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PARVEEN ARIF ALI

Teaching Guide

Revised Edition

Amazing Science

OXFORD
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Contents

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Introduction

Children want to know things. Early guidance and varied experiences do much to stimulate the development of their natural intelligence.

A teacher can play a very important role in arousing the interest of students by allowing them to discuss facts and ideas and helping them to draw conclusions from them as to why and how things happen.

The teacher can stimulate the thinking process of students by asking questions and by encouraging them to ask questions.

Experimental work enables students to test for themselves the facts that have been learnt by them, thereby making it easier for them to understand the implications of the background to their activities.

This course has been developed to provide information about the world around on which students can base their opinion, verify information, come to conclusions, and use the knowledge thus gained in their everyday life. It will help in maintaining the curiosity and enthusiasm of students who have just started studying science. Concepts developed at this stage will be of use in their studies at an advanced level later. It will help them to develop a better outlook on life.

About the Pupil's Book:

This science series, now completely revised, has been written especially for children at the primary level. It provides information at a child's level of understanding and has a direct appeal for children who need interesting and easy to read material. Keeping in view the interests, abilities, curiosities, and needs of children, it provides stimulating learning experiences and offers enjoyable educational motivation, thus serving as a building block for further learning.

The keyword in science is curiosity. The material in the series is designed to awaken in a child the same urge that motivates in a scientist the desire to know the answer to a question. There is a wide range of topics that will interest and motivate the child.

Teachers will recognize that this series deals with those broad areas about which most children frequently express curiosity; that it provides answers to many questions they ask, and offers new and exciting information in many fields. It aims to create an awareness, as well as stimulate an interest in science.

The language is simple and easy to read and within the range of the abilities of students of each grade. Together, the text and illustrations motivate children to discuss, question, and explore.

The contents have been selected and presented in such a way as to capture and hold the interest of the students. The objective is to simplify complex ideas and present them in an interesting way. Every effort has been made to keep the language simple.

When it is necessary to use a specialized word, it has been used. When it is not self-explanatory within the context, it has been defined. Clear and well-labelled illustrations have been included, which help to identify and clarify the topics dealt with.

Good pictures and diagrams arouse and develop interest. These make lasting impressions. They help to make the text clear. They also appeal to the child's imagination, while satisfying his curiosity and often provoke a favourable reaction.

Simple practicals—interesting and stimulating presentation of factual materials—offer every chance of successful learning experiences. Knowledge of problem-solving techniques so acquired can be applied in everyday life.

It is intended, through this series, to introduce children to many of the interesting and enjoyable things in science they can learn about and do for themselves. The series also intends to develop in them a quest for knowledge and an understanding of how science is shaping the world in which they live.

The role of the teacher:

It is up to the teacher to devise ways and means of reaching out to the students, so that they have a thorough knowledge of the subject without getting bored.

The teacher must use his/her own discretion in teaching a topic in a way that he/she feels appropriate depending on the intelligence level as well as the academic standard of the class.

To the teacher:

With your assurance and guidance the child can sharpen his/her skills. Encourage the child to share his/her experiences. Try to relate pictures to real things. Do not rush the reading. Allow time to respond to questions and to discuss pictures or particular passages. It will enhance learning opportunities and will enable the child to interpret and explain things in his/her own way.

Method of teaching:

The following method can be employed in order to make the lesson interesting as well as informative.

The basic steps in teaching any science subject are:

(i) locating the problem
(ii) finding a solution by observation and experimentation
(iii) evaluating the results
(iv) making a hypothesis and trying to explain it

Preparation by the teacher:

Be well-prepared before coming to the class.

(i) Read the text.
(ii) Prepare a chart if necessary.
(iii) Practise diagrams which have to be drawn on the chalkboard.
(iv) Collect all material relevant to the topic.
(v) Prepare short questions.
(vi) Prepare homework, tests, and assignments.
(vii) Prepare a practical demonstration.

The following may also be arranged from time to time.

(i) Field trips
(ii) Visits to the laboratory
(iii) A show of slides or films
(iv) Plan projects

The usual strategy which is easy as well as effective can be adopted:

(i) Before starting a lesson, make a quick assessment of the previous knowledge of the students by asking them questions pertaining to the topic. Relate them to everyday observation of their surroundings or from things that they have seen or read about in books, magazines, or newspapers.

(ii) Explain the lesson.
(iii) Write difficult words and scientific terms on the chalkboard.
(iv) Ask students to repeat them.
(v) Help students to read text.
(vi) Show materials, models, or charts.
(vii) Make diagrams on the chalkboard.
(viii) Perform an experiment if necessary.
(ix) Ask students to draw diagrams in their science manuals.
(x) Students should tackle objective questions independently.
(xi) Ask questions from the exercises.
(xii) Answers to questions to be written for homework
(xiii) The lesson should be concluded with a review of the ideas and concepts that have been developed or with the work that has been accomplished or discussed.

Conclusion:

The teacher can continue the learning process by not only encouraging and advising the students, but also by critically evaluating their work.

It is not necessary that the lesson begins with a reading of the textbook. The lesson can begin with an interesting incident or a piece of information that will hold the interest of the students and they will want to know more about the topic.

The topic should then be explained thoroughly and to check whether the students are following or not, short questions should be asked every now and then.

Sketches and diagrams on the chalkboard are an important aspect to the teaching of science, but too much time should not be spent on them as the students lose interest. An alternative to chalkboard drawing is a ready-made chart or one made by the teacher can be displayed in the class. The use of visual material keeps students interested as well as helps to make mental pictures which are learnt quickly and can be recalled instantly. Pupils should be encouraged to draw and can be helped by the teacher. Diagrams that are not in the text should either be copied from the chalkboard or chart, or photocopies can be made and distributed in the class.

Simple experiments can be performed in the class. If possible, children may be taken to the laboratory occasionally and be shown specimens of plants and animals, chemicals and solutions, and science apparatus, etc.

Practical work arouses interest in science. Class activities can be organized in such a way that the whole class participates either in groups or individually, depending on the type of work to be done or the amount of material available.

It is hoped that the above guidelines will enable teachers to teach science more effectively, and develop in their students an interest in the subject which can be maintained throughout their academic years, and possibly in their lives as a whole.

These guidelines can only supplement and support the professional judgement of the teacher but in no way can they serve as a substitute for it.

Science

Teaching objectives:

To explain what we learn in science
To explain how things are different

Teaching strategy:

Draw an insect on the chalkboard and label it.
Ask: How many legs does it have?

Ask students the colours of various things.

Ask: Is jelly soft or hard?
Is ice hot or cold?

Ask the shapes of various things.

Ask: Which is bigger, an elephant or a mouse?
Which is the biggest animal?
Can you pull a cart?
Can a kitten pull a cart?
Explain the difference between strong and weak with examples.

Ask: In the story of the hare and the tortoise, who won the race?
Explain fast and slow with examples.

Ask: Where does a fish live?
Where does a rabbit live?
Where does a bird live?
Explain the living places of animals with examples.

Explain that when we are studying things around us we are learning science.

Answers to Activities in Unit 1

2. (a) six (b) red
   (c) green (d) soft
   (e) hard (f) cold
   (g) hot (h) round

3. (a) big (b) small
   (c) strong (d) weak
   (e) slow (f) fast

4. a. six legs b. four petals
   c. finding things out

Additional Activity

MCQs

(a) A way of finding things out is called _____.

English Urdu Science [Science]

(b) The number of legs an ant has is _____.

2 4 6 [6]

(c) The coloured leaves of a flower are called _____.

petals sepals leaves [petals]

(d) Tea is _____.

white hot cold [hot]

(e) A horse is _____.

small strong slow [strong]

(f) The colour of an apple is _____.

blue red purple [red]

(g) The shape of a football is a _____.

round square rectangle [round]

(h) A mouse is _____.

strong big small [small]

(i) A rabbit is _____.

fast slow strong [fast]

(j) A stone is _____.

soft hard hot [hard]

Lesson plan

Date: Time: 40 mins

Unit 1 **Topic: Science**	**Teaching objectives**	**Learning outcomes** Students should be able to:	**Resources/Materials**	**Activities/CW/HW**
Science	• to define science • to explain that science is about observation and finding out what is not known	• understand the work of a scientist • identify through observation the differences between things	A poster showing the word 'SCIENCE' written on it; assorted natural objects such as seeds, leaves, flowers, rocks, soil, feathers, bones; assorted man-made objects such as nails, bottle caps, paper, pencil, clips, etc.	Ask students to sort similar things into piles. CW: Q1, Q2, Q3 HW: Q4 a. b. c.

