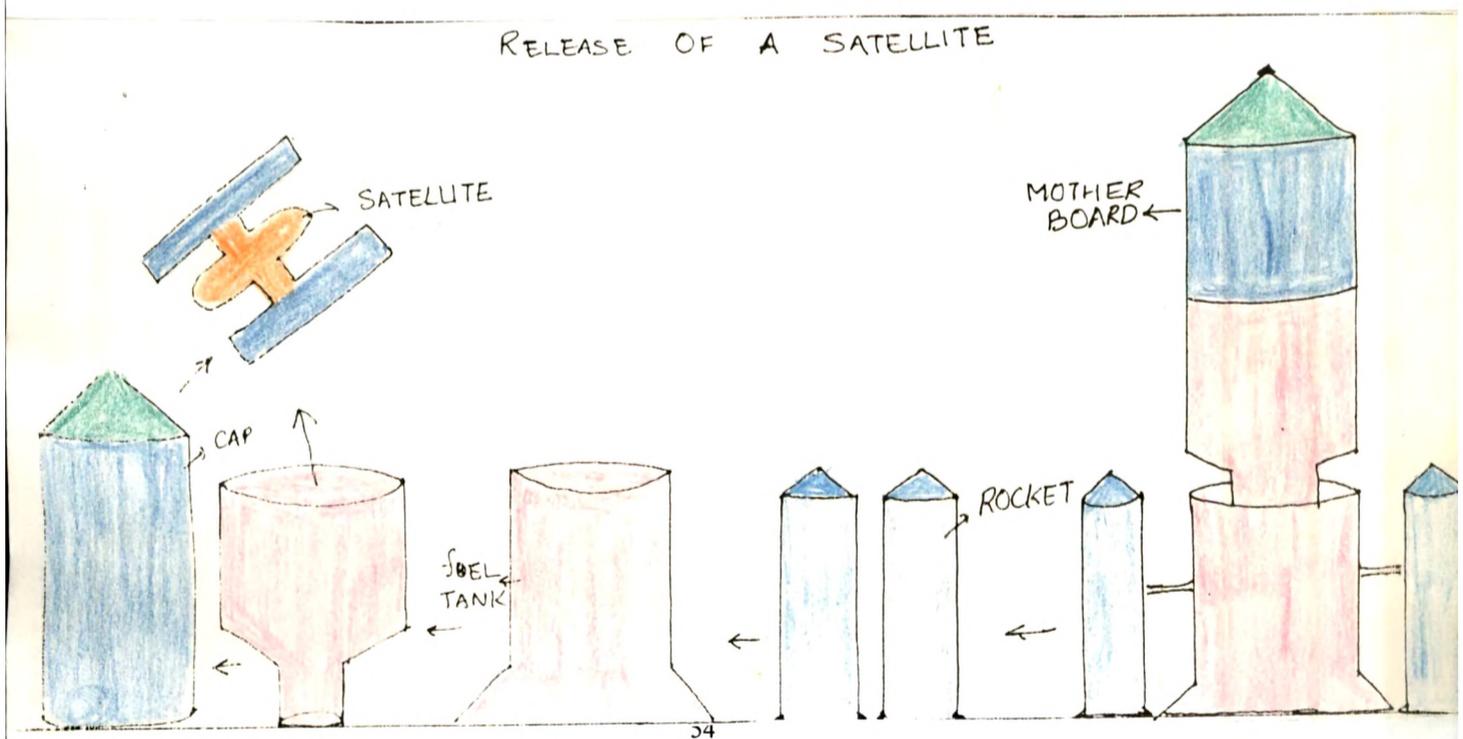
**Figure 3.8 Message sent to the satellite**



Teacher:- But how does it reach there? Let us see. See this model carefully.

Now look at this picture.

**Figure 3.9 Release of a Satellite**



Gradually these parts get separated and the satellite is freed in the orbit.

Teacher:- Now you tell me, how do we see television programmes in our houses?

Students:- The artificial satellite picks up the programmes from the sending dish antenna? The artificial satellite then beams it down to receiving antenna and finally it is seen on our television sets.

Teacher:- That's excellent! India has sent number of artificial planets in the orbit like Rohini, Aryabhata, etc.

Teacher:- You can identify directions in the day time but can you identify direction at night also?

Students:- No, miss.

Teacher:- Before I tell you, about how to see direction at night, I will tell you an interesting story. (Teacher tells the story of pole star)

### **Figure 3.10 Story of Dhruv**

---

Once upon a time there was a king named Utanpad. He had two queens. Both the queens had one son each. Both were very good. The younger queen was a nice lady, but she had a desire that only her son should become the king. So, she started poisoning king's mind with wrong information about the elder queen and her son. King had full confidence in the younger queen. The king believed in whatever the younger queen said.

One day what happened, that both the princes were playing in the garden. When they finished playing they ran towards their father, the king. Both the

princes were wearing dirty clothes filled with the soil. The younger prince hugged his father. When the elder one (Dhruv) tried the same, king pushed him away from him. Elder prince felt very bad, and he started crying. The elder prince went to his mother and narrated the entire incidence. Mother made him understand, that God is the highest authority. Lets pray to him. God will give you a better place to sit in. God will do justice with you.

So, the elder prince went in search of God. He went to the forest where the saints were praying to God. He asked them about path to reach god. The saints told him " Look my child, road to God is very difficult. You are a delicate young prince, better return to your own house. You cannot remain hungry for many days. You cant stand on one leg, for years together to call God." But Dhruv was very firm. He said, " Oh! Gurudev, Thank you, you have indirectly shown me the path to reach God. I will certainly do penance and get God to do justice with me". He stood on one feet and prayed to God continuously days passed by. One day God appeared in front of Dhruv and asked " I am pleased with you tell me son what is your problem?" Dhruv said " I want to sit in my father's lap." God said "My child, I will give you an ultimate seat, among the stars. You will be known as pole star and, you will show direction to people. My child, now you are immortal." This is how a small boy become an immortal pole star which shows direction to people even today.

---

Teacher:- Now let us hear what pole star has to say about itself.

**Figure 3.11 Introduction of Pole Star on Tape Recorder.**

---

I am a pole star.

I have a beautiful and a unique shine.

I show direction to people.

I always shine in north.

I have seven teachers.

You identify my teachers as Saptrishi.

Their names are, Marichi, Atri, Angiras, Pulah, Pulatsya, Kratu, and Vashishta.

I always stay near my teachers.

The direction opposite me is known as south.

The direction to my right side is east and to my left side is west.

I always show direction to travellers.

---

Teacher:- Well children, now tell me, Pole star is found in which direction?

Students:- The pole star is found in north direction.

Teacher:- Which is the direction opposite to pole star?

Students:- South direction is pole star's opposite direction.

Teacher:- Which is the direction to its right?

Students:- The direction to its right side is east.

Teacher:- Which is the direction to its left side?

Students:- The direction to its left side is west.

Teacher:- Pole star's right side is your which direction?

Students:- left

Teacher:- Pole star's left side is your which side?

Students:- Right side.

Teacher:- Very good! Let us see how to identify pole star?

See this picture.

**Figure 3.12 How to locate Pole Star?**



This is the picture of Saptrishi. At night when you see in the sky, you will see a set of seven stars in a group like this picture. Of these seven stars, you join a line between the first two stars. We get a meeting point. At this juncture, you can see the pole star.

Teacher:- What are the names of pole star's teacher?

Students:- Atri, Angirus, kratu, Vashishta, Pulatsya, Marichi, Pulah, are the names of pole star's teachers.

Teacher:- Good, You know all the names. What does pole star do?

Students:- It shows direction to travellers at night.

Teacher:- Did you enjoy the lesson?

Students:- Yes.

Teacher:- Okay, now write down your homework. Go to your terrace with your parents, and try to see moon and saptrishi. Try to identify, whether full moon is near by or no moon. How will you identify whether no moon is around or full moon is around?

Students:- From the moon shape.

Teacher:- Okay, bye children. See you tomorrow.

Students:- Bye teacher.

### **Celestial Objects**

**30 minutes.**

Teacher:- Good morning, children.

Students:- Good morning, teacher.

Teacher:- Did you see the sky yesterday? could you identify saptrishi and moon? Have you drawn the pictures?

Students:- Yes, teacher. We have drawn the pictures.

Teacher:- Monitor, collect the homework sheets and keep on the table. Let us see ahead. When you were seeing the sky, you might have seen the stars moving in the sky. You might have seen the stars with tail.

Students:- Yes miss.

Teacher:- Such falling stars or moving stars are called as Shooting stars. Let us hear about introduction of shooting stars.

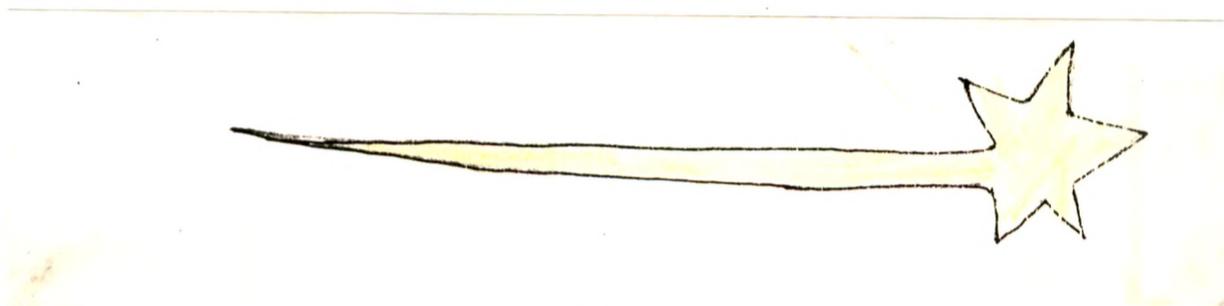
**Figure 3.13 Introduction of Various Celestial Bodies on Tape Recorder.**

**Meteors**

Sometimes at night from the sky, you see some stars falling these stars are known as shooting stars.

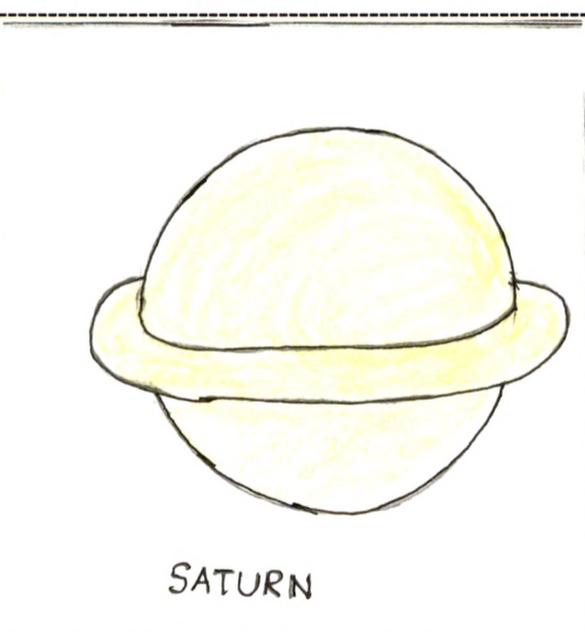
**Comet**

Some stars have tail behind them such stars are known as comets.



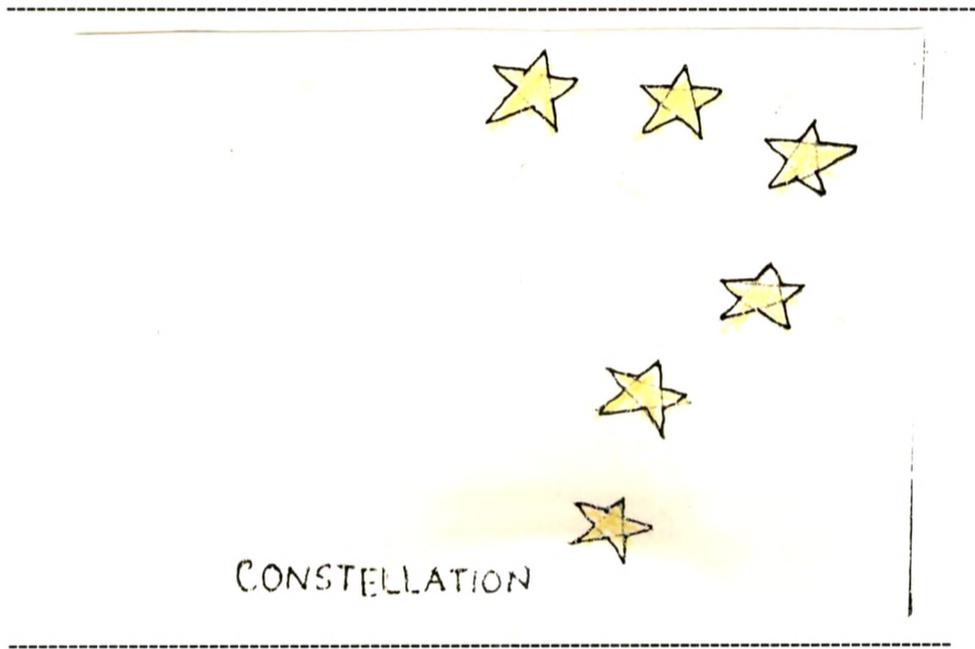
**Saturn**

Around me there is a beautiful ring. I am the most beautiful planet. I move around sun.



## Constellation

A group of stars forms a particular shape and this shape is known as constellation.



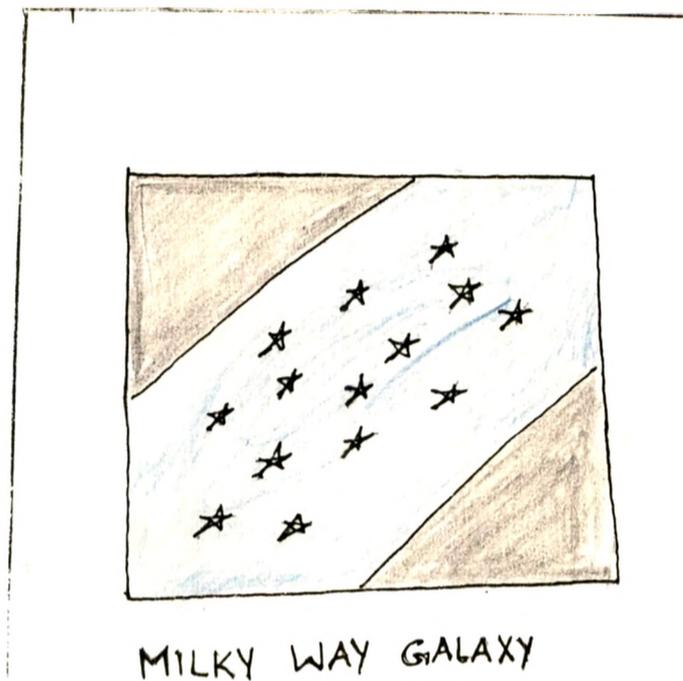
Teacher:- What is the name of tailed star?

Students:- Comet.

Teacher:- What is the name given to falling star?

Students:- Shooting star.

## Milky Way Galaxy



Teacher:- You might have seen, in the sky, a belt full of stars.

What is the name of this belt?

Students:- Milky way galaxy.

Teacher:- Children, Our solar system is the part of this milky way galaxy. Small stars that you see in night, some of them are bigger than sun, but when we see them small they appear very small because they are very far from us. The stars have their own light. Sun is the nearest star that we see. How will you identify planet Saturn?

Students:- It has a beautiful ring around it.

Teacher:- That's right. What is a constellation?

Students:- A group of star come together and form a specific shape. They are called constellation.

Teacher:- Tell me, what is a shooting star?

Students:- A falling star is known as shooting star.

Teacher:- What is the name given to a group of stars arranged in a definite manner?

Students:- Constellation.

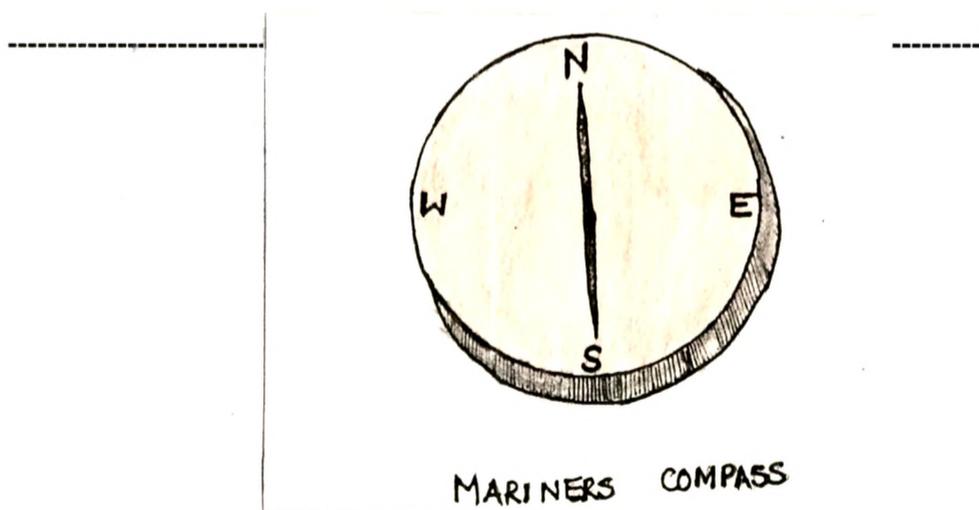
Teacher:- What is the name of stars forming a milky belt?

Students:- Milky way galaxy.

Teacher:- Good! Write your homework, Go in your terrace or from the open ground try to identify milky belt, Saturn, shooting star and also draw their pictures. In the day time you can make out the direction by seeing rising sun or setting sun.

At night you can make out the directions with the help of pole star. Correct. But think of a condition. It's night and the sky is full of clouds and you are in totally new place. How will you identify you are in which direction and in which direction you want to go?

