

Fourth Edition

OXFORD
SCHOOL EDUCATION

NEW INTEGRATED PRIMARY SCIENCE

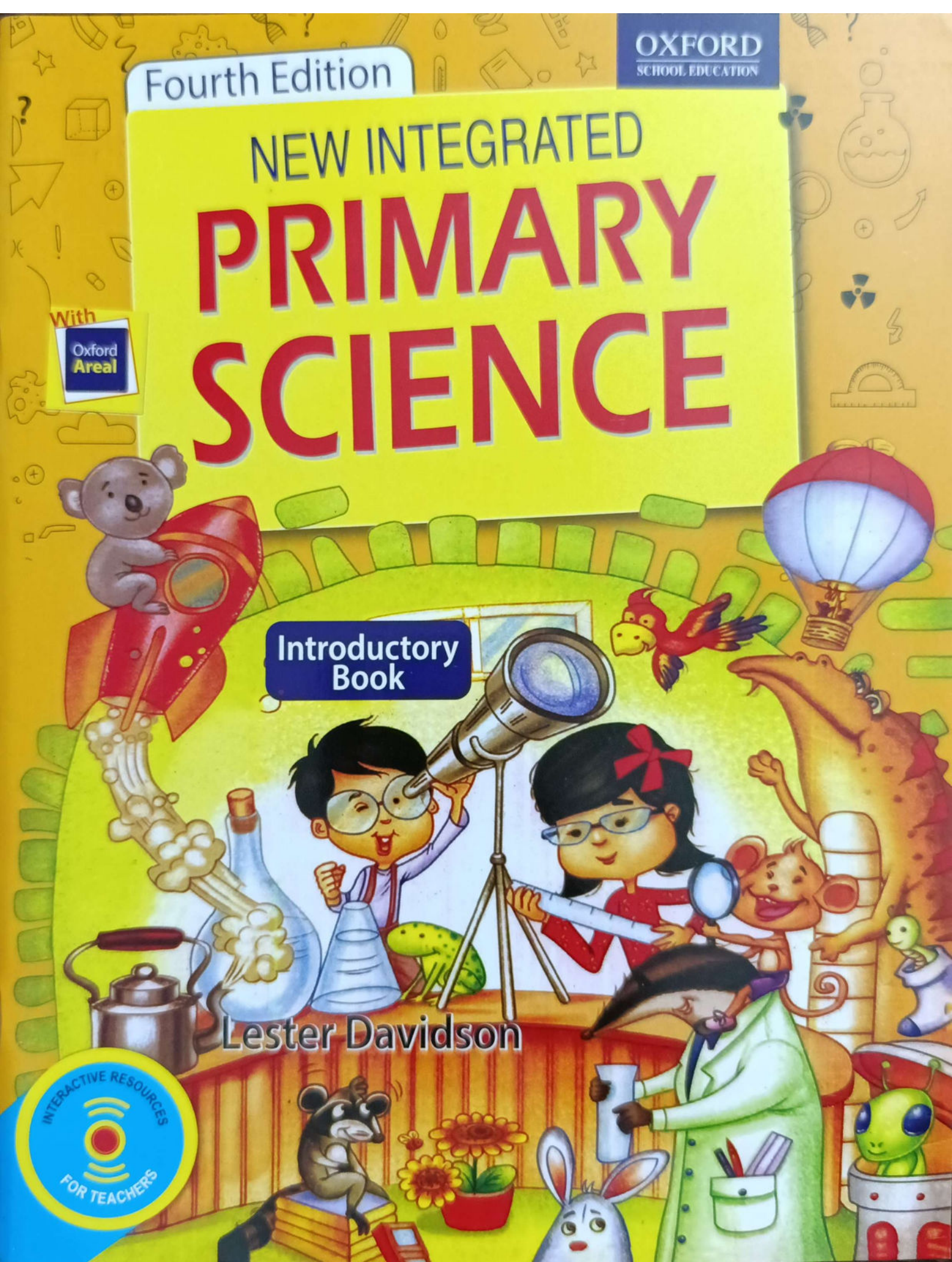
With

Oxford
Areal

Introductory
Book

Lester Davidson

INTERACTIVE RESOURCES
FOR TEACHERS



Contents

PART 1. Ourselves

1. How many?	5
2. Senses	7
3. We are different	8
4. Keeping clean	10

PART 2. Animals

5. Animal groups	11
6. Animal babies	14
7. Animal parts	16

PART 3. Plants

8. Plants	17
9. Flowers and leaves	18

PART 4. Living Things

10. Living and non-living	19
11. Food	20
12. Growing	21

PART 5. Sizes and Shapes

13. Big and small	22
14. Long and short	23
15. Heavy and light	24
16. Shapes	25
17. Groups	26
18. Measuring	28

PART 6. Materials and Matter

19. Materials	29
20. Textures	30
21. Hot and cold	31

PART 7. Our Planet

22. The Earth	33
23. The sky	34
24. The sky at night	35
25. Sunrise and sunset	36

PART 8. Water and Air

26. Water	37
27. Using water	38
28. The air	39
29. The weather	40
30. Wind and water power	41

PART 9. Movement

31. Wheels	42
32. Movement - 1	43
33. Movement - 2	45