Key words: science, observe, living, non-living

Method: Hold up the poster showing the word 'SCIENCE' and ask the students to explain what the word means. Explain that it means knowledge. It is a way of looking at everything around us that is living, non-living, and not living now. It is also the study of how things work and why things happen.

Scientists study and observe things. They try to answer why, how, and when things happen, by making observations. Explain that 'observe' means to study carefully.

Discuss the differences between living and non-living things.

Name: _____ Date: _____

Draw a red circle around animals, a green circle around plants, and a blue circle around the non-living things.










Name: _____ Date: _____

Draw the missing parts.

Animals

Teaching objectives:

To describe the structure of an insect
To describe different types of insects
To explain the structure of a fish
To discuss different types of water animals
To describe the structure of a small animal
To describe different types of small animals
To introduce the names of some wild animals
To discuss some useful animals and how they are useful
To describe the structure of a bird
To discuss different types of birds

Teaching strategy:

Ask: What is the difference between a plant and an animal?
Explain that living things are of two kinds: plants and animals.

Ask: Can you name some animals?
Explain that animals are of many shapes and colours.

Show students a chart of various animals.
Draw an insect on the chalkboard and label it.
Write the names of insects.

Draw a rabbit on the chalkboard and label it.
Ask: Can you name some small animals? Write their names on the chalkboard.

Draw a fish on the chalkboard and label it.
Ask the names of some water animals.
Write their names on the chalkboard.

Ask the names of some wild animals.
Write their names on the chalkboard.

Ask: What do wild animals eat?
Ask: Where do wild animals live?
Explain what wild animals eat and where they live.

Ask: Which animals do we keep on a farm?
Ask: Which animals do we keep in the house as pets?

Explain how animals are useful to us.
Show the picture of a cow. Talk about it.

Ask: Where does a bird live?
Draw a bird on the chalkboard and label it.
Ask: How does a bird fly?
Explain the use of feathers and wings.
Ask the names of some birds.

Write the names of birds on the chalkboard.
Teach students to make simple drawings of some animals.

Answers to Activities in Unit 2

2. (a) camel — carries heavy loads
   (b) sheep — gives us wool
   (c) hen — lays eggs
   (d) horse — pulls a cart
   (e) cow — gives us milk
   (f) goat — gives us meat

3. (a) no (b) yes
   (c) yes (d) no
   (e) no

4. (a) ant (b) butterfly
   (c) ladybird

5. a) mouse b) rabbit
   c) crow d) cat
   e) dog f) squirrel
   g) parrot h) duck
   i) sparrow j) peacock

6. a. whale a. deer
   b. starfish b. tiger
   c. dolphin c. lion

Additional Activity

MCQs

(a) Which of the following is an insect?

rabbit	butterfly	cow	[butterfly]

(b) Which of the following is not a living thing?

book	ant	fly	[book]

(c) Which one of the following is a big animal?

cat	mouse	whale	[whale]

(d) Water animals live in _____.

air	land	water	[water]

(e) Which one of the following is not a wild animal?

fox	tiger	goat	[goat]

(f) Birds fly with their _____.

legs	wings	tails	[wings]

(g) Which one of the following animals is not a farm animal?

horse	cow	monkey	[monkey]

(h) A sea horse lives in the _____.

ground	sea	garden	[sea]

(i) Which of the following is not a water animal?

crab	starfish	ladybird	[ladybird]

(j) Which is the biggest land animal in the world?

elephant	giraffe	hippopotamus	[elephant]

Lesson plan

Date: Time: 40 mins

Unit 2 **Topic: Animals**	**Teaching objectives**	**Learning outcomes** Students should be able to:	**Resources/Materials**	**Activities/CW/HW**
1. Shapes, colours, and sizes of animals	• to observe and compare some animals on the basis of their shapes, colours, and sizes	• distinguish between the different kinds of animals on the basis of their appearance	Preserved and live specimens of small insects and animals; Charts and pictures of wild animals, water animals, and birds	Help the students to create a zoo for insects in a small carton or a shoe box, by putting into it some garden soil, dried leaves, vegetables, and fruits. Observe the creatures (e.g. worms, ants) with a magnifying glass. Help the students to use reference books to find the names of some of the creatures.
Key words: animal, insect, pet, water animal, farm animal **Method**: Introduce the students to animals through pictures, videos, charts. Have them observe at least two or three animals at close range. Guide them to notice the different features such as skin types and colours, shapes, and sizes.				

Lesson plan

Date: Time: 40 mins

Unit 2 **Topic: Animals**	**Teaching objectives**	**Learning outcomes** Students should be able to:	**Resources/Materials**	**Activities/CW/HW**
2. Where animals live	• to describe the habitats of different animals	• describe the habitats of insects and land and water animals, and to describe how they are adapted to be able to live in a particular environment	Assorted pictures of a variety of natural habitats of animals	CW: Q1, Q2, Q3, Q4 HW: Q5, Q6
Method: Show the students pictures of different habitats and discuss how and why the animals can live in them. Discuss adaptations of animals. Take the students outside and look for small creatures. Ask the students to notice their colours, the ways in which they move, where they live, and what they eat.				

Lesson plan

Date: Time: 40 mins

Unit 2 **Topic: Animals**	**Teaching objectives**	**Learning outcomes** Students should be able to:	**Resources/Materials**	**Activities/CW/HW**
3. Usefulness of animals	• to discuss how animals are useful for us	• recognize which animals are useful to us and in what manner	Pictures of various farm animals	Make a chart showing how animals such as the hen, the horse, the sheep, the cow, the goat, and the camel are useful to us.
Method: Discuss which animals can be kept as pets and what their needs would be. Also discuss the usefulness of farm animals.				

Lesson plan

Date: Time: 40 mins

Unit 2 **Topic: Animals**	**Teaching objectives**	**Learning outcomes** Students should be able to:	**Resources/Materials**	**Activities/CW/HW**
4. Food that animals eat	• to identify food that animals eat	• list the foods that animals eat		HW: Worksheet

Key words: animal, wild, plant

Method: Discuss the different kinds of food that wild animals and birds eat.