**Mariners Compass**



Children, there is a device called mariners compass. Mariners compass is a magnetic device, with the needle shaped magnet. This magnet settles only in north south direction. So, wherever you are, you will come to know north and south direction, and then it becomes easy to identify other two direction.

Teacher:- Look at this instrument. This is a mariners compass. How will navigators and sailors identify the direction if they are lost in a dark night?

Students:- They will use this mariner compass and easily find the direction.

Teacher:- Good! Children, now see you tomorrow.

Students:- Bye teacher.

### UNIT III

#### Written test

Q.1 Write whether the following statements are true or false.

10 (1x1)

1. Moon is a satellite of sun.
2. Sun does rise and set everyday.
3. Sun is the planet of earth.
4. Sun moves around other planets.
5. Moon doesn't have light of its own.
6. The sun set is south direction.
7. Pole star is always visible in west.
8. There is no decrease or increase in moonlight.
9. Pole star is always seen in one direction at in one place.
10. Falling star is known as shooting stars.

Q.2 Fill in the blanks

5(1x1)

1. Sun light helps plants in preparing \_\_\_\_\_
2. Tailed star is known as \_\_\_\_\_
3. In the sky the milky path of stars is known as \_\_\_\_\_
4. Sun has \_\_\_\_\_ planets.
5. Moon moves around \_\_\_\_\_

Q.3 Who am I.

5(1x1)

1. I give light to every one. \_\_\_\_\_
2. I move around earth. \_\_\_\_\_
3. Life exist on me. \_\_\_\_\_
4. I have a beautiful ring around me. \_\_\_\_\_
5. I am an identification for north direction. \_\_\_\_\_

Q.4 Answer the following in one line.

10( 1x2)

1. What is a solar system?
2. Which instrument is used by mariners to find the direction?
3. What are constellation?
4. Sun rises in which direction?
5. Sun sets in which direction?

Oral Examination.

1. In the day time how will you identify the directions?
2. At night how will you find out directions?
3. If its dark how will you came to know the direction.

Activity test.

10 (1x2)

Draw the pictures of objects mentioned here also write their names.

1. Sun 2. Moon 3. Saturn 4. Pole star 5. artificial satellite

Answer key for unit III tests.

Written test

A-1

1. wrong      2. right      3. wrong      4. wrong      5. right  
6. wrong      7. wrong      8. wrong      9. right      10. right

A-2

1. Food      2. comet      3. milkyway galaxy      4. nine      5. earth

A-3

1. sun      2. moon      3. earth      4. saturn      5. pole star.

A-4

1. Solarsystem means sun its nine planets with their satellite, stars, meteors, comets, galaxies etc. 2. Mariners find there way with the help of miners compass.

3. Stars arranged in a specific manner constitute a constellation.

4. Sun rises in east.

5. Sun sets in west.

Oral answer key

1. In the day time direction can be made out from sun. The sun rises in east, its opposite direction is west, to its left is south and to its right is north.

8. Students will be able to reason out why natural fertiliser is better than artificial fertiliser.

9. Students will be able to describe soil erosion.

10. Students will be able to explain various ways to stop soil erosion.

Teacher:- Students, earlier we have learned about nine planets. We stay on which planet?

Students:- Teacher, we stay on planet earth.

Teacher:- Good! Do you know earth is the only planet which supports life? What is the percentage of water and land on earth?

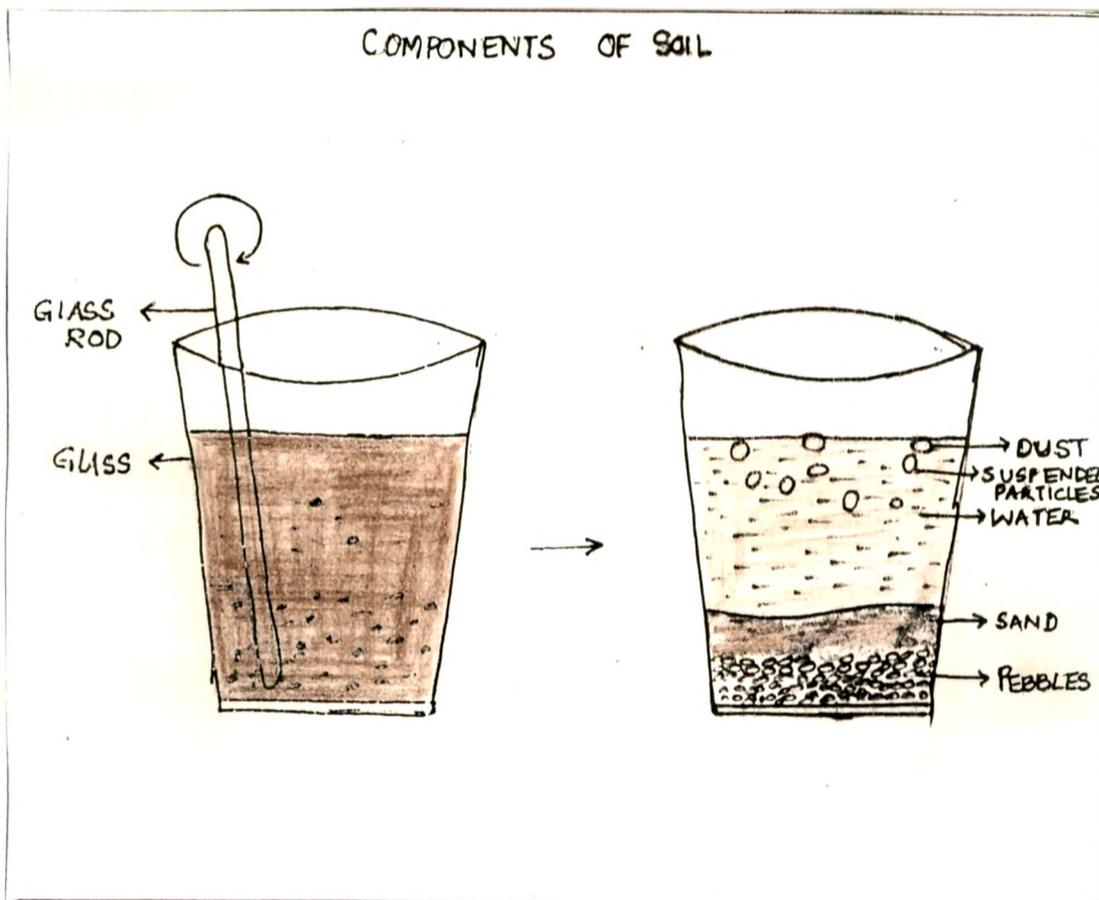
Students:- On Earth, there is 75% of water and 25% of land.

Teacher:- All of us stay on this 25% of earth. Build houses, schools, playgrounds, garden, plants and animals also live on this 25% of land. Imagine if the land will not be there, then what will happen? Where will the plants grow and what will we eat? From where we will get Oxygen? From where will we get vegetables fruits, flowers, etc., etc.? If land is not there, plants will not be there, if plants are not there, Oxygen will not be available, if oxygen is not available, we will all die. Now you might have understood the importance of land. Plants need soil to grow, if plants were not there then your benches also will not be there and no paper, or pencil. What will we have if there is no soil?

Students:- If there is no soil, where will the plants grow and what will animals and human beings eat. In that case all of us will die.

Teacher:- Right! land is of different types some have fine soil particles whereas others have stones and even other would contain sand. Let us see which are the components of soil.

Figure 4.1 Components of the Soil



Take a glass, put some soil in it. Now pour some water in it and stir the glass. Let it settle for few hours. What you will see? You will have to identify various components of soil. You will see at the bottom, some small pebbles. On top of the pebbles, there will be a layer of sand. Above which, there is water containing, small soil particles due to which soil does not look clear. This soil contains mineral particles. Sometimes, plant and animal remains are also seen swimming. From this experiment which components of soil can be identified?

Students:- From this experiment, we come to know that the components of the soil are pebbles fine soil, soil particles, minerals, sand particles, plants and animal remains.

On earth there is three fourth water and one fourth land. Most of the things live on land. Land is a support for every one. Land is made up of soil stones mud pebbles, animal remains plant remains.

Teacher :- What will happen if there is no land?

Students:- Where will plants grow, what will we eat, and finally all of us will die.

Teacher:- What is the composition of soil?

Students:- The components of soil are stones, pebbles, sand, plants remains, animal remains, minerals, mud and dust particles.

Teacher:- That's right! Now write down your home work. Take two earthen pots, in one of the pot fill soil and in another one fill some sand. In both the pots sow a seed. Observe which seed germinates faster and let me know.

Teacher:- Children. See you tomorrow.

### **Types of Soil and Crops growing in them.**

Teacher:- Good morning, children.

Students:- Good morning ,teacher.

Teacher:- Have you done your homework?

Students:- Yes teacher.

Teacher:- What is the composition of soil?

Students:- The soil is composed of mud, minerals, pebbles, stones, sand, plant remains and animal remains.

Teacher:- Today, we will learn about different type of crops growing in different kinds of soil.

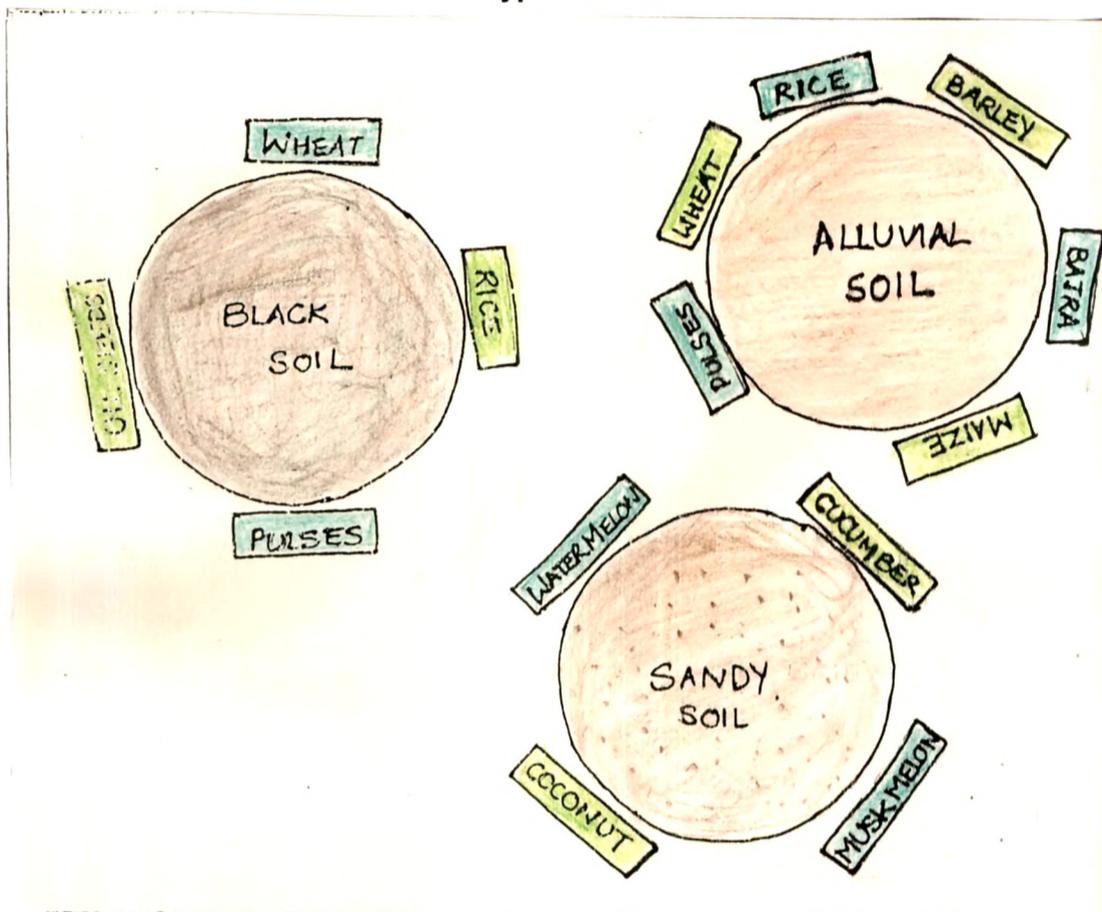
Plants need soil to grow. Do you think that different types of soil will have different components? It is soil, after all it will have same components. Isn't it?

Students:- Yes, Teacher.

Teacher:- You are very right, my child. The composition of soil will be same but there are other things which help in differentiating one soil from another. Like, the colour of the soil, the fertility of the soil etc., We will see them one by one.

Look at this chart.

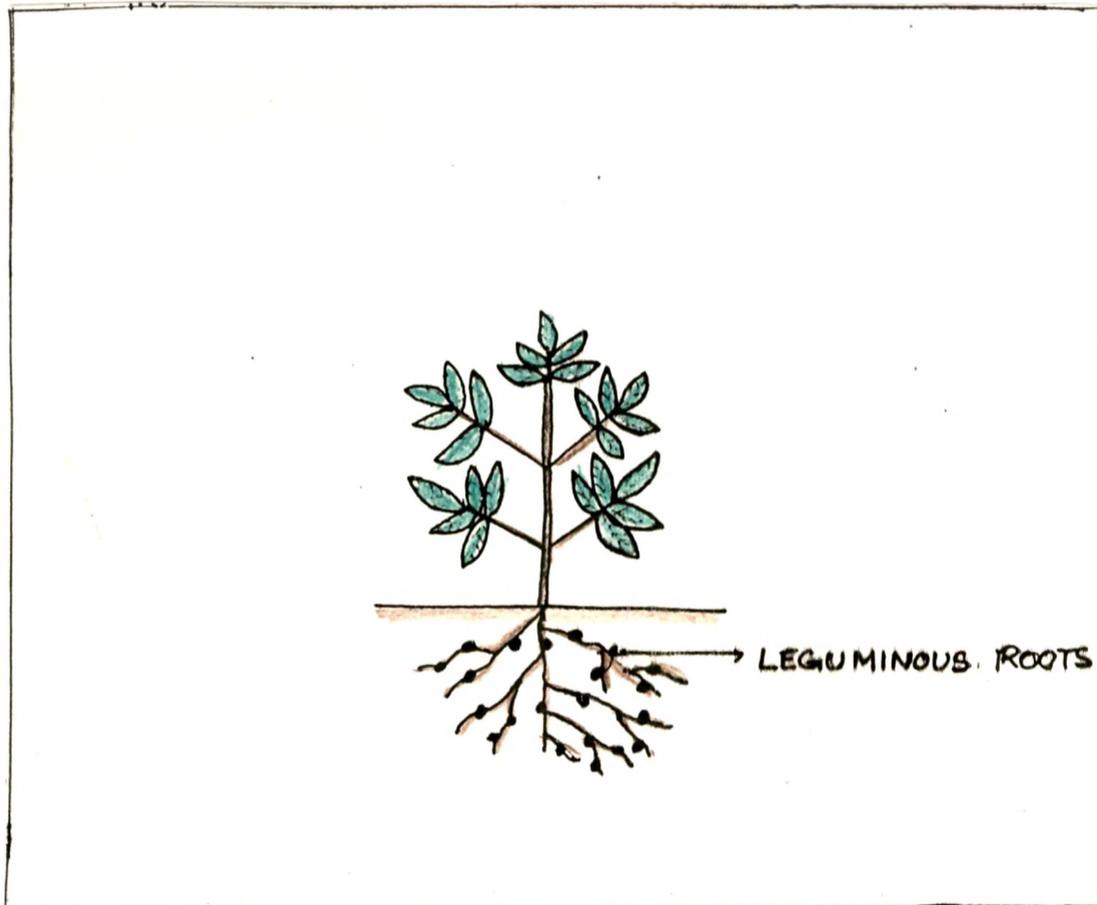
Figure 4.2 Chart showing Different types of Crops Growing in different type of Soil.



Teacher:- In black soil, there is less of sand and more of mud. This type of land is suitable for growing wheat, jowar, pulses, and oil seeds. Another type of soil is fertile alluvial soil and this soil is formed due to the silt collection at the bank of the rivers. It is very fertile soil. This type of soil is best suitable for rice, millet, barley, wheat, sugarcane, etc., etc., Some of the rivers have sandy river beds. On such sandy river beds, some special types of crops grow. On sandy banks, farming is a difficult job indeed. Such sandy banks are suitable for coconuts, water melons and cucumber. The soil on the coastal areas are suitable for date, palms and coconut.

If we keep on growing, same type of crop, in the soil, the soil gives less and less yield. This means that production goes down. Fertility goes down. In order to restore the fertility of soil, we must grow alternate crops. It means that if one time wheat is grown, next time grow some pulses. The pulses have some bacteria in their roots which returns fertility of soil by releasing much needed nitrogen. In soil, there are number of germs, which cannot be seen through naked eyes.

**Figure 4.3 Picture of Pulse's plant**



Look here, this is a trigonella plant. In its roots, you see something bulging and in this bulging structure the bacteria's stay. In addition to growing pulses one can

also give fertilisers to the soil. The fertilisers are of two types. One is an artificial fertiliser and the other one is natural one. The natural fertiliser increases the capacity of soil to absorb water and it does not have any side effect in a long run. By the use of natural fertiliser, the composition of soil will become good. Natural fertiliser is made up of the waste that is excreta of animals, human beings and plant remains. Whereas, the artificial fertiliser is made up of chemicals. It increases the fertility of soil but in long run it is not good for the soil.

We should not grow similar type of crop everytime on the soil as it reduces the fertility of soil.

Between two wheat crops one crop of pulses should be grown. Natural fertiliser is better than artificial fertiliser. As the land becomes fertile and its water absorbing capacity will increase.

Teacher:- Students, How does the fertility of soil decrease?

Students:- If we keep on growing the same type of crop everytime, the fertility of soil decreases.

Teacher:- How can we increase the fertility of soil?