34. Things that fly	46

PART 10. Electricity, Light, and Sound

35. Electricity	47
36. Light	48
37. Shadows	49
38. Colours	50
39. Sound	51
40. Music	53

Fun Page	54
----------	----

How Many?

My body



How many do you have?



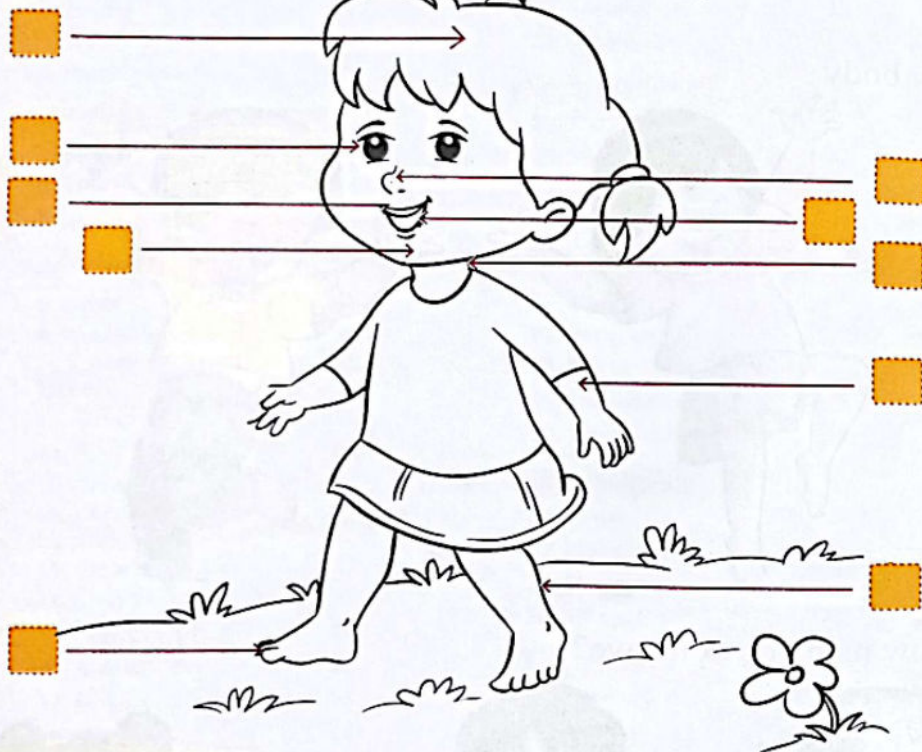
5



What are these?

How many do you have?

Write the number in the boxes.



Colour the picture.

For the Teacher

- ✓ Discuss in the class the colour, shape, and uses of the various parts of the body.
- ✓ Ask questions: How many (fingers, ears, etc.) do you have? Can you count them?

Pupil Activity

- ✓ Draw pictures of the hand, eyes, or any other body part.
- ✓ Feel your heartbeat and pulse.
- ✓ Feel and describe bones, muscles, skin, and hair.

6



Senses

What are they for?



Match the following.



For the Teacher

- ✓ Discuss the use of organs and the things we can sense. You can involve the children by asking them about their ideas on how organs work, then explain them.
- ✓ Discuss the matching exercise in an interesting way.