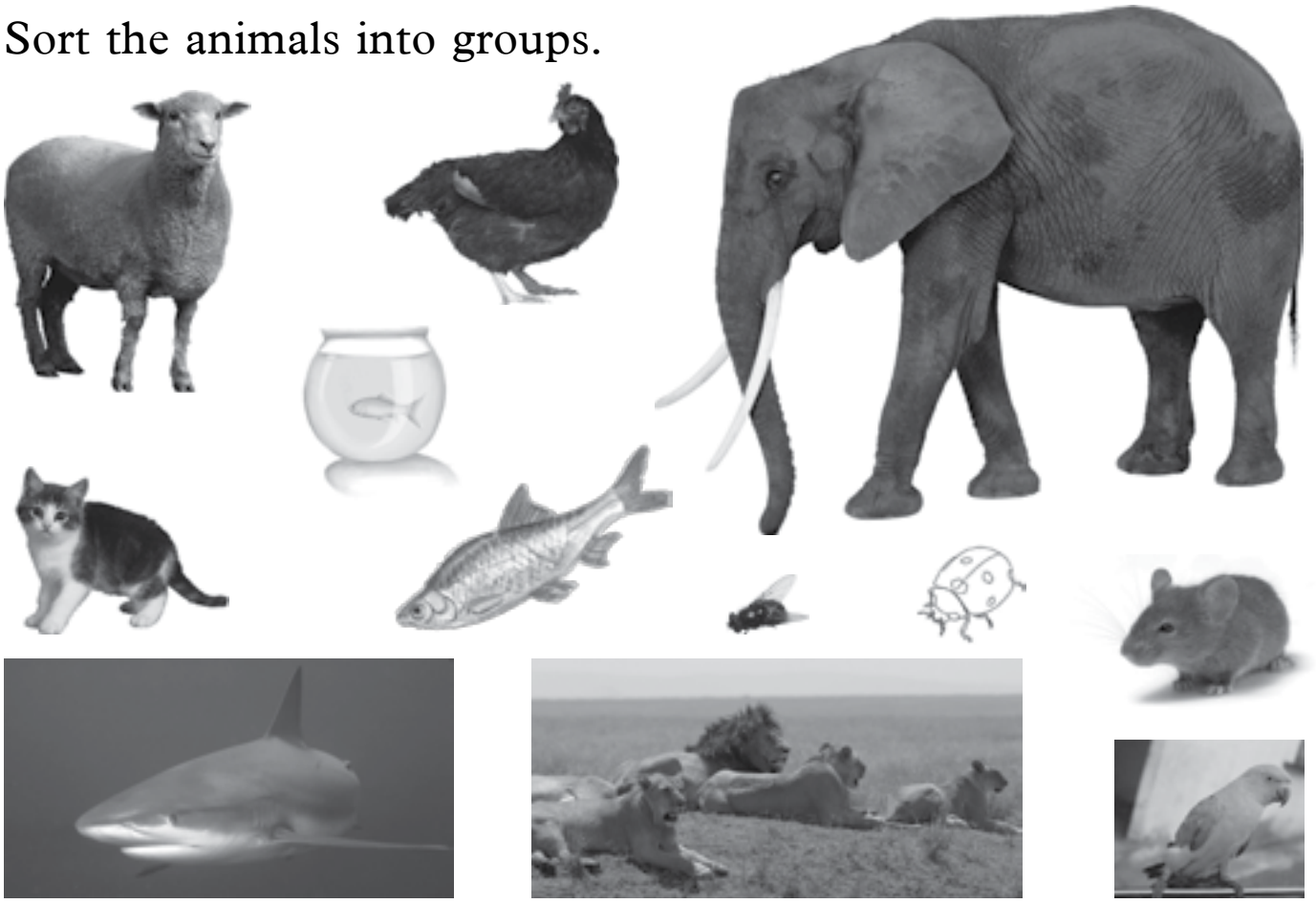
Ask: What does your pet eat? How do wild animals get their food? What does a lion eat? What does a zebra eat? What do fish eat?

Discuss the foods of herbivores, carnivores, and omnivores.

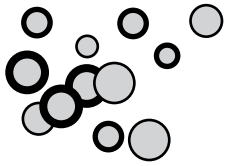
Ask: What kind of food do we eat? Are we meat eaters, plant eaters, or both?

Name: _____ Date: _____

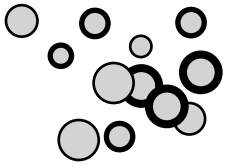
Sort the animals into groups.



Group	Animals
Insects	
Small animals	
Water animals	
Wild animals	
Useful animals	
Birds	



UNIT 3



Plants

Teaching objectives:

To discuss the structure of a plant
To describe the parts of a plant
To discuss the functions of each part
To discuss the types of plants
To discuss how plants are useful
To explain where plants can grow

Teaching strategy:

Draw a plant on the chalkboard and label its parts.
Show a complete plant to the students and explain the function of each part.

Distribute leaves of various shapes to the students.
Show them the midrib and veins.
Explain the structure and function of the leaf.
Teach students to make a leaf print by rubbing a pencil on a piece of paper placed over the leaf.

Distribute some flowers to the students.
Show a section of a flower to the students.
Draw a section of a flower on the chalkboard and label its parts.
Ask students to identify the various parts in their own specimens.
Explain the function of the flower.

Explain how fruits and seeds are produced. Cut some fruits and show the seeds.
Explain how seeds grow into new plants.

Ask: Why are leaves green?
Explain the presence of chlorophyll.

Ask: How does a plant eat?
Explain how green plants make food in sunlight.
Draw a mushroom on the chalkboard.

Ask: What is the colour of a mushroom?
Where does a mushroom grow?
Explain non-green plants.
Explain how non-green plants get their food.
Draw various types of plants on the chalkboard. Write their names.

Ask: What is the difference between them?
Explain the difference in the size and strength of the stem.

Ask: What do we get from plants?
Explain the usefulness of flowers, seeds, fruits, vegetables, etc.

Ask: What is a table made of? Where does wood come from?
Explain that wood comes from the hard stems of trees.
Ask: What things can be made from wood?

Show the students a water plant growing in a glass jar.
Ask: Can plants grow in water?

Draw a pine tree on the chalkboard.
Ask: Where do such trees grow?

Draw a cactus on the chalkboard.
Ask: Where does a cactus grow?
Explain that plants can grow in different types of habitat.

Teach students to draw flowers, leaves, roots, seeds, fruits, and vegetables.

Answers to Activities in Unit 3

2. a. food b. dead
   c. stems d. Trees
   e. water

4. a. A plant usually grows from a seed.
   b. Desert plants grow in hot, dry places.
   c. In cones.

5. (a) S (b) F
   (c) S (d) F
   (e) V (f) F
   (g) S (h) S
   (i) F

6. water lily water
   cactus desert
   pine tree cold places
   date palm desert

Additional Activity

MCQs

(a) New plants grows from _____.

roots flowers seeds [seeds]

(b) Green plants need sunlight to make their _____.

food water air [food]

(c) A mushroom takes its food from _____.

living plants human beings dead plants [dead plants]

(d) Herbs are _____.

small plants with short stems

bushy plants with many leaves and branches

big plants with hard stems [small plants with short stems]

(e) Trees are _____.

big plants with hard stems

climbing plants

small plants with short stems [big plants with hard stems]

(f) A pondweed is a plant that grows in _____.

hot dry places water soil [water]

(g) Pine trees have _____.

broad leaves

thin needle-like leaves

flat leaves [thin needle-like leaves]

(h) Cactus is a _____.

water plant desert plant mountain plant [desert plant]

(i) Which of the following is not a fruit?

water melon rose mango [rose]

(j) A potato is a _____.

fruit seed vegetable [vegetable]

Lesson plan

Date: Time: 40 mins

Unit 3 **Topic: Plants**	**Teaching objectives**	**Learning outcomes** Students should be able to:	**Resources/Materials**	**Activities/CW/HW**
1. Plants	• to identify the different parts of a plant and explain the functions of each part	• identify the parts of a plant and describe the function of each part	A specimen of a plant with roots, stem, leaves, and flowers; pictures of different kinds of plants	Reading: p 17 CW: Q1 Q4 a.

Key words: root, stem, leaf, flower

Method: Show the students a fresh plant with roots, stems, leaves, and flowers. **Ask**: What is the function of the root? Explain that the part of the plant that is usually underground is called the root. The root supports the plant as well as absorbs water and mineral salts from the soil. It also stores food.

Ask: What is the function of the stem? Explain that the stem is the part of a plant that has leaves and buds. The function of the stem is to produce leaves and flowers, to distribute food and water to different parts of the plant, and to store food.

Ask: What is the function of the leaves? Explain that green leaves make food for plants. They give out oxygen gas and water vapour into the atmosphere.

Ask: What is the function of the flower? Explain that a flower is the coloured part of a plant. It makes seeds and fruits for the plant. **Ask**: How do new plants grow? Explain that a new plant grows from a seed.

Lesson plan

Date: Time: 40 mins

Unit 3 **Topic: Plants**	**Teaching objectives**	**Learning outcomes** Students should be able to:	**Resources/Materials**	**Activities/CW/HW**
2. Kinds of plants	• to describe the two kinds of plants: green plants that can make their own food and non-green plants that cannot make their own food	• explain that green plants can make their own food in the presence of sunlight; non-green plants cannot make their own food. They obtain their food from dead plants in the soil	Pictures of green plants, mushrooms	Reading p 17, 18 CW: Draw a green plant. Can it make its own food? What does a green plant need to make its food? Draw a non-green plant. Can it make its own food?

Key words: green, food, sunlight, dark

Method: **Ask**: How does a plant eat? Explain the process by which green plants can make their own food in sunlight.

Draw a mushroom on the chalkboard. **Ask**: What colour is a mushroom? Where do mushrooms grow? Explain that mushrooms are many different colours, but not green. Since a mushroom is not green and cannot make its own food, it grows in dark, shady places. It gets food from dead plants in the soil.