Students:- We can increase fertility of soil by alternating wheat crop with pulses crop, or by giving Fertilisers.

Teacher:- Very good Children. Which are the two types of fertilisers?

Students:- Fertilisers are of two types. One is natural fertiliser and another is artificial fertiliser.

Teacher:- Good! Which type of fertiliser is good for soil and why?

Students:- Natural fertilisers are better as they increases the capacity of soil to absorb water.

Teacher:- Very good! Natural fertilisers are made out of which things?

Students:- Natural fertiliser are made from plant remains animal remains excreta of animals and human beings etc., etc.

Teacher:- Very good! Now children write down your home work. You have to answer this question. Why is a natural fertiliser better than artificial fertiliser?

### **Soil Erosion and Protection against Erosion**

Teacher:- Good morning, children.

Students:- Good morning, teacher.

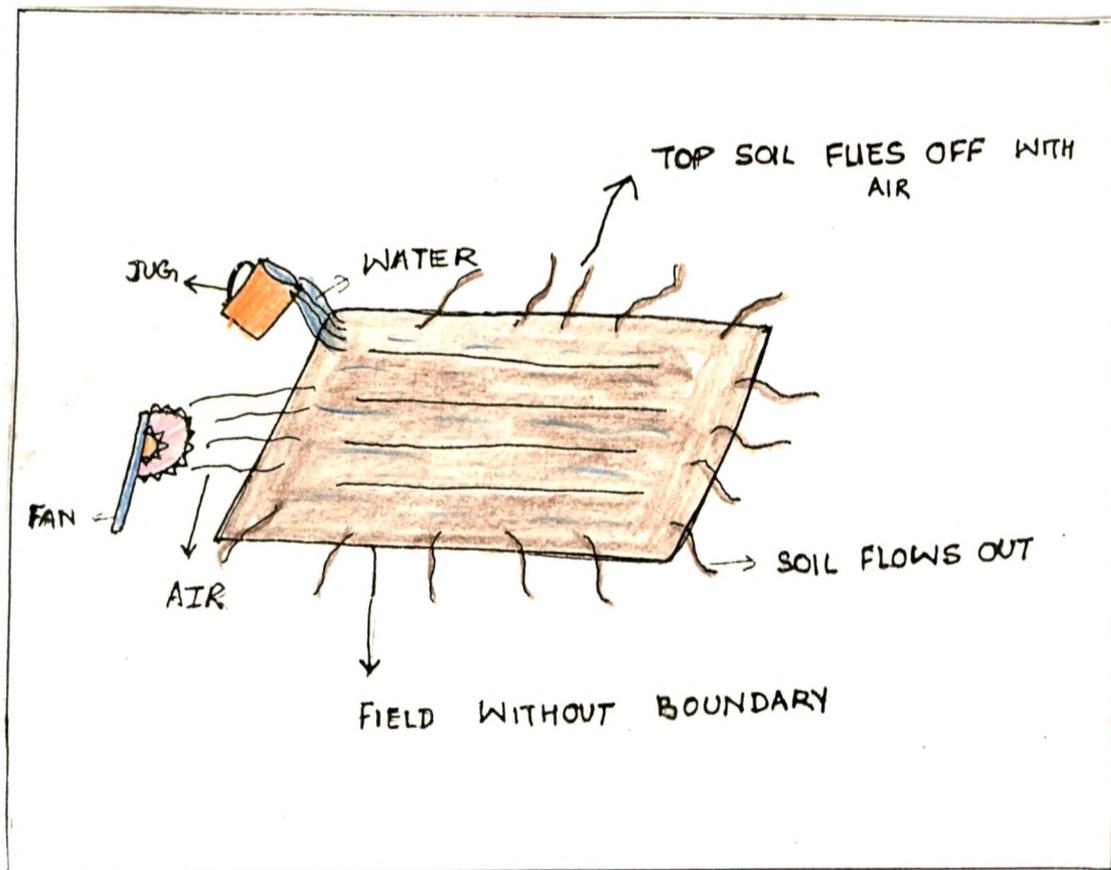
Teacher:- Children, Do you know how much time is required to make that one inch of top soil?

Students :- No teacher.

Teacher:- Many thousand years. This top layer of soil is made up of minerals, there are many living organisms like germs, bacteria which inhabit in the soil and enrich it. The top soil is the most fertile kind of soil. This top soil if unprotected, fly's of with wind or gets washed with water. This washing of the top soil either by wind or water is known as soil erosion. In the process of soil erosion, the rich nutritious layer of earth gets cleared. Don't you think such a layer of soil should be protected from getting washed or cleared? How to save soil from the process of soil erosion? will be studied today. In the farm, there should be boundaries made and these boundaries should be high. So that the water filled in the farm

does not take away the top soil. Apart from this, grow more plants and make a fencing around the farm, the roots of plants hold water. Grow big trees around the field. The big trees will lower the speed of wind. Thus reducing soil erosion due to air. Even by growing plants in the farm we can stop soil erosion. If nothing is grown in the field then also erosion increases.

**Figure 4.4 Erosion of soil by wind and water.**



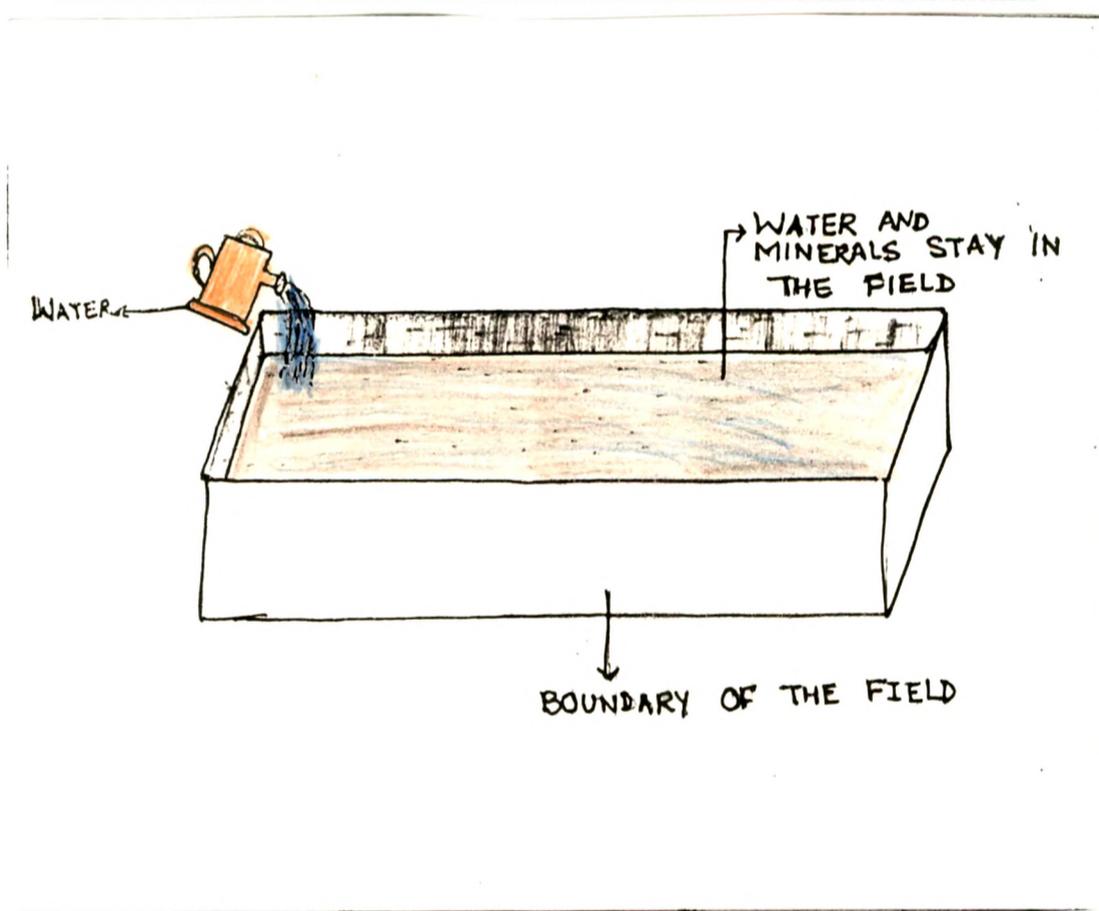
Take a plate, which does not have border, fill some soil, pour water over it. Observe what will happen. I am pouring water on the plate. You observe and tell me what happened?

Students:- The soiled water has come out from the plate. It has carried soil with it. Soil erosion has taken place.

Teacher:- Take a plate which has high border. Now you add water in this plate and we will see the result. Did the water flow out?

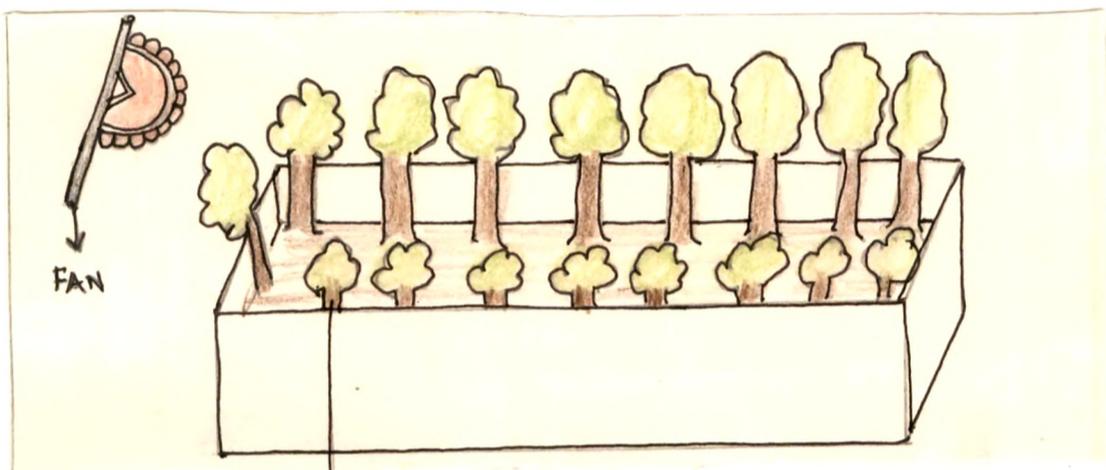
Students:- No miss water stayed in the plate, as it had a boundary.

**Figure 4.5 Boundaries of the Farm save from Soil Erosion.**



In this high boundary plate, if we grow trees as shown above and blow fan, then soil erosion wont take place.

**Figure 4.6 Plantation in the Farm Saves Soil from Eroding.**



In a high bordered plate, grow some grass and then see the effect of air and water. Does the soil erosion take place?

Students:- No teacher. All of us should try to avoid soil erosion by planting a tree.

The soil that gives us so many things needs protection. Isn't it?

Students:- Yes teacher.

Teacher:- What is soil erosion?

Students:- Flying away or washing of the top soil layer is known as soil erosion.

Teacher:- How soil erosion can be stopped?

Students:- By growing plants, by making high border and by growing huge trees on the border.

Teacher:- Good! Now note down your homework. Draw the picture of various ways in which soil erosion can be stoped.

Students :- Teacher, from the two earthen pots, the seed sowed in the earthen pot in which the mud was filled, has germinated. While the seed grown in sand, has not germinated so far.

Teacher:- Good, What can we say from this?

Students:- We can say that sand is not fertile, but mud is fertile.

Teacher:- Good Children, Now you have understood the things clearly.

#### UNIT IV

##### Written Test

Q.1 State whether the following statements are true or false.

5 (1x1)

1. On our earth there is three fourth water and one fourth land.
2. For development of plants and their growth, land is a must.
3. Wood is given by plants.
4. Animals can get grass without land also.
5. Many germs live in soil.

Q-2 Fill in the blanks

5(1x1)

1. While digging soil one gets \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_.
2. The soil in which proportion of clay is more is known as \_\_\_\_\_.
3. In black soil proportion of sand is \_\_\_\_\_.
4. With the flowing waters of river \_\_\_\_\_ flows down.
5. Fertilisers are of \_\_\_\_\_ types.

Q.3 Answer the following in one sentence.

10(1x2)

1. What are the components of soil?
2. Fertility of soil depends on which factors?
3. How can we increase fertility of soil?
4. What grows in the sandy soil near the seacoast?
5. Which are the types of soils?

Oral examination.

10(1x5)

1. Explain erosion of soil.
2. How can we stop soil erosion.

Activity test

In front of you there are pictures of major cereals pulses, what you have to do is you have to identify the crop and put it in the plate labelled as black soil, alluvial soil or sandy soil. Okay you can start now.

- |                      |                     |
|----------------------|---------------------|
| 1. wheat _____       | 2. sugar cane _____ |
| 3. millet _____      | 4. cotton _____     |
| 5. water melon _____ | 6. oil seeds _____  |
| 7. coconut _____     | 8. bajra _____      |
| 9. musk melon _____  | 10. pulses _____    |

Answer Key for unit IV tests.

A-1

1. right      2. right      3. right      4. wrong      5. right

A-2

1. sand, mud and pebbles
2. fertility
3. lesser
4. silt
5. two

A-3

1. The components of soil are mud, sand, pebbles, animal remains, plant remains and minerals.
2. Fertility of soil depends on the mud.
3. Fertility of land can be increased by adding fertiliser to it.
4. In the soil near the coast coconuts grow.
5. Soil is mainly of three types; black soil, alluvial soil and sandy soil.

Oral Examination

1. When the nutrients from the soil go away either with wind or running water it is called as erosion of soil.
2. Erosion of soil can be reduced by making boundaries of farm, growing trees near the field and not allowing the land to remain barren. By plantation of crops also to some extent soil erosion gets reduced.

Activity test.

- |               |             |              |                      |
|---------------|-------------|--------------|----------------------|
| 1. Wheat      | -Black soil | 2. Sugarcane | - alluvial soil      |
| 3. millet     | -Blacksoil  | 4. cotton    | - alluvial soil      |
| 5. watermelon | -sandy      | 6. oilseeds  | - alluvial soil      |
| 7. coconut    | -sandy      | 8. bajra     | - black soil         |
| 9. musk melon | -sandy      | 10. pulses   | - alluvial and black |

## UNIT V Weather

**Instructional Objectives.**

1. Students will be able to describe how wind blows.

2. Students will be able to enlist different objects used in different seasons.(Rain coat, sweater, gloves cap etc.)
3. Students will be able to mention for which people weather report is important.
4. Students will be able to describe the weather condition in different seasons.

### Monsoon

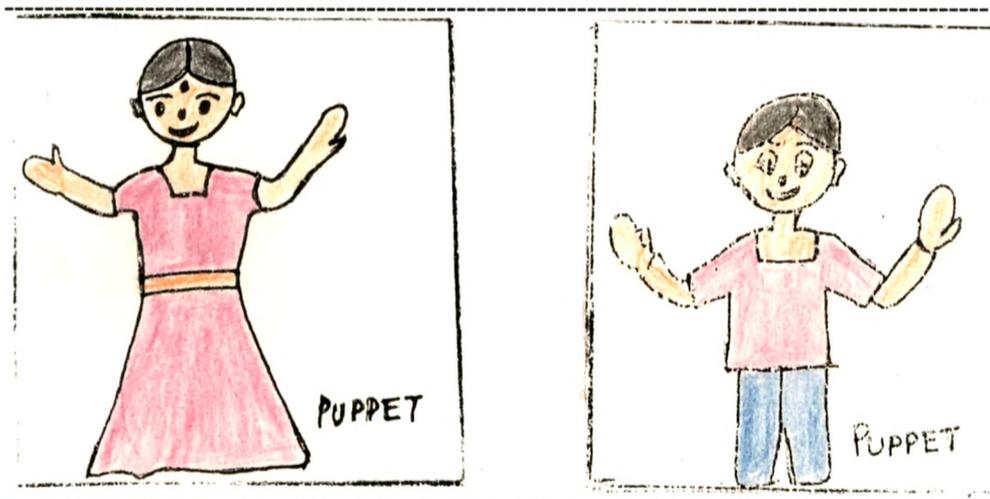
Teacher:- Good morning, children.

Students:- Good morning, miss.

Teacher:- Children, today you are going to see a puppet show.

I know you are going to enjoy.

Figure 5.1 Bharat and His Mother



Bharat is playing and he is singing a song. " What ever I like, I will do, I will sing, I will dance, I will play, Whatever I like, I will do. Only if I wish! Mummy:- Bharat, what are you doing?

Bharat:- Mummy I am playing.

Mummy:- Bharat, have you done your home work?

Bharat:- No mummy. I don't like the homework.

Mummy:- Tell me what is your problem. Oh! this is a simple lesson. This is very easy. It is about weather. You have learnt about earth, Isn't it?

Bharat:- Yes mummy. Earth is round and it has a cover around it which is known as atmosphere. It has one third part land and three fourth part water.

Mummy:- Do you remember anything regarding it?

Bharat:- Mummy, it is the only planet which supports life, It has rivers, mountains, houses etc., etc.,

Mummy :- Earth is surrounded by an envelope of atmosphere.