Lesson plan

Date: Time: 40 mins

Unit 3 **Topic: Plants**	**Teaching objectives**	**Learning outcomes** Students should be able to:	**Resources/Materials**	**Activities/CW/HW**
3. Creepers, herbs, shrubs, trees	• to explain how plants can be classified on the basis of the type of stem and structures that they have	• describe creepers as having weak stems, herbs as small plants, shrubs as bushy plants, and trees as tall plants with hard stems	Specimens of creepers and herbs, pictures of shrubs and trees	Reading: p 18, 19 CW: Q2 HW: Q3

Key words: creeper, herb, shrub, tree

Method: Show the students pictures of different kinds of plants. Ask them to arrange the pictures into groups of creepers, herbs, shrubs, and trees. Describe the structure of the plants. Explain the differences in the size and strength of the stems.

Take the students out on a walk to collect leaves. Ask the students to draw the outline of a leaf by tracing around its edges, and then draw in the veins. Explain that the line in the centre is called the midrib, and the smaller lines are called the veins. Veins help to transport food and water from one part of the leaf to another. Help the students to make a leaf print using a pencil and tracing paper.

Lesson plan

Date: Time: 40 mins

Unit 3 **Topic: Plants**	**Teaching objectives**	**Learning outcomes** Students should be able to:	**Resources/Materials**	**Activities/CW/HW**
4. Useful plants	• to explain how plants are very useful	• explain that we get flowers and different kinds of foods from plants • explain that plants make seeds which help to make new plants • explain that plants provide wood which can be used to make things	Pictures of fruits, vegetables, flowers, seeds, wooden objects	Reading: p 20 to 24 HW: Q5 Draw a flower, a fruit, a vegetable, a seed.
Key words: flower, vegetable, fruit, seed, wood **Method**: **Ask**: What do we get from plants? Explain the different ways in which plants are useful for us. They produce flowers, fruits, vegetables seeds, and wood for making furniture and other things. Wood is also used as a fuel.				

Lesson plan

Date: Time: 40 mins

Unit 3 **Topic: Plants**	**Teaching objectives**	**Learning outcomes** Students should be able to:	**Resources/Materials**	**Activities/CW/HW**
5. Where plants live	• to explain that plants live in different places	• explain that water plants are adapted to live in water; desert plants can live in hot, dry places; mountain plants have special features that enable them to live in very cold places	Pictures of water plants, cacti, pine trees, ferns, date palm	Reading: p 24, 25 CW: Q4 b. c. HW: Q6

Key words: water, desert, mountain, thorn, cone

Method: Show the students pictures of water plants. Discuss the features of water plants that enable them to live in water. Show the students pictures of desert plants. Explain that some desert plants have very deep roots and they have thorns to protect them. They also have thick fleshy leaves to store water.

Show the students pictures of ferns and pine trees. Explain that mountain plants have needle-like leaves so that snow does not remain on them. Also they do not have flowers. They produce cones which contain the seeds.

Name: _____ Date: _____

Match the description to the type of plant.

a plant that cannot make its own food

a small plant with a short stem

a bushy plant

a tall plant with a hard stem

Name: _____ Date: _____

Where would you find the following plants?

a water lily _____

a cactus _____

a pine tree _____

Write the names of five things that we get from plants.

f — — — — — —

f — — — — —

v — — — — — — — — —

s — — — —

w — — —

Matter

Teaching objectives:

To explain that everything on the Earth is made of matter
To explain that matter is of many shapes
To explain that matter is of many colours
To explain that matter feels different
To explain that matter changes
To explain that matter can be a solid, liquid, or gas
To discuss the properties of solids
To discuss the properties of liquids
To discuss the properties of gases
To discuss the difference between living and non-living matter

Teaching strategy:

Ask: Name some living and non-living things in your garden.
Explain that everything on the Earth is made up of living and non-living things.
All things on Earth are made of matter.

Show the students a globe.
Explain the area of land and water.

Draw some things of various shapes on the chalkboard.
Explain that matter is of many shapes and colours.

Ask students to feel some things.
Explain that matter can be smooth or rough, hard or soft, etc.

Place an ice cube in a saucer on your desk.
Show it to the students. After a while, light a candle and allow it to burn for some time.
Ask: What has happened to the ice cube?
What has happened to the candle?
Explain that matter changes.
Explain that non-living matter is not alive.

Show students some solid objects.
Press them, knock them on the table.
Explain that a solid is hard. A solid has a fixed shape.

Show students some liquids.
Touch the liquid. Put some water on a plate and slide it.

Pour some water from one beaker to another.
Explain that a liquid is not hard. It has no fixed shape and that it can flow.

Fill some air in a balloon.
Press the balloon. Release the air from the balloon.

Light a candle; blow it out. Show the direction of the smoke.
Explain that a gas is not hard. It has no fixed shape. A gas can move from one place to another.

Answers to Activities in Unit 4

1. (a) yes (b) no
   (c) no (d) no
   (e) yes (f) yes
   (g) yes (h) no

2.

Solid	Liquid	Gas
table	milk	air
stone	water	smoke
brick	mango juice	steam

Additional Activity

MCQs

(a) All things on Earth are made up of _____.
wood stones matter [matter]

(b) Which one of the following is a non-living thing?
A flower A stone A bird [A stone]

(c) A solid _____.
is hard and has a fixed shape
has no fixed shape and it can flow
is not hard and can move from place to place [is hard and has fixed shape]

(d) When ice is heated it melts to form a _____.
liquid gas solid [liquid]

(e) Sand is a _____.
solid liquid gas [solid]

(f) Milk is a _____.
solid liquid gas [liquid]

(g) When water is cooled it freezes to form _____.
ice ice-cream jelly [ice]

(h) Smoke is like a _____.
solid liquid gas [gas]

(i) When a liquid is heated it turns into a _____.
solid liquid gas [gas]

(j) _____ cannot change their shape easily.
Solids Liquids Gases [Solids]

Lesson plan

Date: Time: 40 mins

Unit 4 **Topic: Matter**	**Teaching objectives**	**Learning outcomes** Students should be able to:	**Resources/Materials**	**Activities/CW/HW**
1. Matter	• to explain the ways in which matter can be classified • to differentiate between the three states of matter	• explain that everything is made up of matter • explain how matter is classified • differentiate between the three states of matter by their properties	Samples of different materials such as a ball, a flower, an egg, a bottle, a candle, an ice cube, water, etc.	CW: Q2 1. Write the names of two solids, two liquids, and two gases that we use in our daily lives. 2. Name one substance that can be found as a solid, a liquid, or a gas.
Key words: matter, solid, liquid, gas **Method**: Show the students objects of different shapes and colours. Explain that matter is of many shapes and colours. Also explain that matter can be of various textures: it can be smooth, rough, hard, or soft.				

Lesson plan

Date: Time: 40 mins

Unit 4 **Topic: Matter**	**Teaching objectives**	**Learning outcomes** Students should be able to:	**Resources/Materials**	**Activities/CW/HW**
2. Forms of matter	• to explain that matter can change its form • to explain the properties of a solid, a liquid, a gas	• explain that matter can change its form • describe the properties of the three forms of matter	An ice cube, a candle, a balloon, a matchbox, a burner, a beaker, water	CW: Q1

Key words: melt, water vapour, flow

Method: Place an ice cube in a saucer.

Ask: What will happen to this ice cube after a few minutes? Light a candle and allow it to burn for a while. **Ask**: What do you see? Explain that matter can change its state. Show the students some solid objects. Press them, knock them on the table. Explain that a solid is hard and it has a fixed shape.

Pour some water on a plate and move the water around on the plate. Pour water from a bottle into a beaker. Explain that liquids can flow and that they take the shape of the container. Explain that a liquid is not hard, it has no fixed shape and it can flow. Fill a balloon with air and press it. Now release air from it. Light a candle and blow it out. Observe the direction of the smoke. Explain that a gas is not hard. It has no fixed shape or size and can flow.

Name: _____ Date: _____

Write S for solid, L for liquid, G for gas.

stone	book	feather
_____	_____	_____
milk	steam	smoke
_____	_____	_____
ink	water	air balloon
_____	_____	_____

orange juice

_____

Name: _____ Date: _____

What is it? Choose the correct word and fill in the blank.

It is hard. It does not change its shape.

It is a _____. (solid, liquid, gas)

It is not hard. It can change its shape.

It can flow. It is a _____. (solid, liquid, gas)

It is not hard. It can move from place to place.

It is a _____. (solid, liquid, gas)

Heat and light

Teaching objectives:

To explain that light helps us to see things
To explain that the Sun gives heat and light to the Earth
To explain that burning things give out heat and light
To discuss the importance of heat
To explain that sunlight is made up of seven colours
To explain that light can pass through transparent objects
To explain that light cannot pass through opaque objects

Teaching strategy:

Ask: Can we see in the dark? What helps us to see?
Explain that light helps us to see.

Ask: Where does light on Earth come from?
Explain the importance of sunlight.
Explain that the Sun provides heat.
Ask: What are the other sources of light?

Ask: When do you see a rainbow?
Draw a rainbow on the chalkboard. Write the names of the seven colours.

Show the students some transparent objects.
Explain that we can see through transparent objects because light can pass through them.

Show the students some opaque objects.
Explain that we cannot see through opaque objects because light cannot pass through them.

Make a colour wheel. Cut a round disc from a card paper. Divide it into seven parts. Colour the parts in the colours of the rainbow. Push a pin through the centre and spin it like a top. The disc will look white.

Answers to Activities in Unit 5

1. (a) no (b) no
   (c) yes (d) yes
   (e) no (f) yes
   (g) yes

2. (a) violet (b) indigo
   (c) blue (d) green
   (e) yellow (f) orange
   (g) red

3. (a) air (a) wood
   (b) water (b) cardboard
   (c) glass (c) rubber

4. (a) candle (b) fire

5. (a) Sun (b) bulb

Additional Activity

MCQs

(a) The Sun gives us _____.

heat and sound heat and light water and light [heat and light]

(b) We can see seven colours of light in a _____.

rainbow glass light bulb [rainbow]

(c) Sunlight is made up of _____ colours.

5 6 7 [7]

(d) Light cannot pass through _____.

water glass wood [wood]

(e) To keep us warm in winter we need _____.

light heat sound [heat]

(f) Light can pass through _____.

air wood cardboard [air]

(g) _____ helps us to see things in the dark.

Sound Heat Light [Light]

(h) Which one of the following gives off light only?

A torch A fire The Sun [A torch]

(i) We do not need heat _____.

to keep warm to cook our food to see things in the dark

[to see things in the dark]

(j) Which one of the following does not give off heat?

A candle A fire A torch [A torch]

Lesson plan

Date: Time: 40 mins

Unit 5 **Topic: Heat and light**	**Teaching objectives**	**Learning outcomes** Students should be able to:	**Resources/Materials**	**Activities/CW/HW**
1. Heat and light	• to identify the various sources of heat and light • to explain the importance of heat and light in our daily lives • to explain the characteristics of heat and light	• identify things which give out light, heat, and both light and heat • explain the importance of heat and light in our daily lives • describe the characteristics of heat and light	A picture of the Sun, a candle, an electric bulb, an electric heater, a torch	Ask the students to collect pictures of sources of heat and light and paste them on a chart. CW: Q4, Q5

Key words: heat, light

Method: **Ask**: Can we see in the dark? Explain that light helps us to see things. Light the candle and let the students feel the heat. Can they name some other sources of heat and light? Why is heat important for us? Explain that we need heat to warm ourselves in winter and also to cook our food. Plants that provide our food need heat and light in order to grow. Show the students the picture of the Sun and discuss the importance of heat and light in our daily lives.

Lesson plan

Date: Time: 40 mins

Unit 5 **Topic: Heat and light**	**Teaching objectives**	**Learning outcomes** Students should be able to:	**Resources/Materials**	**Activities/CW/HW**
2. Light	• to explain that sunlight is made up of seven colours	• explain that light is made up of seven colours	a glass prism	CW: Q1, Q2 Make a rainbow with coloured strips of paper and write the names of the colours next to each.

Key words: rainbow, VIBGYOR

Method: Place a glass prism on a white sheet of paper on a window sill where sunlight is coming through. A small rainbow will be formed on the sheet of paper. **Ask**: What do we call this band of colours? How many colours can you count? Explain that sunlight is made up of seven colours which we can see by the formation of the rainbow. Ask the students to draw the rainbow and write the names of the colours alongside it. Write VIBGYOR next to the colours of the rainbow and explain that each letter is the beginning letter of the colour.

Lesson plan

Date: Time: 40 mins

Unit 5 **Topic: Heat and light**	**Teaching objectives**	**Learning outcomes** Students should be able to:	**Resources/Materials**	**Activities/CW/HW**
3. Properties of light	• to explain the properties of light • to introduce the terms transparent and opaque	• identify objects through which light can and cannot pass	A glass bowl, water, a wooden block, cardboard	CW: Q3
Key words: transparent, opaque **Method**: Shine a torch through an empty glass bowl. **Ask**: Can you see the light from the other side? Explain that light can pass through some materials such as glass. These materials are called transparent. Shine the torch on a wooden chalkboard. **Ask**: Can you see the light from the other side? Explain that light cannot pass through some materials; these materials are called opaque.				

Name: _____ Date: _____

1. Draw three things which give out heat and light.

2. Draw a circle around the materials through which light can pass.

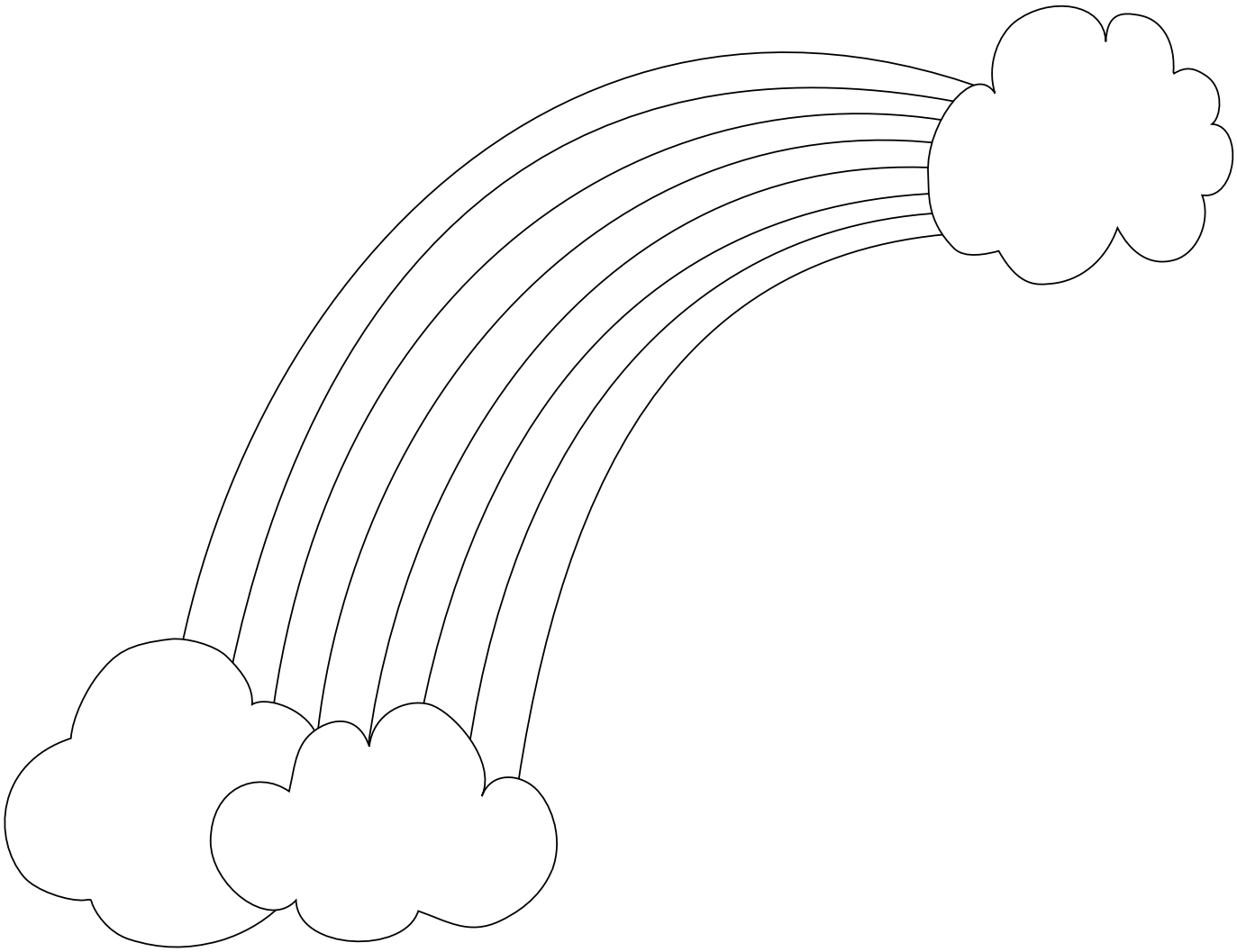
wood air rubber

glass cardboard

water

Name: _____ Date: _____

Colour the rainbow.