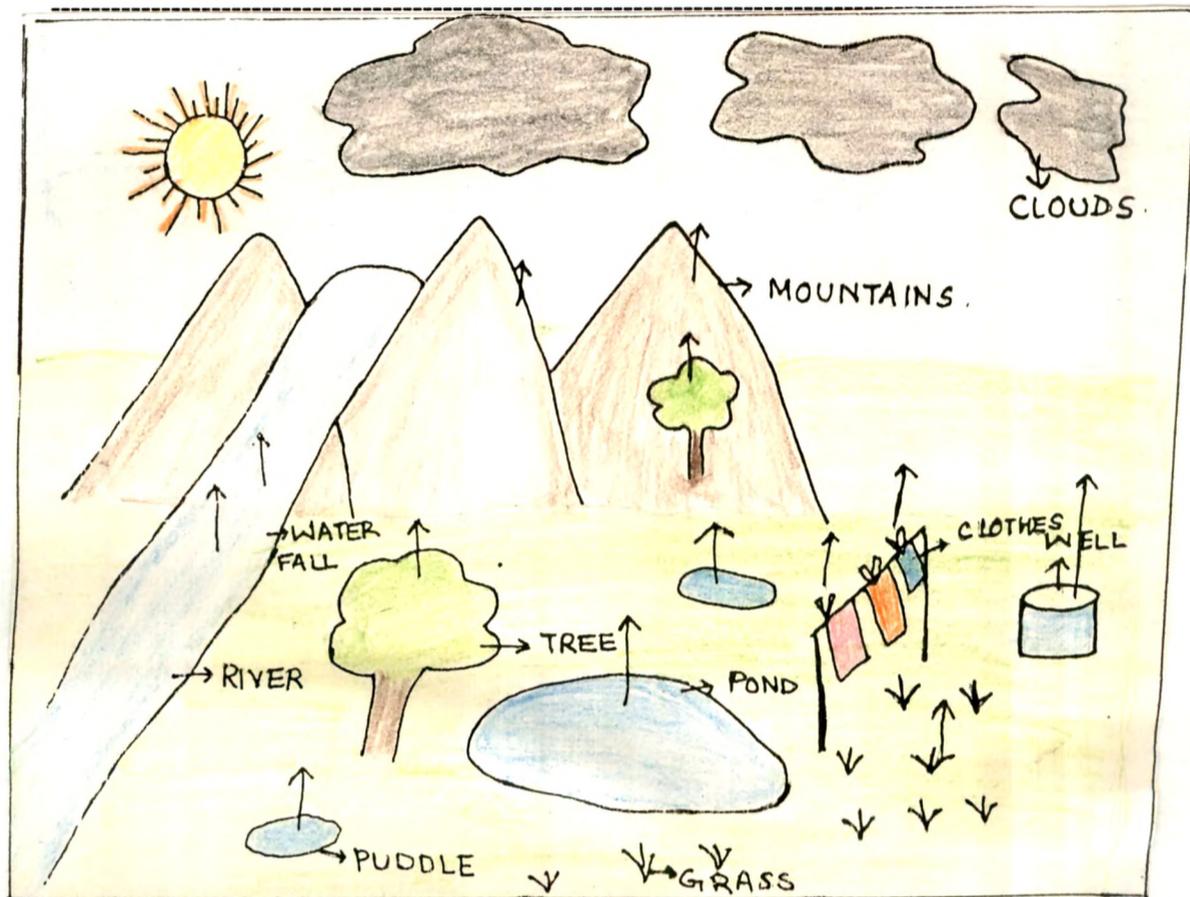
Mummy:- What is the meaning of atmosphere?

Bharat:- It is envelop of air that protects earth from ultra violet radiation, coming from sun.

Mummy :- Bharat any change that occurs in the temperature, humidity, moisture and pressure affects the weather.

Mummy:- When the sun rays falls on different water bodies like river, sea, ocean, grass, plant surface, etc., etc., this vapour which is light, moves up. The empty place is filled with another air. In this manner, air blows.

Figure 5.2 How the Rain Falls?



Mummy:- Look at this picture. Warm air goes up and the air nearby fills in the gap. In this picture, water evaporates from which surfaces?

Bharat:- In this picture, water is evaporating from river, ponds, ditches, grass, clothes, plants and well. This water is going up in the form of vapour.

Mummy:- You have said it correctly.

Bharat :- Mummy, What happens to the vapour?

Mummy :- Vapour forms clouds. When the clouds condense, they form water droplets. These water droplets combine and pour in the form of rain. Bharat,

when you go to take bath, when the pot is covered with the plate, there are water droplets on the lower side of plate. Similarly, the vapour from different sources assembles collect and forms water which drops in the form of rain.

Bharat:- Yes mummy, I have seen this.

Mummy :- Similar process takes place in the sky. When the rain falls small children sing “ come come oh rain , bring oh rain with you a beautiful rainbow, warm chapati, and bitter gourd vegetable.”

**Figure 5.3 Chart showing Monsoon Season**



Bharat:- Mummy we make paper boats. People wear raincoats, take umbrellas and go out and play in water.

Mummy :- You always play in water.

Bharat:- Yes mummy, I enjoy to play in rain.

Mummy:- Bharat when it rains non stop, then some times flood occur. When water overflows from the rivers dams and other water sources, in such a condition, announcement are done like, please don't go out. Trains, buses and aeroplanes are held up. Games are stopped. People staying in the the low lying areas are asked to shift to higher places. Such information about weather is given on television, radio and in news papers. This information is useful for fishermen, farmers, pilots, drivers, travellers, sailors and navigators.

Mummy:- Rain brings with it, greenery, colourful butterflies and a rainbow. In monsoon, drying clothes is a big problem, as humidity does not allow clothes to dry. Have you understood about monsoon season?

Bharat:- Yes, Mummy.

---

Teacher :- So, children I think you all have understood. Now answer some questions.

Teacher:- How does the wind blow?

Students:- When the warm air rises up, the nearby air fills the vacuum. In this movement of, warm and cold air, the wind blows.

Teacher:- Good! How cloud formation takes place?

Students:- Cloud are formed when the warm vapour collects together. That is the vapour arising from different surface like rivers, oceans, sea, ponds, wells, clothes, from plants and animal surface. All these vapours together form clouds.

Teacher:- How does the rain fall?

Students:- When the vapours, in the clouds gets condensed, then it rains.

Teacher:- Good! How can one get information regarding weather?

Students:- We can know about the weather from radio, television and newspapers.

Teacher:- Fine ! This information about weather will be useful for whom?

Students:- The information regarding, the weather is useful to sailors, navigator, travellers, mountaineers, fisherman, pilots, drivers and farmers.

Teacher:- Very Good! Why clothes don't dry in monsoon?

Students:- Clothes don't dry in monsoon because there is lot of humidity in the atmosphere.

Teacher:- What is humidity?

Students:- Content of moisture in air is known as humidity.

Teacher:- Which are the things used in monsoon?

Students:- Umbrellas, raincoats, gum boots and caps are used in monsoon.

Teacher:- If any one wants to ask a question, you can do that.

Okay students, now write down your homework, Write down the weather report either from newspaper, television or radio.

### **Monsoon**

1. Air has lot of moisture.

2. Temperature is less than that of summer.
3. Sky is full of clouds.
4. Weather report is useful for navigators, sailors, fishermen, travellers, mountaineers, pilots, and drivers.
5. If it rains heavily, sports get held up.
6. Everyday heat, coolness and wind are not similar.

Weather - Means the changes occurring in temperature, humidity, moisture and pressure.

Teacher:- That's all for today and now we will meet tomorrow, good bye till then.

Students:- Bye teacher.

### **Winter**

Teacher:- Good morning, children.

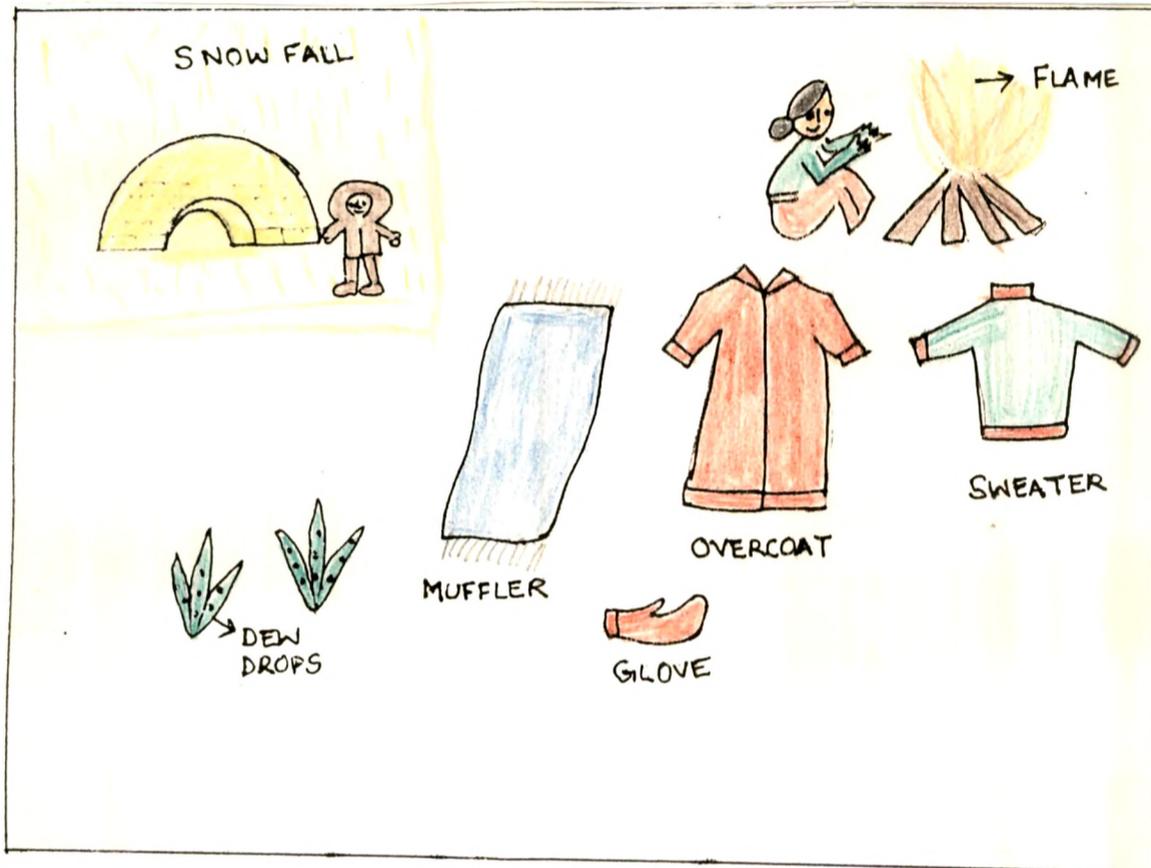
Students:- Good morning, teacher.

Teacher :-Have you done your homework?

Students:- Yes, teacher.

Teacher:- That's good, today we will study about winter. In this season people wear warm clothes and sit near fire place. Look at this picture.

Figure 5.4 Chart showing Winter Season



Teacher:- In this picture, what are the people wearing?

Students:- In this picture, people are wearing gloves, sweaters, shoes, caps and mufflers. What is that small round thing?

That is the house made from ice it is known as igloo.

These water droplets on the grass are known as dew drops.

In winter season, some times we can not see any thing in front of us. This is because of fog formation. So, on a winter morning, you can see dewdrops and fog. People keep their fans off and wear woollen clothes.

Teacher:- What do people wear in winter?

Students:- People wear sweaters, gloves, mufflers, caps, use blankets, suits etc.,

Teacher:- When there is more fog visibility becomes very poor and in such a condition the pilots, navigators, sailors etc., are asked not to travel. Now you must have understood about winter. Tell me, which type of clothes are worn in winter.

Students:- People wear woolen clothes in winter.

Teacher:- Good! What do we get to see on early winter morning?

Students:- Dew drops and fog can be seen on early winter morning.

Teacher:- Snow falls in which season?

Students:- Winter

Teacher :- Good!

### **Characteristic Features of Winter Season**

People wear warm clothes in winter. Temperature is low in winter. Sometimes there is snow fall. In the morning one can see dewdrops and fog. In case of intense fog, sailors, navigators, pilots etc., are asked not to travel.

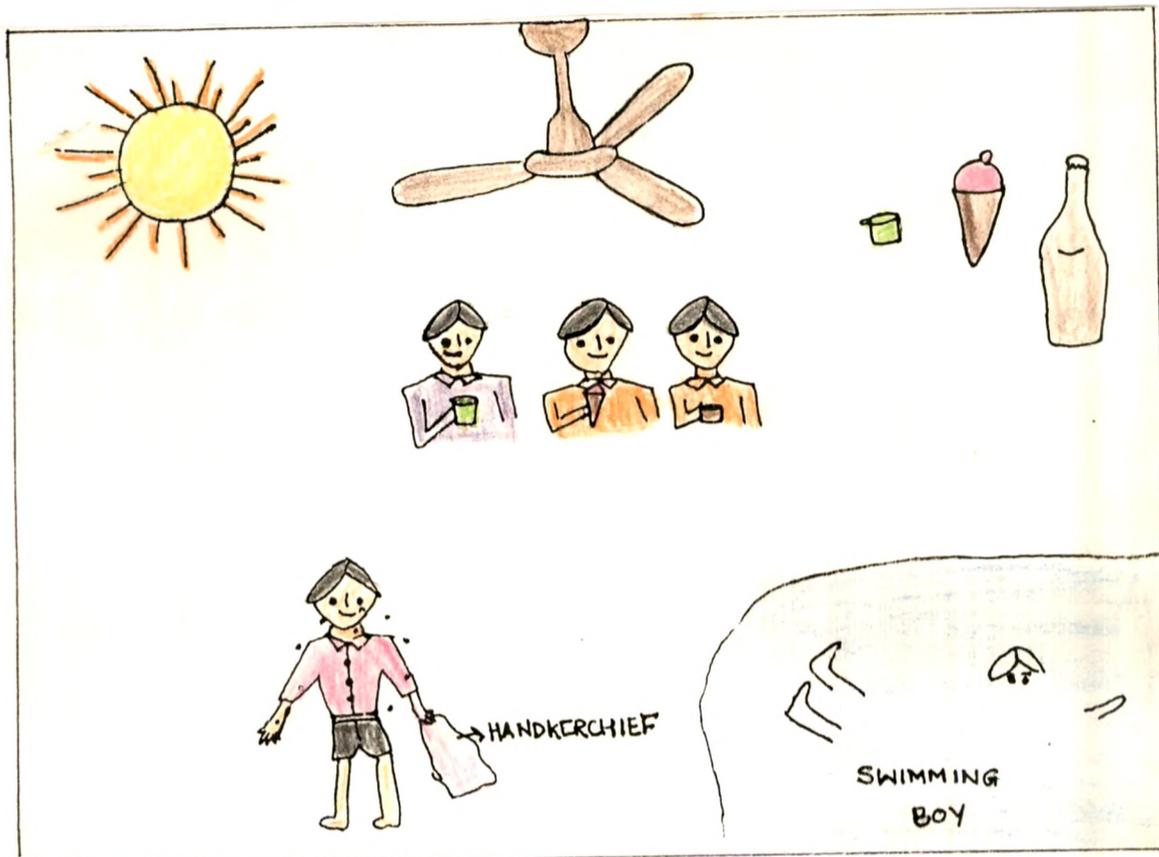
Teacher:- Which season follows winter?

Students :- Summer. We get summer vacation. We sweat a lot. In this season we get opportunity to play and travel.

Teacher:- That's right.

Look at this picture.

Figure 5.5 Chart Depicting Summer Season.



What can you see in this picture?

Students:- There are three people, sitting in a room and under the fan. One is drinking cold drink, another one is eating ice-cream and the third one is drinking fruit juice. All the three men are sweating badly. There is an ice-cream cup a cold drink bottle. On the other side, there is a small boy swimming.

Teacher:- Good! Which things people eat and drink in this season to keep themselves cool?

Students:- People eat ice-cream and drink cold drinks.

Teacher:- What is the small boy doing in the water?

Students:- The small boy is swimming.

Teacher:- What happens to the people working under hot sun?

Students:- They sweat very badly.

Teacher:- Good!

### **Characteristics Features of Summer Season.**

People sweat in summer. They sit under the fan. They drink cold drinks. They eat ice-creams.

People try not to move out in hot sun. Mornings and evenings are some what cooler. People wear cotton clothes.

Teacher:- Now, write down your home work. Draw the picture of winter, summer and monsoon season. See you tomorrow.

Students:- Bye Teacher.

## **UNIT V**

Written test

Q.1 State whether the following statements are true or false.

10 (1x1)

1. Humidity of the atmosphere is responsible for the change of weather.
2. Sun rays bring with them coolness on earth.
3. In our country there are four main seasons.
4. Humidity is more on river banks and sea coast.
5. Temperature, humidity always remains similar in all the twelve months.
6. In case of fog you cannot see beyond one or two meters.
7. If there is forecast of heavy rains games are stopped.
8. In winter season sometimes there is snow fall.

9. In monsoon people use umbrellas.
10. In summer people drink cold drinks.

Q.2 Answer the following in one line.

12(1x2)

1. Why clothes don't dry in monsoon?
2. In winter what can be seen shining on the grass?
3. Which are the sources of weather announcements?
4. What is the name given to moisture content in air?
5. Why are the deserts so dry?
6. What is weather?

Q.3 Some conditions are mentioned, write the seasons against them.

- |                               |                         |
|-------------------------------|-------------------------|
| 1. fog - _____                | 2. cyclone - _____      |
| 3. heat - _____               | 4. snowfall - _____     |
| 5. clothes don't dry - _____  | 6. Feel thirsty - _____ |
| 7. sit near fire place- _____ | 8. rain falls - _____   |

Oral examination

10(1x5)

1. Which people need weather forecast?
2. How does rain fall?

Activity test

Certain things are given you have to mention in which season these things are seen.

- |                          |                     |
|--------------------------|---------------------|
| 1. sweater - _____       | 2. cap - _____      |
| 3. cotton clothes- _____ | 4. rain coat- _____ |
| 5. ice-cream - _____     | 6. fan - _____      |

7. paper boat - \_\_\_\_\_

8. puddle - \_\_\_\_\_

9. snow - \_\_\_\_\_

10. cold drinks - \_\_\_\_\_

Answer key for unit V tests.

A-1

1. right 2. wrong 3. wrong 4. right 5. wrong 6. right 7. right 8. right 9. right 10. right.

A-2

1. In monsoon clothes don't dry because there is lot of humidity in air.
2. In winter we can see dew drops on grass.
3. Changes in weather are announced through radio, television and newspaper.
4. The moisture content of air is known as humidity.
5. Deserts are dry because the moisture content in the air is less.