What is the colour at the top? _____

What is the colour in the middle? _____

What is the colour at the bottom? _____

Air

Teaching objectives:

To explain that air is everywhere
To explain that air affects weather
To explain that all living things need air
To explain that things fly in air
To explain that air is filled in balloons and tyres
To explain that air helps things to burn
To explain that wind helps things to move
To explain that a strong wind is called a storm

Teaching strategy:

Ask students to fan themselves with a piece of paper.
Ask: What do you feel? Can you see anything?

Fill a balloon with air.
Ask: Can you see anything inside?
Release air from the balloon.
Ask: What is coming out?

Squeeze a sponge in a bowl of water.
Ask: What do you see coming out?

Explain that air is all around us.
Explain that we can feel air but we cannot see it.
Ask: Is it hot or cold today?
Explain that hot and cold air affects the weather.

Put some ice cubes in a glass tumbler. Show students the drops of water that have condensed outside.
Ask: Where has this water come from?
Explain the presence of water vapours in the air and the formation of clouds and rain.

Ask: What do we breathe in? Why do we breathe? Do plants breathe?
Explain the importance of air for respiration.

Ask: Where do insects, birds, and aeroplanes fly?
What do we fill in the balloons and tyres?
Explain the uses of air.

Light a candle on the table. Invert a glass tumbler over it.
Ask: Why did the candle go out?
Explain that air helps things to burn.

Ask: What is wind? What is a storm?
Explain how wind helps things to move.

Teach students to make a paper windmill.
Take a square piece of glazed paper.
Cut along the dotted lines. Fold every alternate corner towards the centre and poke a pin through them. Push the pin through a thin stick. Blow through the flaps of the windmill. It will start turning round.

Answers to Activities in Unit 6

1. (a) yes (b) yes
   (c) no (d) no
   (e) yes

2. (a) need air (b) fly in air
   (c) balloons and tyres (d) to burn
   (e) wind (f) a storm

Additional Activity

MCQs

(a) _____ is all around us.

Water	Air	Sand	[Air]

(b) Air is made up of _____.

water	gases	solids	[gases]

(c) When the air is warm we _____.

feel cold	feel hot	shiver	[feel hot]

(d) All living things need _____ and water to live.

rainbows	moon	air	[air]

(e) A strong wind is called _____.

wind	a storm	breeze	[a storm]

(f) A fish breathes air from _____.

water	air	land	[water]

(g) Drops of water in the air make _____.

ice	clouds	wind	[clouds]

(h) All living things need air to _____.

swim	move	breathe	[breathe]

(i) We can feel air when it is _____.

flowing	moving	raining	[moving]

(j) We fill _____ in balloons and tyres.

water	air	petrol	[air]

Lesson plan

Date: Time: 40 mins

Unit 6 **Topic: Air**	**Teaching objectives**	**Learning outcomes** Students should be able to:	**Resources/Materials**	**Activities/CW/HW**
1. Air	• to explain that air is present all around us • to explain the importance of air to life on Earth	• explain that air is all around us • describe the ways in which air is important for life on Earth	A paper fan, a balloon	CW: Q1 Q. How do we know that air is around us? Q. What is air made up of?

Key words: air, gas

Method: Demonstrate how to make a paper fan by folding a piece of paper; ask the students to fan themselves. **Ask**: What do you feel? Can you see the moving air?

Fill a transparent balloon with air. **Ask**: Can you see anything inside. Release the air from the balloon. **Ask**: Can you see anything coming out? Can you feel anything coming out? Explain the properties of air.

Lesson plan

Date: Time: 40 mins

Unit 6 **Topic: Air**	**Teaching objectives**	**Learning outcomes** Students should be able to	**Resources/Materials**	**Activities/CW/HW**
2. Properties of air	• to explain the properties and uses of air	• describe the properties of air • explain how air is used in things around us	A candle, a glass tumbler, ice cubes, an air pump	Q. Which gas do we breathe? Which gas do plants need for making their food? Q. How are clouds formed? Q. Draw the water cycle.

Key words: oxygen, carbon dioxide, burning, breathing, water vapour

Method: **Ask**: What do we breathe in? Do plants breathe? Explain that air is a mixture of many gases and that animals and plants need oxygen to breathe. Pl ants use carbon dioxide gas to make their food.

Where do insects, birds, and aeroplanes fly? What do we fill tyres and balloons with?

Put some ice cubes in a glass tumbler. Show the students the water droplets that form on the outside of the glass. **Ask**: Where did this water come from? Explain that there is water in the air but we cannot see it. **Ask**: How are clouds formed? What is rain? Discuss the water cycle and explain the formation of clouds and rain.

Invert a glass tumbler over a lighted candle. **Ask**: What happened? Can you explain why? Explain that without air, nothing will burn.

Lesson plan

Date: Time: 40 mins

Unit 6 **Topic: Air**	**Teaching objectives**	**Learning outcomes** Students should be able to:	**Resources/Materials**	**Activities/CW/HW**
3. Moving air	• to describe a storm • to explain the causes and effects of storms	• explain what a storm is	Pictures of a storm	Collect pictures of a storm and the damage that it caused. HW: Q2, Q3
Key words: wind, storm **Method**: Place some small pieces of paper on the table and blow hard on them. **Ask**: Why do the pieces of paper fly about? Explain how winds are caused, the effects of winds, and how storms occur.				

Name: _____ Date: _____

Draw four things that need air.

Name: _____ Date: _____

Choose words from the list below to fill in the blanks:

Air is all _____ us.

Air is made up of many _____.

We cannot _____ air but we can feel it.

Drops of water in the air make _____.

Things cannot burn without _____.

gases	clouds	around	air	see

The Sun and the stars

Teaching objectives:

To explain that we can see the Sun in the daytime
To explain that the Sun is very far from the Earth
To explain that the Sun is a big ball of hot, burning gases
To explain that the Sun gives heat and light to the Earth
To discuss what a planet is
To discuss the solar system
To discuss that stars are big balls of burning gases
To discuss that the Sun is a star

Teaching strategy:

Draw the Sun on the chalkboard.
Explain that the Sun gives off heat and light.
Ask: When can we see the Sun?
Explain that the Earth gets heat and light from the Sun.

Draw the solar system.
Explain that a body which goes round the Sun is called a planet.
Explain about the planets of the solar system.
Explain that the planets near the Sun are very hot.
The planets that are far away from the Sun are very cold.

Draw a picture of the night sky.
Ask: When do we see stars? What is a star?
Explain that stars are big balls of burning gases.
Ask: Why do stars seem small?
Explain that stars are very far away.
Explain that the Sun is a star.

Ask: Why can we feel the heat and see the light of the Sun?
Explain that the Sun is the nearest star to the Earth.

Ask students to draw the sky in the daytime and at night.
Tell students to draw the solar system and write the names of the planets.

Answers to Activities in Unit 7

1. (a) Sun (b) far
   (c) gases (d) light
   (e) stars

2. (a) no (b) no
   (c) yes (d) no
   (e) yes

Lesson plan

Date: Time: 40 mins

Unit 7 **Topic: The Sun and the stars**	**Teaching objectives**	**Learning outcomes** Students should be able to:	**Resources/Materials**	**Activities/CW/HW**
1. The Sun	• to explain that the Sun is a big ball of hot, burning gases • to explain that the Sun can be seen during the daytime • to understand that Earth gets heat and light from the Sun	• describe the properties of the Sun	Pictures of the Sun, a globe, a torch	CW: Q1 Draw the Sun and the Earth and mark the parts of the Earth that have day and night at a given time. HW: Ask the students to draw a picture of the daytime sky
Key words: Sun, daytime, hot gases, light **Method**: Show the students a picture of the Sun. Explain that the Sun gives heat and light to the Earth. Shine a torch on the globe and explain how the Earth gets heat and light from the Sun. Spin the globe slowly and explain that the part of the Earth that faces the Sun has day and the part that is away from the Sun has night.				

Lesson plan

Date: Time: 40 mins

Unit 7 **Topic: The Sun and the stars**	**Teaching objectives**	**Learning outcomes** Students should be able to:	**Resources/Materials**	**Activities/CW/HW**
2. Stars	• to explain that all stars are big balls of burning gases like the Sun	• describe the Sun • explain that the Sun is the main source of energy for the Earth • explain that the stars are big balls of hot burning gases and that the Sun is also a star	Pictures of the sky at night	CW: Q2 HW: Q3
Key words: star, burning **Method**: **Ask**: When can we see stars in the sky? Explain that stars are big balls of burning gases but we cannot feel their heat because they are very far away. If possible take the students to a planetarium.				

Name: _____ Date: _____

Draw the Sun.

Draw a morning scene.

Name: _____ Date: _____

Circle the correct word(s):

The Sun is a big ball of hot water / gases.

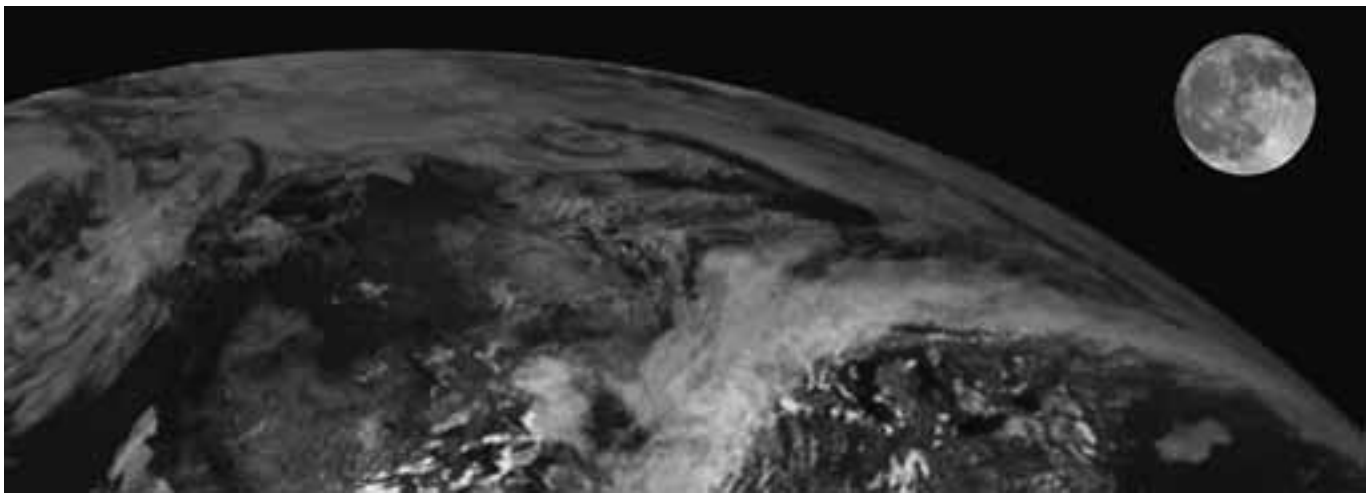
The Earth gets heat and light from the Sun / Moon.

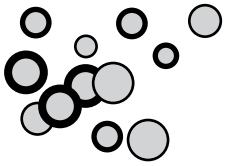
We can see stars in the sky in the daytime / at night.

The Sun is very far from / near the Earth.

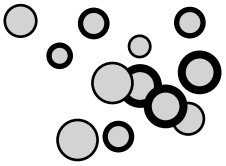
The stars are very far from / near the Earth.

The Sun is a moon / star.





UNIT 8



The Moon

Teaching objectives:

To discuss what the Moon is
To explain that the Moon is close to the Earth
To explain that the Moon does not have its own light
To explain that the Moon shines because of sunlight
To explain that the Moon moves round the Earth once in 28 days
To explain that the changing shapes of the Moon are due to its going round the Earth
To discuss that there is no life on the Moon
To discuss that there is no air on the Moon
To discuss that things on the Moon have no weight

Teaching strategy:

Draw the night-time sky with the Moon and stars.
Ask: When do we see the Moon?
Explain that the Moon is close to the Earth.

Ask: Does moonlight feel hot?
Explain that the Moon does not have its own light. It shines because of sunlight falling on it.

Ask: What is the shape of the new Moon?
When do we see the full Moon?
Explain that the Moon moves round the Earth in 28 days and as the Moon moves we can see the shapes of the Moon.
Draw the shapes of the Moon on the chalkboard.

Ask: Does anyone live on the Moon?
Explain that astronauts have been on the Moon. They know that nothing can live on the Moon because there is no air.

Ask: Have you seen pictures of astronauts on the Moon?
Ask: What do they seem to be doing?
Show students pictures of astronauts. Explain that they have to wear special suits because there is no air or gravity on the Moon. Everything seems to be flying on the Moon.

Answers to Activities in Unit 8

1. (a) yes (b) no
   (c) no (d) no
   (e) yes (f) yes

3. (a) water (b) living
   (c) Sun (d) Earth
   (e) night

Additional Activity

MCQs

(a) The Sun is a big ball of _____.

rubber air hot gases [hot gases]

(b) We can see the Sun _____.

at night in the daytime on a cloudy day [in the day time]

(c) We can see stars in the sky _____.

at night in the day time in the afternoon [at night]

(d) The Sun is _____.

a moon a star a planet [a star]

(e) The Moon is _____ the Earth.

bigger than smaller than equal in size to [smaller than]

(f) The Moon _____ light of its own.

has does not have sometimes has [does not have]

(g) We can see the Moon when the _____ throws light on it.

Earth Sun star [Sun]

(h) We can see the shapes of the Moon at different times of the _____.

day night month [month]

(i) How far is the Moon from the Earth?

Very far away Very close At the same distance as the Sun. [Very close]

(j) The Earth gets heat and light from the _____.

Moon stars Sun [Sun]

Lesson plan

Date: Time: 40 mins

Unit 8 **Topic: The Moon**	**Teaching objectives**	**Learning outcomes** Students should be able to:	**Resources/Materials**	**Activities/CW/HW**
1. The Moon	• to explain that the Moon has no light of its own; it reflects the light of the Sun • to describe the characteristics of the Moon • to explain that the Moon goes round the Sun once every twenty-eight days, and that is why we see the changing shapes of the Moon	• explain that the Moon has no light of its own and that it reflects sunlight. • describe the surface of the Moon	Pictures of the surface of the Moon Pictures of the phases of the Moon	Collect pictures of the Moon. CW: Q1, Q2 HW: Write five lines about the Moon.

Key words: Moon, crater, surface

Method: Show the students pictures of the night sky.

Ask: Does moonlight feel hot? Explain that the Moon does not have its own light. It appears to shine because it reflects the sunlight that falls on its surface.

Ask: What shape is the Moon? When do we see the Full Moon? Explain that the Moon goes round the Earth once every twenty-eight days, and as the Moon moves, we see the different shapes of the Moon. Draw the path of the Moon around the Earth.

Lesson plan

Date: Time: 40 mins

Unit 8 **Topic: The Moon**	**Teaching objectives**	**Learning outcomes** Students should be able to:	**Resources/Materials**	**Activities/CW/HW**
2. The Moon	• to explain that there is no air on the Moon and so there is no life • to explain that objects on the Moon have no weight	• relate some facts about the Moon and space travel	Pictures of astronauts and spaceships	Collect pictures of spaceships and astronauts, and paste them on a chart. CW: Q3
Key words: astronaut, spaceship, gravity **Method**: **Ask**: Does anyone live on the Moon? Explain that astronauts have landed on the Moon. We know that nothing can live on the Moon because there is no air. Show the students pictures of astronauts. Explain that they have to wear special suits because there is no air and very little gravity on the Moon. Gravity is what pulls objects down. Things float in space because there is no gravity.				

Name: _____ Date: _____

Write the names of the different shapes of the Moon.