A-3

1. winter 2. monsoon 3. summer 4. winter 5. monsoon 6. summer 7. winter 8. monsoon

Oral examination

1. Weather report is useful for farmers, fisher men, sailor, navigators, mountaineers, travellers, pilots and drivers.
2. First there is formation of vapour from the water surfaces this vapour collect. The collected vapours condense. These condensed vapours fall back on earth in the form of rains.

Activity test.

1. winter
2. winter, summer and monsoon
3. summer
4. monsoon
5. summer
6. summer
7. monsoon
8. monsoon
9. winter
10. summer

## **Unit VI Our Food**

### **Instructional Objectives**

1. Students will be able to mention the nature of food.
2. Students will be able to state different rasas available in food.
3. Students will be able to state different components of food.
4. Students will be able to explain the concept of balanced diet.
5. Students will be able to explain various components essential for the development of body.
6. Students will be able to mention the type of food to be eaten in every season.
7. Students will be able to explain how to store and preserve food.
8. Students will be able to describe how the water gets polluted due to various reasons.
9. Students will be able to describe various factors responsible for air pollution.
10. Students will be able to describe how food gets polluted..
11. Students will be able to explain how to reduce pollution.
12. Students will be able to state different diseases caused due to consumption of polluted food and water.

### **Balanced Diet**

Teacher:- Good morning, children.

Students:- Good morning, teacher.

Teacher:- Today, I will show you a video film. You see it carefully. I will ask you some questions. I am sure you will enjoy this film very much.

#### **Figure 6.1 Video Film on Balanced Diet**

---

( Teacher shows a ready made video film on balanced diet)

The concept of film in chronological order. - first the concepts of balanced diet is given. - The main components of balanced diet are mentioned. - These components are found in which type of food is shown. - How many calories are found from these items was shown. - What should be our regular diet was explained. - Amount of nutrition in each vegetable was explained.

---

Teacher:- I am sure you all have enjoyed this film.

Teacher:- Now I will tell you a story.

#### **Figure 6.2 Rajesh and the Fairy Queen**

---

There was a boy whose name was Rajesh. He was studying in eighth standard. He was only child of his parents. So he was very fastidious. In his studies, he was very good. He used to do his home work regularly. He was a very well mannered boy and would talk gently with every one. Every one used to like him very much. He had just one problem that he would not eat food properly. He would take snacks all the time but he was least concerned of his meals. Not only this, we must remember that whatever we eat, help in the development of our

body. We get energy and strength from the food that we eat. This helps in preventing diseases, that is, it gives resistance to the body. We should take in our food; rice, pulses, green vegetables, chapati, khichadi, green salad, buttermilk, milk etc., If we eat these things, they help in sound development of our body.

He would take tea and bhakri or snacks. Even at meals, he would not eat the kind of food which will give him nutrition. Instead of taking pulses, green vegetables and chapati, he would take, chapati with chatni, or pickle. He would make faces looking at green vegetables and other vegetables. At the most, he would eat potato. He used to keep carrots, tomato away from him. He only liked to have ice-creams and chocolates.

He used to get extremely delighted whenever he saw bhajiya, patra, fafda, kachori, khaman, samosa, chevda, etc. His parents and doctor uncle tried to make him understand but there was no impact on him. Doctor uncle said, 'Look here Raju, you must eat food containing carbohydrates, proteins, vitamins, minerals, and fats. Then only you will become healthy. If you keep your self healthy, you will be able to perform well in examinations and in games also. You will not get exhausted very fast. You will always remain hail and hearty. To get all this, you must eat nutritious food'. But Rajesh never paid attention to his advice.

One day when Rajesh went to sleep and in his sleep, he saw a dream, that somebody is trying to wake him up at mid night. He opened his eyes and to his great surprise, he saw a beautiful fairy standing in front of him. The lady was all dressed in white silky robes and she had bright wings. Rajesh asked her 'who

are you'? The lady replied 'I am the queen of fairies'. The queen asked him, 'In which class do you study'?

Rajesh said 'I am studying in eighth standard.' Fairy started laughing 'are you kidding man? you look like an old man. You have worn spectacles. Your hair are white, your teeth have fallen, your skin is wrinkled'. Rajesh says 'that's impossible'. The fairy said 'if you don't believe in me go and see in the mirror'. So Rajesh went and checked in the mirror to his great surprise he found that fairy was not lying. Fairy told him, 'you are the same small boy' but if you continue to be careless in your eating habits soon you will grow into an old man. You must eat a balanced diet as told by your doctor uncle and parents. If you eat your food properly you will remain healthy. Rajesh said " Oh queen of fairies, I will do as you say" The fairy queen patted his back and went away with a sweet smile. Rajesh went back to sleep, he slept peacefully till the morning. From the very next day, he started eating a balanced diet.

Teacher:- Well students, tell me what do we learn from this story? If we don't take balanced diet, our body will not develop properly.

---

Students:- We must eat a balanced diet, rather than eating snacks and junk food. Only then, we will be healthy. We must eat pulses, rice, chapati, salad, green vegetables and drink lot of water.

Teacher :- Very good. Now write down your homework. When you sit for your meals, make a list of items. Write against each item which components it contains. Find out whether it is a balanced diet or not.

## Seasonal Food

Teacher:- Good morning, children.

Students:- Good morning, teacher.

Teacher:- Today, we will see different types of food. You eat different types of food.

Classification of food according to eating styles.

- Some type of food, like milk, butter milk, juices, pulses which we can drink.
- Whereas there are some food items which have to be chewed like rice, khichadi, etc.
- Chapati, bhakhri, have to be chewed more.
- There are certain other items, like honey, ghee, cream and srikhand are to be licked.

Teacher:- So, tell me, how many types of food we have seen?

Students:- We have seen four types of food. Food that we can drink, chew more, requires more chewing and the one that we can lick are the four different types of food.

Teacher:- Good! Why should we eat food?

Students:- We must eat food in order to provide nutrition to our body.

Teacher:- Good! Do we eat same type of food throughout the year?

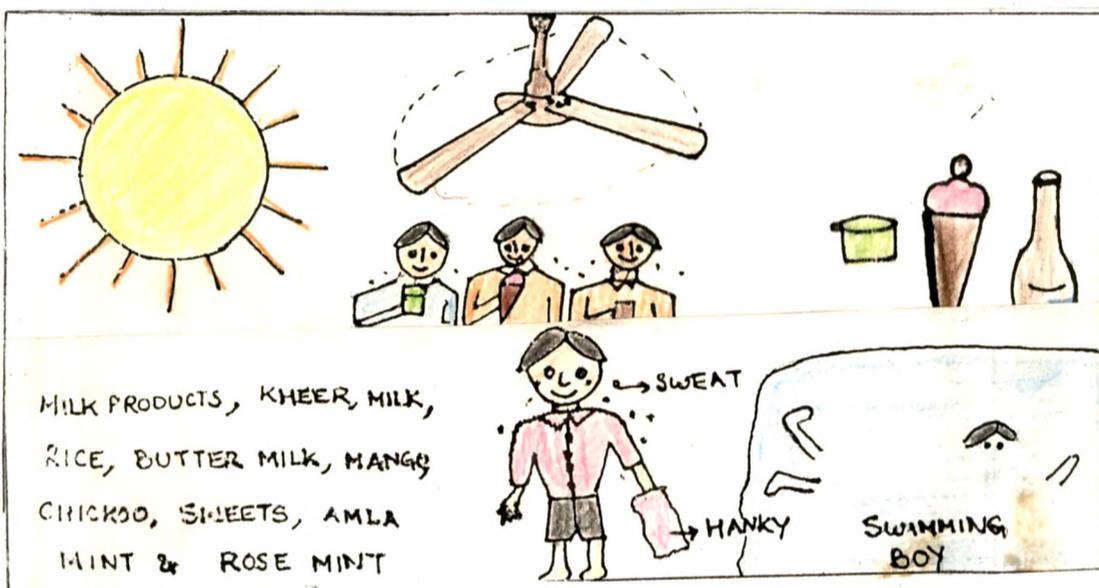
Students:- No teacher.

Teacher :- Very good! Now let us classify food according to different seasons.

\* In summer season we eat food that provide us coolness.

We take cold drinks, fruit juices, lemonade, ice-creams and salads to fight summer heat. Curd and its preparation are also very common. Milk and its preparation, rice, buttermilk, mango, musk melon, watermelon, ryan, etc., etc. are taken in summer.

**Figure 6.3 Food to be taken in Summer**



Teacher:- In summer season, what type of food do we eat?

Students:- Milk and milk preparation, rice, buttermilk, mango, watermelon, musk melon, fruit juices, cold drinks and ice-creams.

Teacher:- Good! Now let us see what type of food is taken in winter? Winter is a cold season so any food that provides warmth to the body is preferred. The food rich in fats provides warmth to our body. The food like bajra, sesame, drumsticks, trigonella, udad, ginger, etc. are consumed in winter.

Figure 6.4 Food to be taken in Winter



Teacher:- What type of food should be consumed in winter season?

Students:- We must consume food that provides warmth to our body like, bajra, sesame, drumsticks, trigonella, udad, ginger, etc.

Teacher:- Very Good! Depending upon the nature of food the food can be classified into different types; like cool, warm, light, heavy and dry. We have seen cool food and warm type of food. Now let us see light food. Milk, mungdal,

rice, parval, bittergourd, sugarcane juice and lemon juice can be categorised as light food. These food are labelled as light food because they are easy to digest.

Teacher:- Which things can be included in light food?

Students:- Light food comprises of milk, mung dal, rice, parval, bittergourd, sugarcane juice and lemon juice.

Teacher:- Heavy food includes jowar, udad dal, maize, sweets, ghee etc. Which things can be included in heavy food?

Students:- jowar, udad dal, maize, sweets, ghee etc..

Teacher:- Good! Oily food is also heavy as it is difficult to digest. For example, oil, ghee, milk, sweets, udad dal, jaggery, gum, trigonella, etc., Give examples of oily food.

Students:- oil, ghee, milk, sweets, udad dal, jaggery, gum, trigonella, etc..,

Teacher:- Fine. So, today we have seen food eaten according to different seasons. We saw different types of food depending on their nature. Now, we will see different types of food depending on their taste. There are six types of taste namely, sweet, sour, bitter, hot(Tikho), salty and turo. We must have all these tastes in our food. You give me examples of sweet food.

Students:- Jaggery, sugar and sweets.

Teacher:- Fine, Now give examples of sour things.

Students:- Tomato, raw mango, cocum and tamarind.

Teacher:- Good! Now give me the examples of hot to taste food.

Students:- Chilly, garlic and ginger.

Teacher:- Very good! Give me examples of bitter food.

Students:- Bitter gourd and trigonella.

Teacher:- From where can we get turo ras?

Students:- Amla.

Teacher:- Excellent! You have understood properly now. Write down your homework. Find out from your kitchen which things can be included in which type of taste.

Then find out the food that you are eating belongs to which category that is whether it is light, heavy, oily etc. Now, bye children. See you tomorrow.

Teacher:- Good morning, children.

Students:- Good morning, teacher.

Teacher:- Today, I will show you a puppet show.

**Figure 6.5 Pollution, Diseases: Precautions to be taken Against it.**

---

Queen:- Hello children.

Students:- Hello.

Queen:- These days you are studying Our Food. Tell me, why should we eat food?

Students:- We must eat food, to grow into healthy adults. Food increases the resistance in the body.

Queen :- Wow! That's great! You know so many things. You know that we must wash our hands with soap before eating anything. Otherwise the germs from our fingers will enter in our stomach and spoil it.

Students: Yes.

Queen :- You are good children. Whenever you eat fruits you must wash fruit, properly as some times there are germs on the outer surface of the fruits. What will happen if you eat unwashed fruits?

Students:- We will fall sick.

Queen:- You all are very intelligent. Whenever you eat food out side, you must keep certain things in your mind like.

1. Are the eatables properly covered?
2. Is the food fresh?
3. Is the food odourless or is it stinking?
4. Check that flies are not sitting on the eatables.
5. See to it that the place from where you are buying food is neat and clean.

It is necessary to keep all these points in mind because stinking, stale, uncovered food, where flies are sitting, or where the surrounding is a dirty place, such a food can cause harm to your health. You may suffer from fever, diahorrea, vomiting, stomach-ache, etc., If you want to be healthy you must always take fresh, covered, odourless and clean food. Keep your self healthy and away from diseases.

Queen:- What type of food you should eat?

Students:- We must always eat food that is fresh, odourless, clean and prepared in a clean surroundings.

Queen:- Good! We must always store our food in steel utensils.

Because food gets spoiled in the aluminium and light plastic cans. You might have observed that the food that remains in the can for longer time either

accumulate fungus, or becomes rensid. Bad odour comes out of it. We must throw away such stinking, rensid and fungused food. If we eat such food, we will have stomach ache, food poisoning, diahorrea and dysentery.

### Polluted water picture



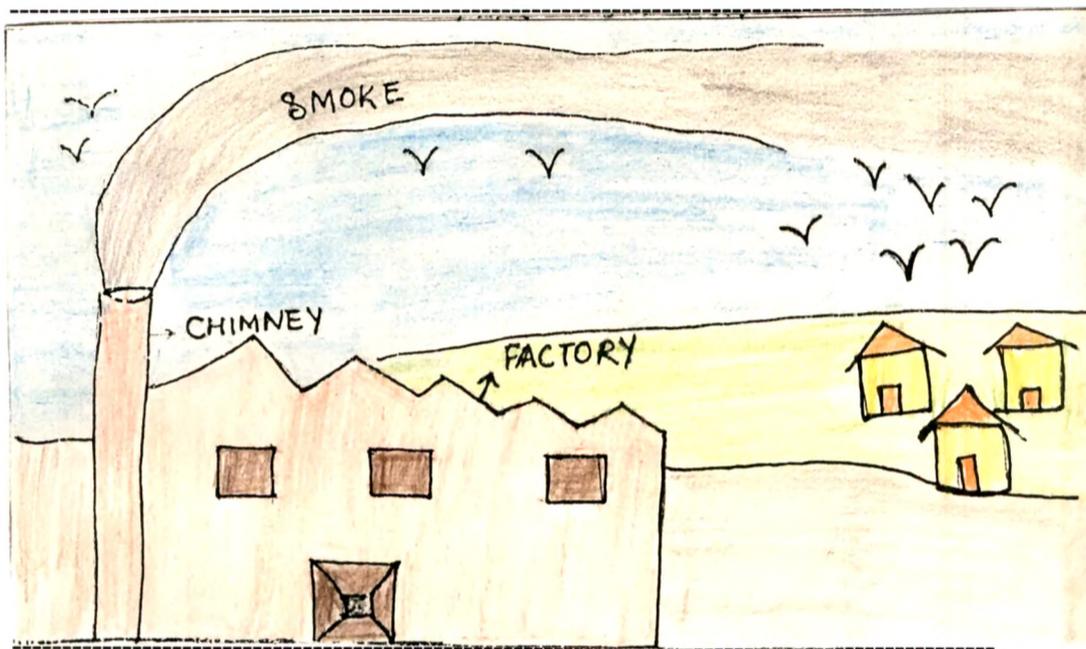
Queen:- Mosquito gets residence in the stagnant water. Do not allow the water to stand for long. Fill the ditches with soil and stones.

### Throw waste in the Dust Bins.



Throw waste into the waste paper baskets and dust bins and keep your surroundings clean.

### Polluted Air



The smoke coming out of chimney's spoils the air and makes it heavily polluted.

Queen:- After eating food it is very natural, that you drink water. Do you know that in our country there is hardly 0.3 % of drinking water. All other available water cannot be consumed directly. Water gets polluted like food. Listen carefully which type of water should not be used for drinking.

- The water which is kept open.
- The water which stinks,
- The water which is surrounded by filth.
- Now let us see which type of water can be used for drinking.
- The water which is covered.

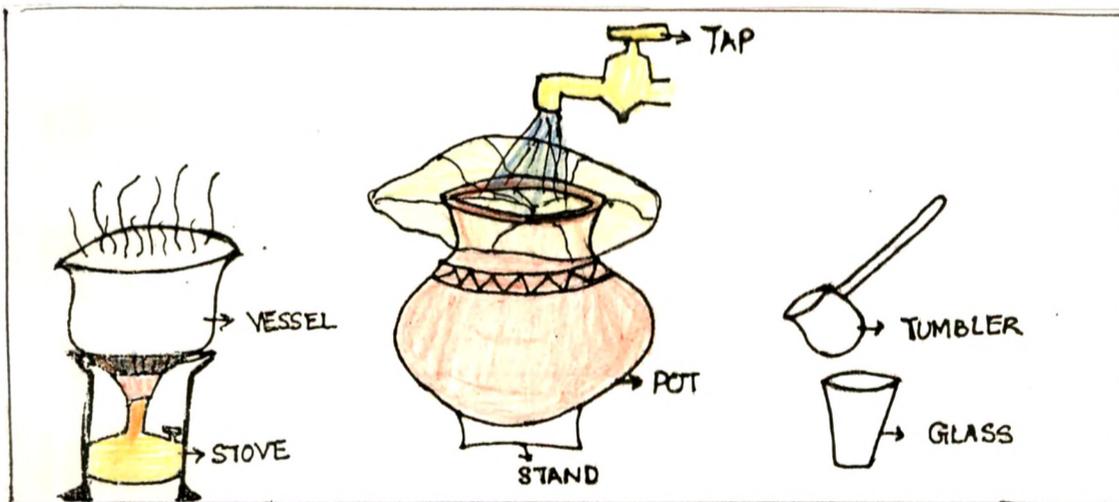
- The water which does not stink.
- Which doesnot contain dust particle or colour.

Students:- How does water get polluted?