_____

_____

_____

Name: _____ Date: _____

Circle the correct word.

The Moon is closer to the Earth / Sun.

The Moon has / does not have light of its own.

The light of the Earth / Sun shines on the Moon.

The Moon has / does not have air or water.

The holes on the surface of the Moon are called wells / craters.

The Earth

Teaching objectives:

To explain that the Earth is a planet
To explain that the Earth gets heat and light from the Sun
To discuss that the Earth has land, air, and water
To explain that land is made up of rocks
To explain that rocks, sand, and clay make up soil
To explain that living things live in the soil
To explain that 3/4 part of the Earth is covered with water
To discuss that plants and animals live in the water
To discuss that ships and boats sail in water
To discuss that we swim in water and we drink water
To explain that air surrounds the Earth
To explain that we cannot see air but we can feel it
To explain that living things need air for breathing
To discuss that birds, insects, and aeroplanes fly in air
To discuss how day and night are formed
To explain that the Earth turns round once every day
To explain that the Sun rises in the east and sets in the west
To explain that at midday the Sun is over our heads
To discuss different types of weathers

Teaching strategy:

Show the students a globe. Explain that the Earth is round.
Show the continents and oceans.
Explain that 3/4 part of the Earth is covered with water.
Ask: What is land made up of?
Explain the types of rocks and the formation of soil.

Ask: Where do earthworms live? Where do plant roots grow?
Explain that living things live in the soil.

Ask: What do we use water for?
Explain the uses of water.

Ask: What do we breathe in? What do living things need?
Explain that we cannot see air, but we can feel it.
Explain the uses of air.

Ask: When do you wake up? When do birds and animals wake up?
How do we know it is morning?
Explain the formation of day and night with the help of a globe and a lamp representing the Earth and Sun respectively.
Show that the Earth turns on its axis once in 24 hours.
Explain that it is not the Sun rising or setting but that it appears to be so because the Earth is turning.

Explain that at 12 noon the Sun is over our heads and our shadow is beneath our feet.
Demonstrate formation of shadows in the morning, midday, and evening by holding a lamp at various positions.

Explain the characteristics of different types of weather.
Ask: What happens when it rains?
When is it windy?
When does it snow? When is it hot?

Answers to Activities in Unit 9

1. (a) big (b) Sun
   (c) planet (d) Sun
   (e) top
3. (a) morning (b) evening
   (c) midday (d) East
   (e) West

Additional Activity

MCQs

(a) The Earth is like a big _____.

ball ship plate [ball]

(b) The Earth is a _____.

star planet moon [planet]

(c) The Earth gets heat and light from the _____.

Moon stars Sun [Sun]

(d) The Earth goes round the _____ in an oval path.

Moon stars Sun [Sun]

(e) The Sun rises in the _____.

North South East West

[East]

(f) The Sun sets in the _____.

North South East West

[West]

(g) As the Earth spins like a top the side that faces the Sun has _____.

day night evening [day]

(h) The Sun is a _____.

star moon planet [star]

(i) At midday the Sun is _____.

on our left over our heads in front of us [over our heads]

(j) The Earth has _____.

land, water, and air only land and water only land and air [land, water, and air]

Lesson plan

Date: Time: 40 mins

Unit 9 **Topic: The Earth**	**Teaching objectives**	**Learning outcomes** Students should be able to:	**Resources/Materials**	**Activities/CW/HW**
1. The Earth	• to explain that the Earth is a planet • to explain that the Earth gets heat and light from the Sun	• identify Earth as a planet	A globe, a torch, pictures of Earth taken from space	CW: Q1 (a) (b) (c) (d)
Key words: Earth, land, air, water, planet **Method**: Show the students a globe. Explain that the Earth is round like a ball. Explain that a planet goes round the Sun. Earth is one of the planets that orbit the Sun.				

Lesson plan

Date: Time: 40 mins

Unit 9 **Topic: The Earth**	**Teaching objectives**	**Learning outcomes** Students should be able to:	**Resources/Materials**	**Activities/CW/HW**
2. Characteristics of the Earth	• to explain that the Earth has air, water, and land • to explain that there are living things on Earth	• explain the conditions on Earth that make it possible to support life	A torch, a ball, chart paper, coloured pencils	Draw a very large Earth on a chart paper for each group of 4-5 students. Ask them to draw living things on it to show that all living things that live on Earth need land, water, and air.
Key words: land, water, air **Method**: **Ask**: Is the Earth hot like the Sun? Does it have its own light? Where does the Earth get heat and light from? Explain that the Sun gives heat and light to the Earth. Show this by shining a lighted torch onto a ball. Let the students feel the heat from the torch. Explain that this is a model of how the Earth gets heat and light from the Sun. Switch off the torch and explain that the Earth would be dark and cold without the Sun. Explain that all living things, plants as well as animals, need land, air, and water to live. We live on land and get our food from plants and animals that live on land.				

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Date: Time: 40 mins

Unit 9 **Topic: The Earth**	**Teaching objectives**	**Learning outcomes** Students should be able to:	**Resources/Materials**	**Activities/CW/HW**
3. Movements of the Earth	• to explain that the Earth spins on its axis, and this causes day and night • to teach the cardinal directions	• describe how the rotation of the Earth on its axis causes day and night • find the cardinal directions from the position of the Sun	A globe, a torch	CW: Q1 (e) Q2 HW: Q3

Key words: axis, day, night, oval path, direction, north, south, east, west, dawn, rise, set, weathervane

Method: **Ask**: Does the Earth remain still? Explain the movements of the Earth on its axis and around the Sun. Explain, using the globe and torch, what causes day and night.

Ask the students to stand facing the rising Sun and spread their arms. Explain the four directions with the help of a diagram on the chalkboard as given in the textbook. Also explain that it is not the Sun that is moving but that it is the movement of the Earth which makes it appear that the Sun is rising and setting.

Name: _____ Date: _____

Draw the path of the Earth around the Sun.

Name: _____ Date: _____

Mark the directions.

Assessment

1. Draw.

(a) an apple	(b) a leaf

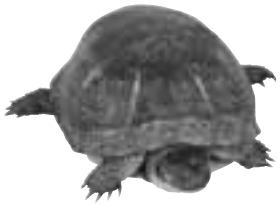
2. Label the pictures.

stone	tortoise	leaf	jelly	rabbit

(a) _____

(b) _____

(c) _____



(d) _____

(e) _____

3. Give one example of each.

   (a) water animal: _____.

   (b) bird: _____.

   (c) insect: _____.

4. Tick the correct answer.

   (a) A mouse is a big/small animal.

   (b) A ladybird is an insect/bird.

   (c) A camel pulls a cart/carries heavy loads.

   (d) Wild animals live in the forest/water.

5. Which of the following make their own food? Circle them.

6. Mark each sentence with a ✓ or ✗.

   (a) A mushroom grows in light.

   (b) Herbs are small plants having short stems.

   (c) A date palm is a water plant.

   (d) Plants give us flowers, vegetables, and fruits.

7. In the pictures below, mark the solid, liquid, and gas.

(a) _____ (b) _____ (c) _____

8. Give three examples each of solids, liquids, and gases.

	Solids	**Liquids**	**Gases**
(a)	_____	_____	_____
(b)	_____	_____	_____
(c)	_____	_____	_____

9. Name three sources of heat and light.

(a) _____

(b) _____

(c) _____

10. Which of these colours are present in the rainbow? Circle them.

pink	yellow
red	brown
blue	green

11. Fill in the blanks.

(a) We fill _____ in balloons and tyres.

(b) Drops of water in the air make _____.

(c) A strong wind is called a _____.

12. Form correct sentences by matching A and B.

A	B
(a) We can see stars	in the daytime
(b) We can see the Sun	bright light
(c) The Earth gets heat and light	at night
(d) The Sun gives off	from the Sun

13. What are these shapes of the Moon called?

(a) _____ (b) _____ (c) _____

14. Write five sentences about the Moon.

(a) _____

(b) _____

(c) _____

(d) _____

(e) _____

15. Which of the following sentences are correct?
Put a ✓ or ✗.

(a) The Earth gets light and heat from the stars.

(b) The Sun goes round the Earth.

(c) The Earth is like a big ball.

(d) We see the Sun setting in the morning.