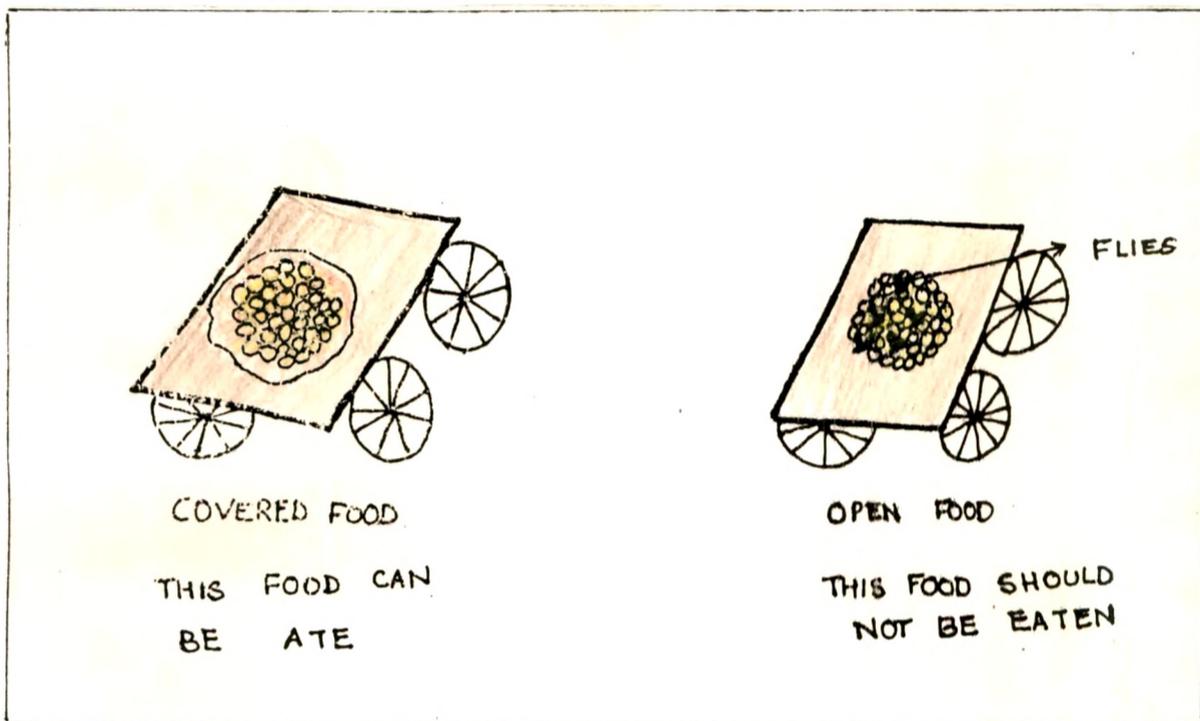
Queen:- Water gets polluted, because dirty water from the sewage and factories mixes in the pure water. You might have seen people washing clothes at the shore of a pond, animals also take bath in the water, people wash utensils, etc. activities make water polluted. We must protect water from getting contaminated and polluted. As you know we have very less amount of water. We must save water, without wasting it. This was about pollution now let us see how to keep water.

Water should always be filled in a clean container. When ever we want to draw water, tumbler should be used. We must sieve water through the net, either we should consume filter water or boiled water. We must never put our fingers in the pot.

#### Proper way of Filling and Drawing Water.



**Food should be Covered.**



Queen :- Now you tell me, how to draw water from the pot?

Students:- Water from the pot should be drawn without drowning fingers in water, but with the help of tumbler.

Queen :- Which water is worthy of drinking?

Students:- Clean water, which does not stink, and which does not have filth around it.

Queen :- Like food and water air also gets polluted, due to smoke from the factories and also from the smoke that comes out from the vehicles. We must always keep our surroundings clean. let it be your class, your house or school every thing should be kept clean. Have you now understood?

Students :- Yes.

---

(Teacher asks questions to the students).

Teacher:- Now answer the questions. Which material should be used to store food?

Students:- Food should be stored in steel utensils.

Teacher:- Which type of food should be eaten?

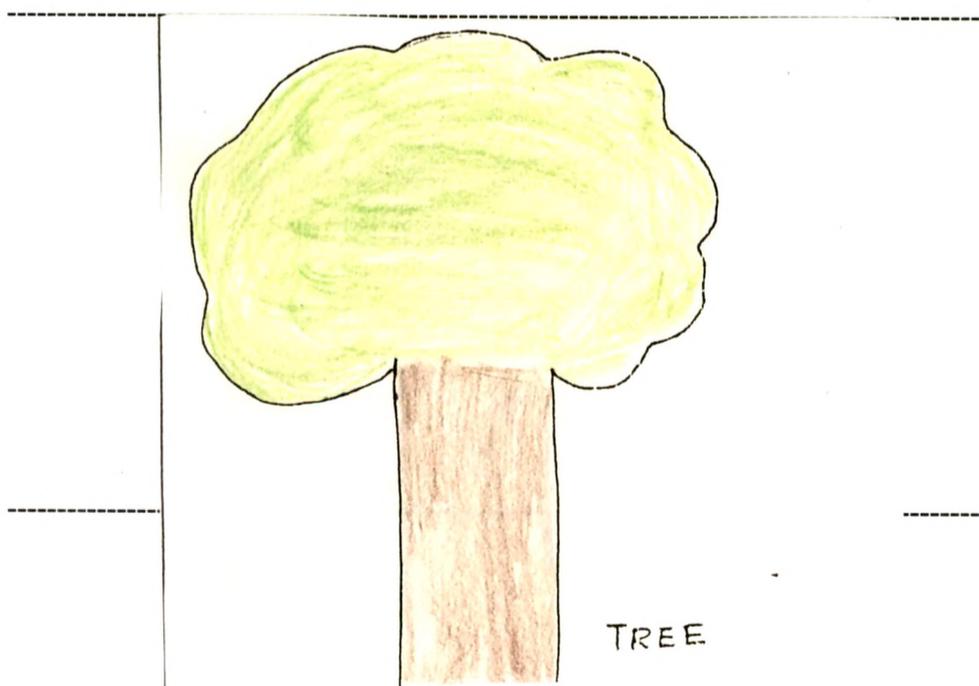
Students:- Clean fresh and odourless food should be eaten.

Teacher:- What type of water we should take?

Students:- Odourless, colourless, fresh and clean or boiled and filtered water should be taken.

Teacher:- We can save our world from pollution by planting trees. Large number of trees can purify our atmosphere.

**Figure 6.6 Tree Plantation.**



Teacher:- Now write down your homework. Which type of food and water should be consumed ? Draw their pictures.

## UNIT VI

Written test

20

Q.1 State whether the following statements are true or false.

1. Srikhand can be licked and eaten.
2. Buttermilk and milk are solid food.
3. Fat is useful in the development of the body.
4. To keep the blood in the body in a fluid condition water intake is necessary.
5. In winter people eat food that is warm in nature.
6. Light food is good for sick people.
7. At the time of holi festival dry food is eaten.
8. To store food plastic containers should be used.
9. Taking bath with polluted water can cause skin diseases.
10. Only fresh food should be eaten.

Q.2 Answer the following questions in one line.

10(1x2)

1. Food has how many types?
2. Food has how many components?
3. What do you understand by appetite?
4. What is balanced diet?
5. Food products have which tastes?

Oral examination

10(1x2)

1. which diseases are spread due to polluted water?

2. What will happen if someone eats stale food?

Activity test

20

Q.1 Which of the following is balanced diet?

5

1. Dal, rice, vegetable, chapati and salad \_\_\_\_\_
2. Bhakari and pickle \_\_\_\_\_
3. Curry, pulses, chapati and salad \_\_\_\_\_
4. Ghee, jaggery, bajri, rotla and curry \_\_\_\_\_
5. Bajre ki roti, dal, khichadi, onion and buttermilk \_\_\_\_\_

Q-2. Following food items should be consumed in which season.

- |                          |                       |
|--------------------------|-----------------------|
| 1. jaggery - _____       | 2. trigonella - _____ |
| 3. mango - _____         | 4. muskmelon- _____   |
| 5. lemon juice - _____   | 6. rayan - _____      |
| 7. bajre ki roti - _____ | 8. milkpak - _____    |
| 9. sesame - _____        | 10. srikhand - _____  |

Q.3 Following food gives which element to human body.

- |                            |                   |
|----------------------------|-------------------|
| 1. jaggery - _____         | 2. carrot - _____ |
| 3. butter - _____          | 4. papaya - _____ |
| 5. ghee - _____            | 6. milk - _____   |
| 7. eggs - _____            | 8. dates - _____  |
| 9. green vegetables- _____ | 10. amla - _____  |

Q.4 Given below are some items you have to identify which amongst them is polluted and which is not polluted.

1. Panipuri sold by the hawkers. \_\_\_\_\_

2. Food kept under the net inside kitchen. \_\_\_\_\_

3. Jaggery kept openly in the shop. \_\_\_\_\_

4. Water in the pot. \_\_\_\_\_

5. Rain water collected in a glass. \_\_\_\_\_

Answer key for unit IV tests.

A-1

1. right 2. right 3 right 4. right. 5. right 6. wrong. 7. right 8. wrong 9. right  
10. right.

A-2

1. Food is of four types, one that we can drink. One that has to be chew. One that requires more chewing. One that can be licked.

2. Food has basically five components; carbohydrates, vitamins, proteins, fats and minerals.

3. Appetite means the capacity to eat food.

4. Balanced diet is that food which contains all the necessary components in appropriate quantity.

5. Food has six tastes; sweet, sour, bitter, spicy( tikho) and salty (turo).

Oral examination

Answer

1. If one drinks polluted water there are chances that a person may suffer from typhoid, diahhorea and skin diseases.

2. By eating stale food there is loss of appetite, diseases are possible, fever is possible, stomach ache and vomiting is possible.

**Activity test**

**A-1**

1. balanced.
2. imbalanced
3. imbalanced
4. balanced
5. balanced.

**A-2**

1. winter
2. winter
3. summer
4. summer
5. summer
6. summer
7. winter
8. summer
9. winter
10. summer.

**A-3**

1. vitamin
2. vitamin
3. fats
4. vitamin
5. fats
6. fats
7. proteins
8. minerals
9. vitamins
10. vitamins.

**A-4**

1. polluted
2. not polluted
3. polluted
4. not polluted
5. polluted.

**Unit VII Matter**

**Instructional Objectives**

1. Students will be able to state that matter has three forms.
2. Students will be able to explain arrangement of atoms in matter.
3. Students will be able to enlist examples of solid, liquid and gas.
4. Students will be able to state the characteristics of matter.

5. Students will be able to explain that air has weight.
6. Students will be able to describe the process of making ice, water and vapour.
7. Students will be able to state that the three forms in which water is available.
8. Students will be able to give examples of matter changing from one state to another.
9. Students will be able to experiment and prove the characters of matter.

(Teacher writes on the blackboard)

Teacher:- Read this carefully.

---

1	2	3
copper	milk	gas
iron	tea	perfume
steel	water	air
aluminium	petrol	vapour
plastic	diesel	smoke
table	oil	
pencil	buttermilk	
blackboard	coconut milk	

---

Now, tell me what are all these ?

Students:-All these are matter.

Teacher:- Good! objects of the first column are solid. What do you understand by solid matter?

Students:- Table, chair, bench etc. are solid

Teacher:- Whatever you have mentioned are the examples of solid. **Solid means an object that has definite shape and size.**

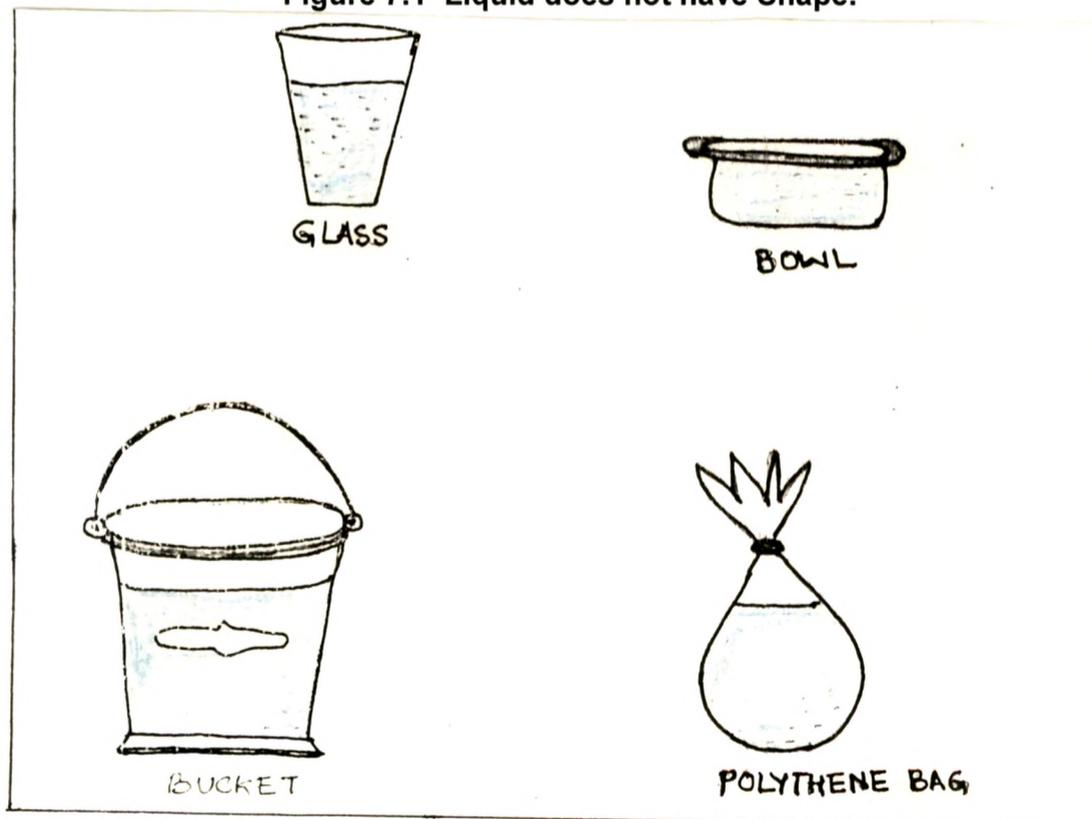
write down the definition of solid Any object that possesses definite shape and size is called solid.

Teacher:- What name can be given to the things mentioned in column two?

Students:- The things mentioned in column two are liquid. The liquid have a tendency of getting spilled.

Teacher:- Correct! Look there is water in this bucket. What is the shape of water? what is the shape of water in this glass? What is the shape of water in this polythene bag? what is the shape of water in this bowl? After observing these objects what can be said?

**Figure 7.1 Liquid does not have Shape.**



Students:- Liquid do not have a definite shape.

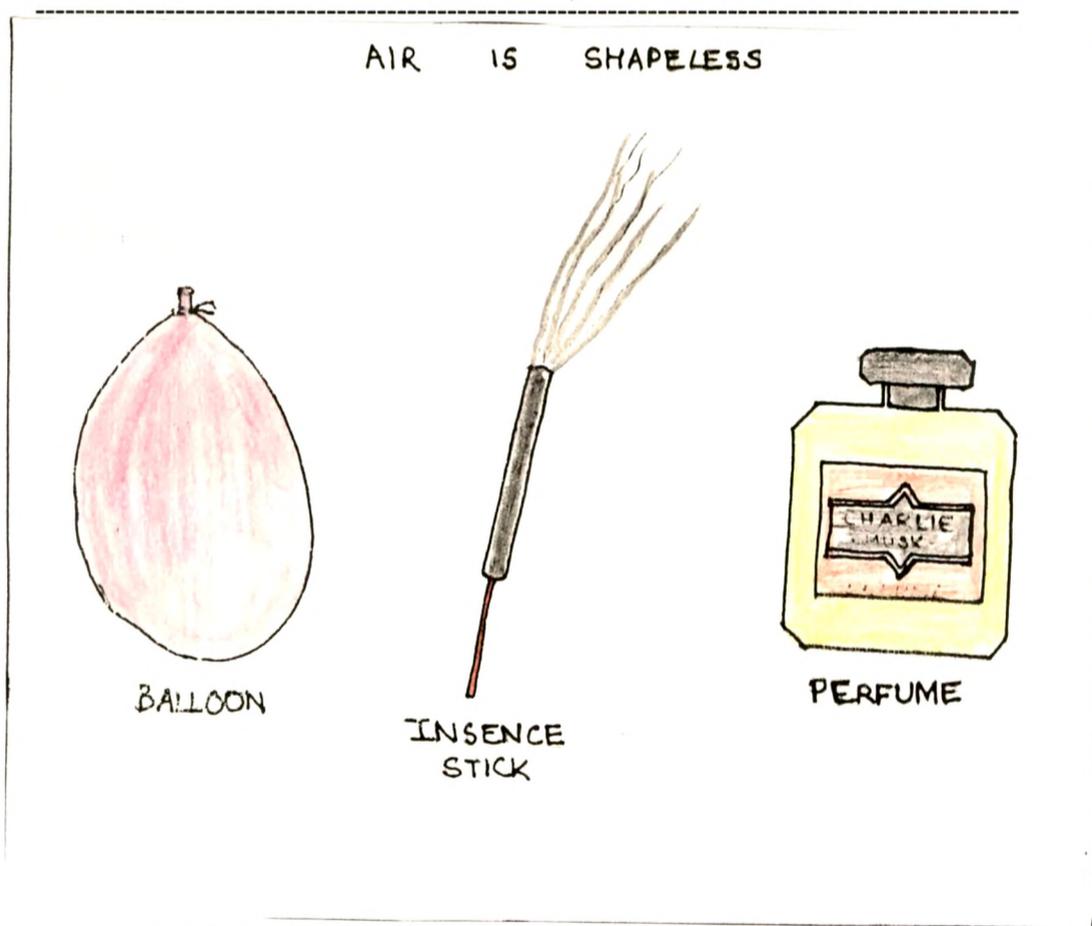
Teacher:- Good! Write down the definition, 'Any matter that **has definite size but no shape is called liquid.**' It looks like the vessel in which it is placed. It has the capacity to spill over. From the blackboard, write down the illustrations for liquid. In this third column which matter is placed?

Students:- The matters in the third column are gaseous in nature.

Teacher:- Can you see gas?

Students:- No miss.

**Figure 7.2 Gas has no Shape and Size.**



(Teacher lights up an incense stick)

Are you getting the fragrance children? How is this fragrance reaching you?

Students:- The fragrance is reaching to us with the air.

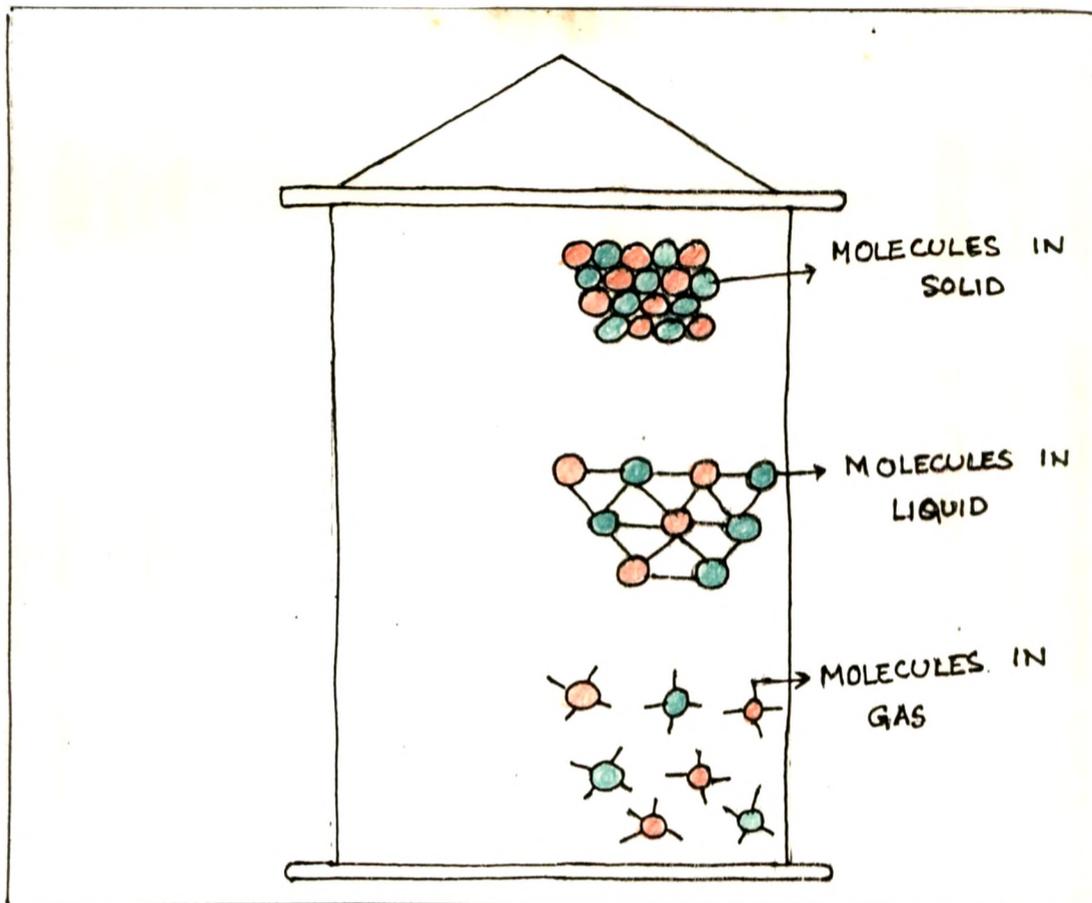
Teacher:- (Sprays perfume) Did you get the fragrance upto the last bench.

Students:- Yes, teacher.

Teacher:- In the morning when you go to take bath you might have noticed vapour coming out of the vessel. These vapours belong to gaseous state. If you cover the vessel with plate, you will find formation of water droplets.

Teacher:- Good! What is gaseous matter? 'Any matter that does **not have definite shape or size is known as gaseous**'. Write down the examples from the black board of gaseous matter. Which ever matter we saw today, are made up of small **atoms**. These atoms are very minute, we cannot see them with naked eye, it needs lot of magnification. We can see the atoms only through a microscope.

**Figure 7.3 Arrangement of Atoms in Solid, Liquid and Gaseous Matter**



Teacher:- The atoms of a solid object are placed very close to each other. That is why the object has a definite shape and size. Look at the atoms of liquid, these atoms are linked with a chain but they are far from each other and that is why they can spill. They do not possess a definite shape. Now look at the last picture. The atoms in the gaseous state are very very far and do not have those connections as in liquid. That is why gaseous matter does not possess definite

shape or size. But as the atoms are free and they can move freely with the air.

Have you understood?

Students:- Yes, teacher.

Teacher:- We have been talking about matter. Let us find out, what is matter?

'Any thing that possesses weight and occupies space is called as matter' Write this definition in your note book.

Students:- You said all matter have weight but air does not have weight?

Teacher:- You have a good question, we will prove the characters of matter one by one. Then you will get your answer.

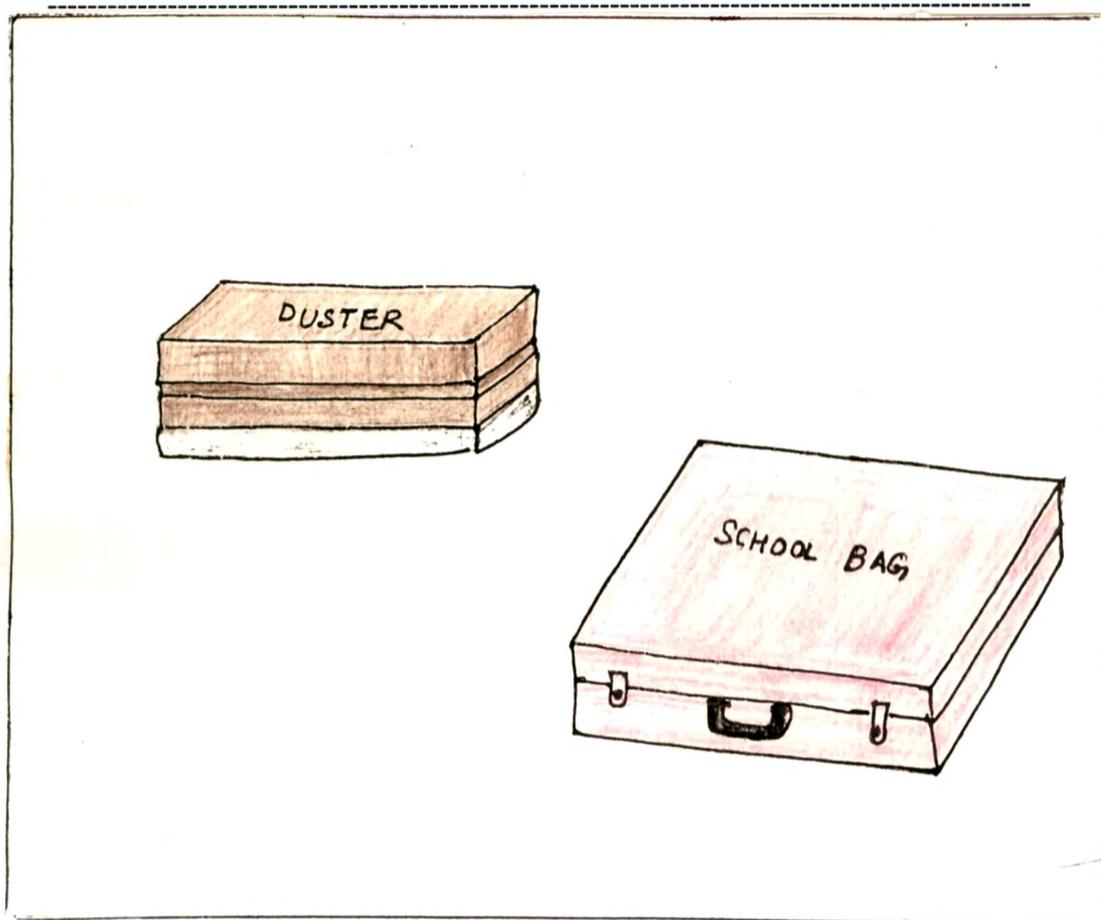
Let us begin with "solid matter possesses weight".

Teacher :- Ravi, come here. In one hand you take duster and in another hand you lift this bag and then tell me, which one is heavy. The duster or the bag?

Ravi:- Teachers this bag is heavy.

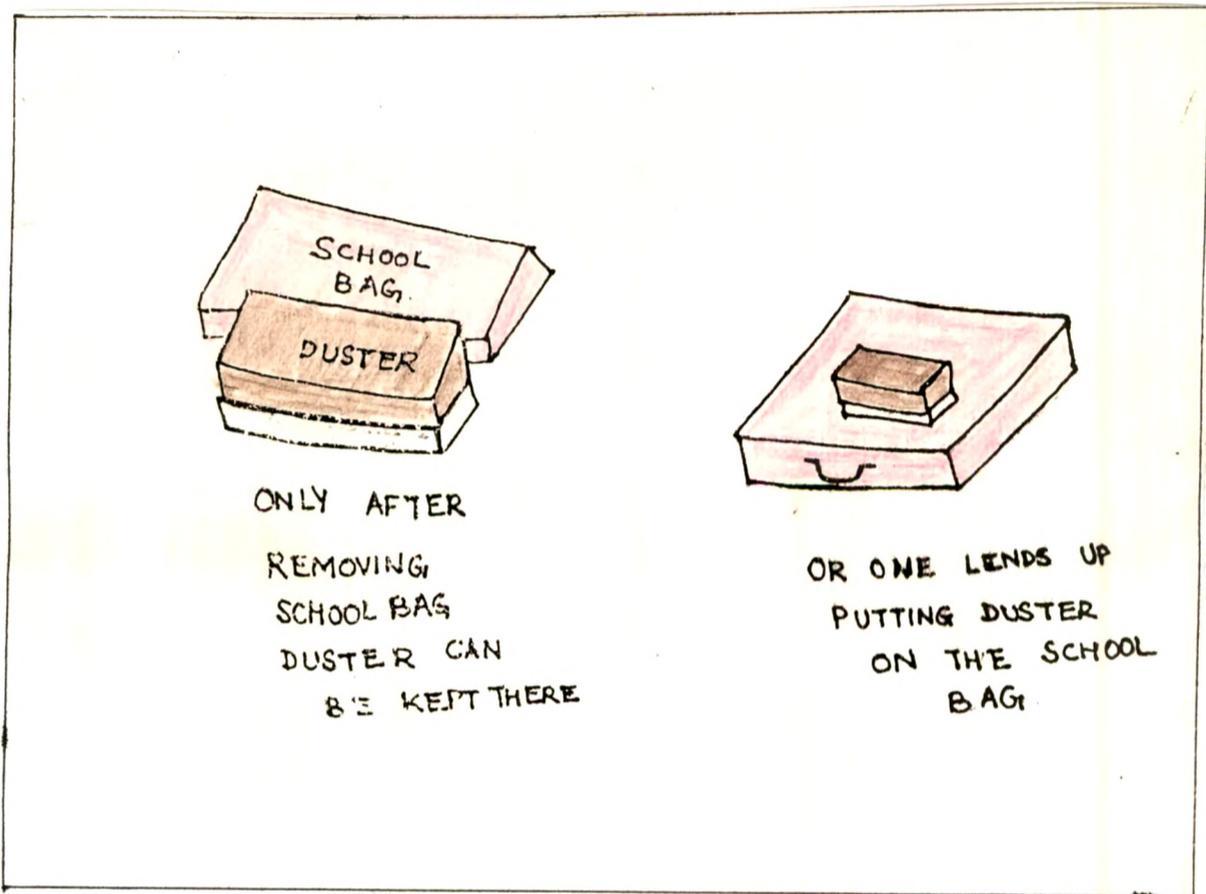
Teacher:- Good!

**Figure 7.4 Solid Matter possesses Weight**



Teacher:- From the above experiment, we have only proved that solid has weight. Take any solid object and weight and you will come to know that it possesses weight. Now let us see the second character. If I want to place this duster in place of this bag, can I do that?

Figure 7.5 Solid Matter Occupies Space



Teacher:- I can place the duster only by removing the bag from its place. What can we say from this?

Students:- Every solid occupies space. Unless one object is removed, another object cannot be placed.

Teacher:- Very Good! Now let us see the characters for liquid.

Look at this glass and this bucket, both are filled with water. Which has more weight?

Students:- Bucket is more heavy.

Teacher:- Empty glass has lesser weight than the filled glass. What can we say from this?

Students:- The increased weight is due to the water added in the empty glass.

**Figure 7.6 Liquid Matter has Weight**



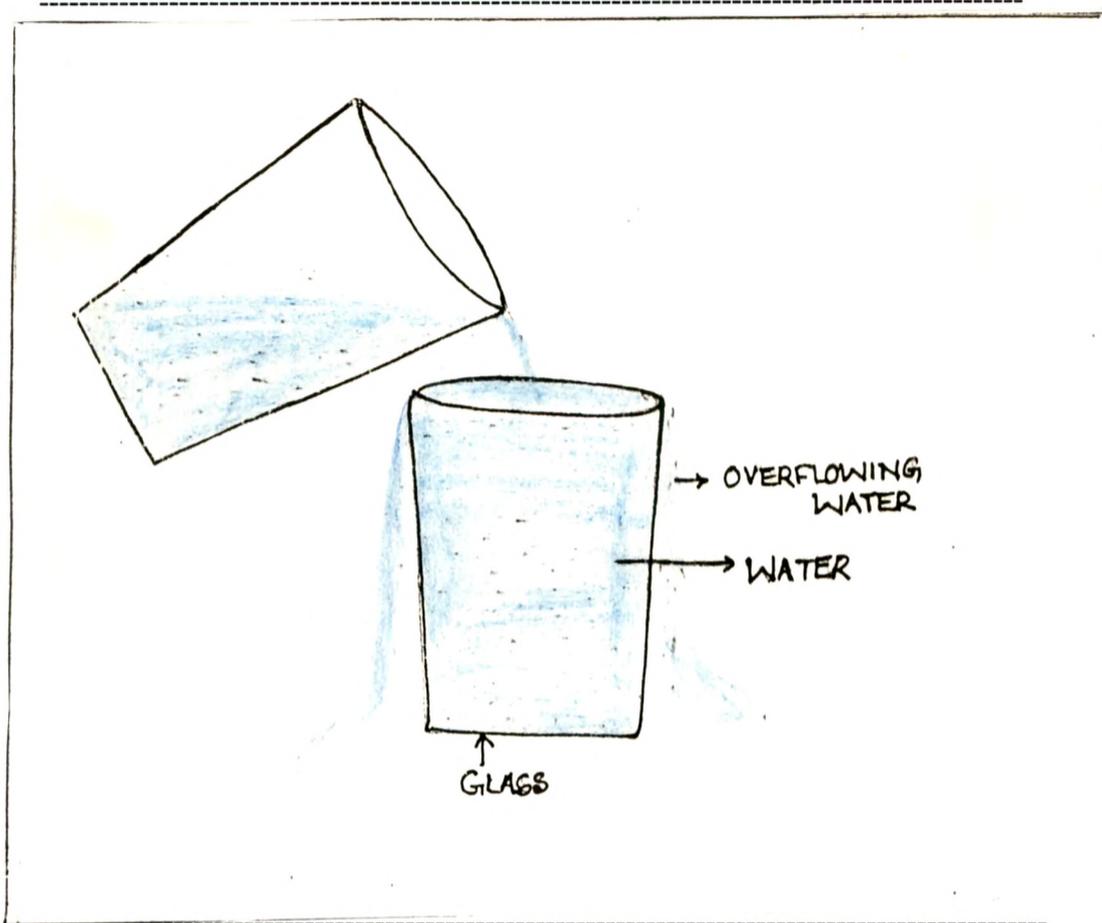
Teacher:- Good! Now look at this glass I have filled the glass with water. Now if I try to add water in this glass can it be contained in this glass?

Students:- No miss. The water will spill over as it is already full of water.

Teacher:- What can we say from this?

Students:- Liquid occupies space.

**Figure 7.7 Liquid occupies Space**

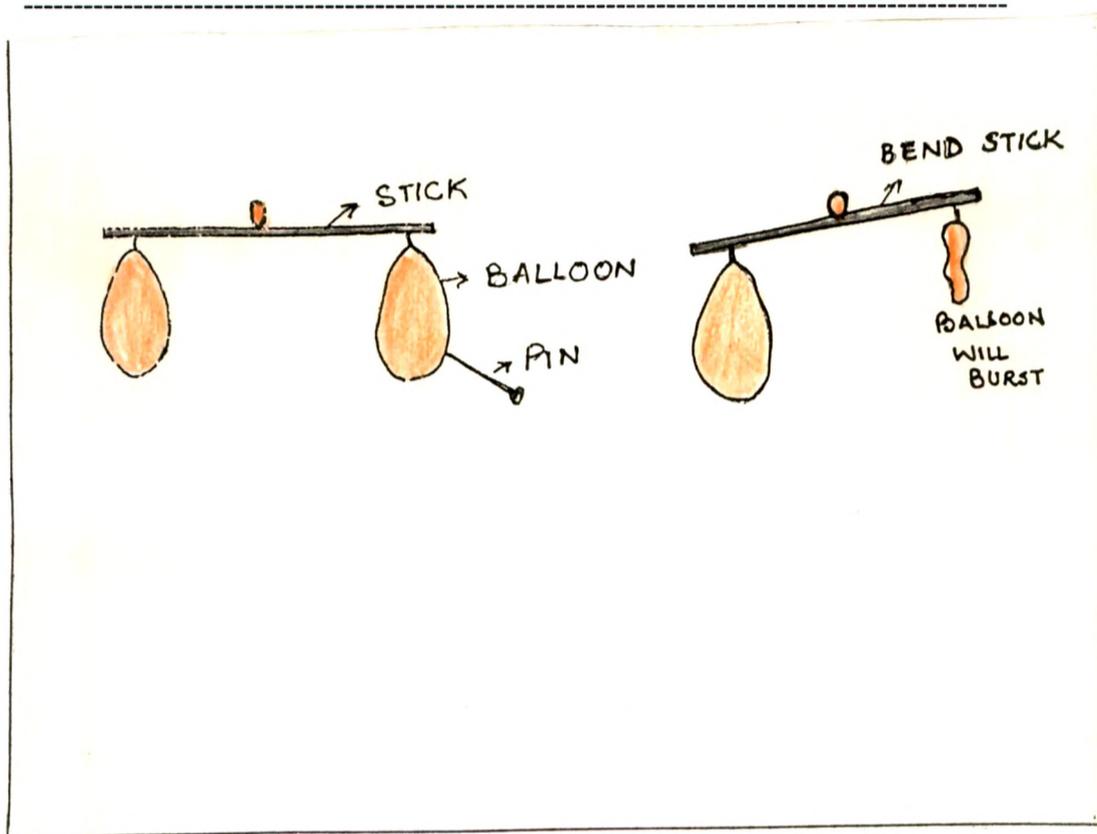


Teacher:- Now look at this balloon. What will happen if I keep on filling air into it?  
It will reach to such a point that it will finally burst, if we fill more air. What can we say from this?

Students:- Air occupies space.

Teacher:- Good! Now look here carefully. Take a stick, tie a thread in the centre. On both the side, tie two balloons of same size. Balance the stick properly.

Figure 7.8 Air has Weight



Prick one side balloon with the help of needle. The stick will bend towards the filled balloon. Now tell me what can be said from this?

Students:- Air has weight.

Teacher:- Very Good! So, you have understood the experiments. You try these experiments at your home. Now tell me what is matter?

Students:- Any thing that occupies space and possesses weight is called as matter.

Teacher:- Matter has how many forms?

Students:- Matter has three forms namely solid, liquid and gaseous.

Teacher:- Define solid matter.

Students:- Any matter that possesses definite shape and size is called as solid.

Teacher:- Good! Define liquid .

Students:- Any matter that possesses definite volume but does not have shape is called liquid.

Teacher:- How will you define gas as matter.

Students:- Any matter that does not have definite shape or size is called gaseous.

Teacher:- What is matter made of?

Students:- Matter is made up of atoms.

Teacher:- Good! How is the arrangement of atoms in solid?

Students:- The atoms in solid are compactly arranged, due to this they have a definite shape and size.

Teacher:- How are the atoms arranged in liquid?

Students:- The atoms of liquid are arranged loosely as if they are chained with each other. This is the reason, why liquid possess definite volume but no shape.

Teacher:- How is the arrangement of the atoms in a gaseous matter?

Students:- The atoms in a gaseous state are arranged freely. That is why any gaseous matter can travel with the air.

Teacher:- Very Good! Now write down your homework. Make a list of three different matter available in your house. Also experiment and find out whether they have the characters of matter. Make a list of twenty solid, five liquid and five gaseous matter. Have you understood this clearly?

Students:- Yes miss.

### Forms of Matter

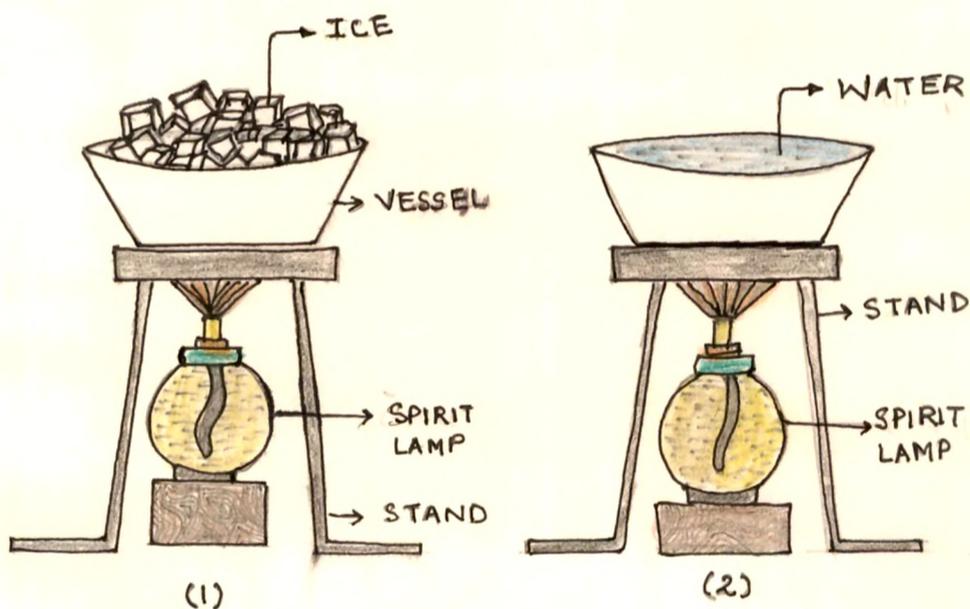
30 minutes

Teacher:- Children, yesterday we learnt about the characters of solid, liquid and gas. We have also come to the conclusion that every matter possesses weight and occupies space. Did you do your homework?

Students:- Yes miss we did our homework and experimented also. It was a great fun.

Teacher:- Good! Today we will see what happens if we give heat to a matter?

**Figure 7.9 Solid Ice gets Converted into Water when heated.**



Look here carefully, In this bowl there is ice and I am keeping it on the stove what has happened?

Students:- Teacher the ice has started melting, its gradually changing into water.

Teacher:- Ice belongs to which category of matter?

Students:- Solid.

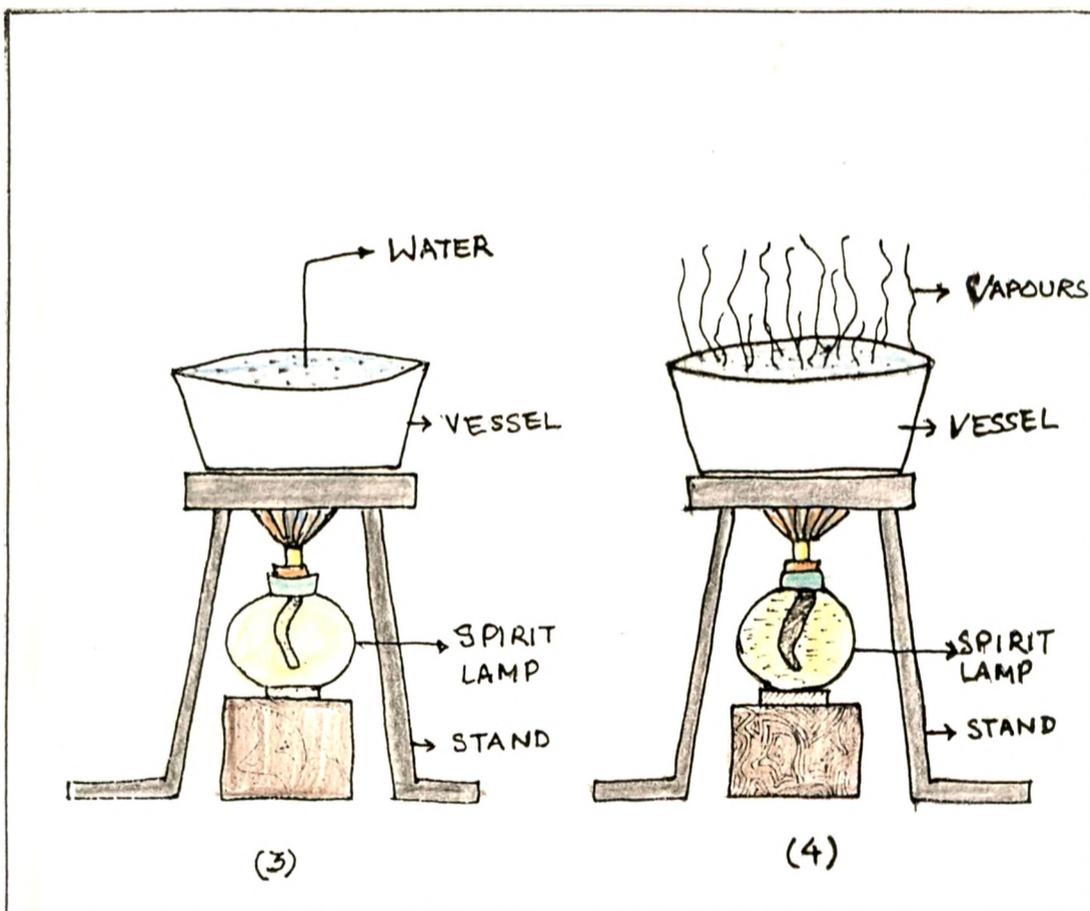
Teacher :- That's right. After heating it got converted into which state of matter?

Students:- Ice on heating got converted into water.

Teacher:- What will happen if we continuously heat the water?

Students:- It will become hot, then gradually vapours will come out from it.

**Figure 7.10 When Water is Heated gets Converted into Vapour.**



Teacher:- Water has how many forms?

Students:- Water has three forms namely solid, liquid and gaseous.

Teacher:- Very good! In winter, the coconut oil becomes solid due to decrease in temperature, so we can say when temperature is decreased, the liquid matter gets converted to solid. If we heat the oil gradually, it gets converted to liquid then if we continue to heat, it gets converted into gaseous form. You all have ate ice-cream. If we add sugar in milk and deep freeze, it gets converted into ice-cream. If we keep ice-cream at room temperature, it will get converted into sweet milk. Similarly, if you heat ghee, it melts. You might have seen the candle. Before lighting the candle, it is solid in state. But when we lit the candle, it gets converted into liquid wax gradually.

Teacher:- In winter season ghee is seen in which form?

Students:- In winter, ghee is found in a solid form.

Teacher :- Good! If we give heat to ghee, what will happen?

Students:- It gets converted into liquid.

Teacher:- Good! What happens if we cool a matter? If we freeze milk and sugar, what will happen?

Students:- It gets converted to solid ice cream.

Teacher:- So, we can say that, it gets converted into solid state from a liquid state.

Students:- Teacher if we freeze water it gets converted into ice. So, we can say that liquid gets converted into solid.

Teacher:- By giving heat to any matter vapours comes out from it. When we provide heat to water, milk, oil, tea, coffee, ghee, etc.. vapour comes out.

Teacher:- So, You have understood, if we freeze milk, water or ghee, what happens. Go home and try and experiment. This is your homework.

## UNIT VII

written test

Q.1 State whether the following statements are true or false.

5 (1x1)

1. We can see the atoms of matter with the naked eye.
2. The atoms of solid matter are away from each other.
3. Atoms of liquid are spread out.
4. The atoms of gaseous matter spread slowly.
5. Liquid and gaseous matter does not have definite shape.

Q.2 Certain items are given when heated mention they will change into which state. 2.5 (1x1/2)

1. butter
2. solidified coconut oil
3. wax
4. water
5. ghee.

Q.3 Certain items are given when freezed mention they will turn into which state

2.5 (1x1/2)

1. water
2. vapour
3. milk
4. coconut oil
5. iron

Q.4 Answer the following questions in brief.

10(1x2)

1. Matter has how many forms?
2. Which are the characteristics of matter?
3. What constitutes matter?
4. Water has how many forms? which are they?
5. Which solids can be converted into liquid?

Oral examination

10(1x5)

1. How will you prove that air has weight?
2. Prove that air has weight.

Activity test

Some objects are given you have to differentiate them into solid, liquid and gaseous.

- |                  |             |              |              |           |          |           |            |
|------------------|-------------|--------------|--------------|-----------|----------|-----------|------------|
| 1. iron          | 2. air      | 3. aluminium | 4. water     | 5. vapour |          |           |            |
| 6. buttermilk    |             |              |              |           |          |           |            |
| 7. oil           | 8. butter   | 9. petrol    | 10. elephant | 11. horse |          |           |            |
| 12. parrot       |             |              |              |           |          |           |            |
| 13. human beings | 14. perfume | 15. gas      | 16. pan      | 17. bench | 18. milk | 19. chalk | 20. mouse. |

Answer key for unit VII tests.

A-1

- |          |          |          |          |           |
|----------|----------|----------|----------|-----------|
| 1. wrong | 2. wrong | 3. right | 4. wrong | 5. right. |
|----------|----------|----------|----------|-----------|

A-2

1. butter - ghee
2. frozen coconut oil - oil

A-3

1. water - ice
2. vapour - water

3. wax - melting wax

3. milk - ice-cream

4. water - vapour

4. coconut oil -frozen coconut oil

5. iron - liquid iron

5. ghee - frozen ghee.

A-4

1. Matter has three forms; solid, liquid and gaseous.

2. Matter has weight and matter occupies space.

3. Matter is made of atoms.

4. Water has three forms; liquid, solid and gaseous.

5. Iron, water and ghee can be changed from solid to liquid.

Oral examination

1. Take a stick in the centre tie a thread in the centre. At both the ends tie two balloons. Balance them properly, once balanced, pierce one of the balloon with needle. The stick will bend on other end. Indicating that air has weight.

2. Fill one balloon with air, keep on filling more air. You will reach a point beyond which air can not be filled. If you fill more than that limit the balloon will burst.

This indicates that air that is inside is occupying the space.

Activity test

Solid

Liquid

Gaseous

1.iron

1. water

1. air

2. aluminium

2. buttermilk

2. vapour

3. butter

3. oil

3. perfume

4. elephant

4. milk

4. gas

5. horse

5. petrol

6. parrot
7. human beings
8. pan
9. bench
10. chalk.

### COMPREHENSIVE EXAMINATION

written test.

20

Q.1 State whether the following statements are right or wrong.

5(1x1/2)

1. Roses are nonliving.
2. Temperature, humidity and coolness remains same through out the year.
3. Pole star is seen every day in west.
4. For plants to grow and develop, land is necessary.
5. If we take bath with polluted water, skin diseases occur.
6. We must feed animals with grass.
7. Atoms of liquid flow at great distance.
8. Liquid and gaseous matter do not have a definite shape.
9. In the land many microbes live.
10. In winter people eat food warm in nature.

Q.2 Fill in the blanks.

5(1x1)

1. The land which has more of mud is known as \_\_\_\_\_.
2. On heating water it gets converted from \_\_\_\_\_ form to \_\_\_\_\_ form.

3. On a winter morning \_\_\_\_\_ is seen on the grass.

4. Sun light is useful to plants in \_\_\_\_\_ preparation.

5. I move around earth \_\_\_\_\_.

Q.3 Answer the following questions in brief.

1. Which are the components of solar system?

2. How can we increase the fertility of soil?

3. Who are the friends of farmer?

4. Which things can be called nonliving mention in one sentence?

5. What is a balanced diet?

Oral Examination

10 (1x5)

1. How will you take care of your animals?

2. How will you take care of your plants?

Activity test

1. Prove air has weight and explain with appropriate diagram.

2. Match the given pictures appropriately.

Answer key for comprehensive test.

A-1

1.wrong 2.wrong 3. wrong 4. right 5. right 6. right 7. right 8. right

9. right 10. right.

A-2

1. Fertile land 2. liquid 3. dew drops 4. food 5.

moon

A-3

1. The components of solar system are planets with their satellite, stars, meteors, comets, constellation, shooting stars, milky way and many other galaxies it constitutes solar system.
2. Fertility of soil can be increased by adding fertiliser or by changing the crop.
3. Farmers friends are earthworm, ox and snake.
4. The object that does not possesses life is called as non living.
5. Balanced diet is that food which contains all the necessary components in appropriate quantity.

oral answers

1) Animal care.

1. We must bathe our animals.
2. Their surroundings should be kept clean.
3. Work should be taken according to their capacity.
4. If they get hurt we must take them to doctor.
5. Their forests should not be cut.
6. They should be given appropriate amount of food and water.
7. We should not beat them.

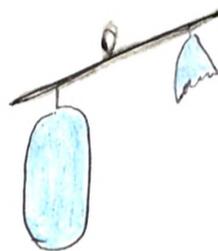
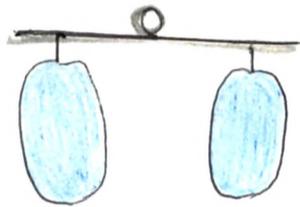
2) Plant care.

1. Plant should be kept in sunlight.
2. Plant should be watered regularly.
3. Extra grass growing around it should be removed.
4. Fertiliser has to be added to the plant.
5. Soil around the plant should be made soft.

6. If there are germs, pesticides have to be sprayed.

Activity test

1. Take a stick in the centre tie a thread in the centre. At both the ends tie two balloons. Balance them properly, once balanced, pierce one of the balloon with needle. The stick will bend on other end. Indicating that air has weight.



2. Matching the pictures.

- |                                    |                      |                   |                       |
|------------------------------------|----------------------|-------------------|-----------------------|
| 1. sun - east                      | 2. bird - living     | 3. iron - solid   | 4. zodiac - 27        |
| 5. sweater - winter                | 6. tea - liquid      | 7. gas - gaseous  | 8. umbrella - monsoon |
| 9. mariner - mariners compass.     | 10. fertility - land | 11. milk - liquid |                       |
| 12. dog - living, solid            | 13. fish - solid     | 14. sent - liquid |                       |
| 15. mariners compass - directions. |                      |                   |                       |