Pupil Activity

- ✓ Draw or list things sensed by each organ.
- ✓ Smell substances, feel objects, and try to listen to sounds with eyes shut.

7



We Are Different



Look at the people.

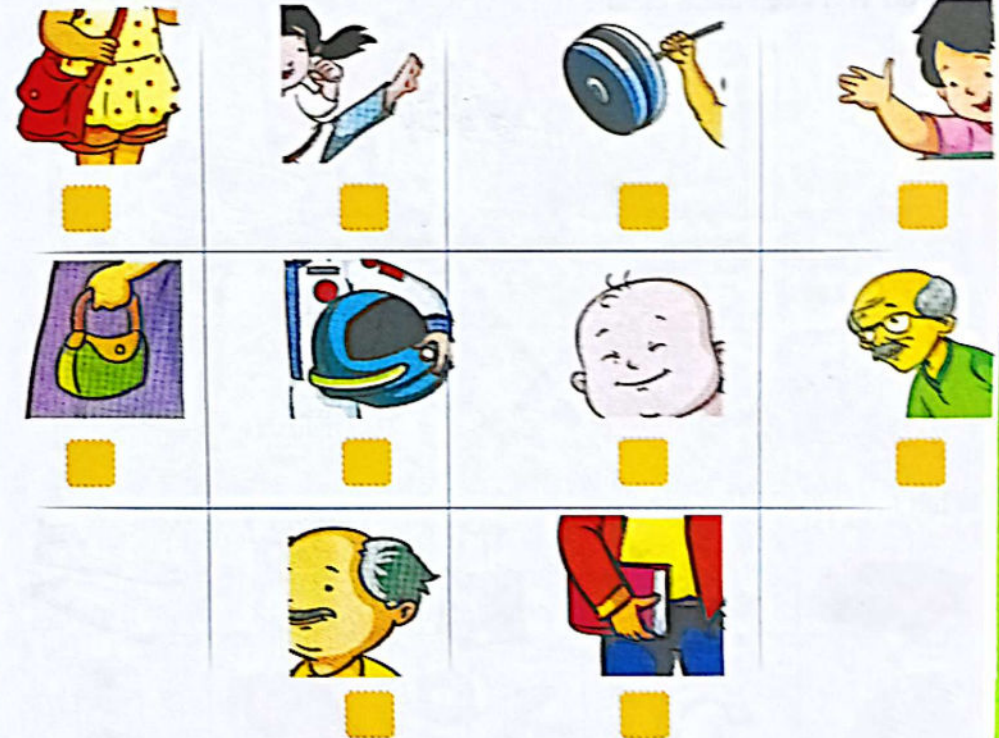


8

What are these?

To whom do they belong?

Write the numbers in the boxes.



For the Teacher

- ✓ Discuss people and features: old and young.
- ✓ Point out similarities (part and numbers) and differences (height, weight, size, hair/eye colour, and type) and other features (ageing, wrinkles, facial hair, etc.)

Pupil Activity

- ✓ Trace the pictures on page 8. Cut them out. Paste them onto a chart paper to make cards. Cut them up and mix them to make new figures.
- ✓ Trace around the hands and compare sizes with your friends.

9

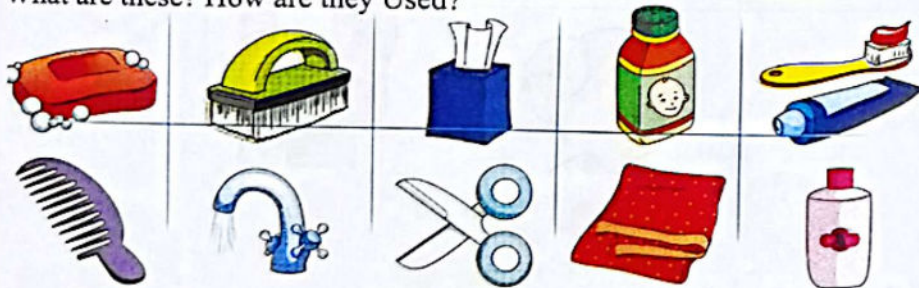
4

Keeping Clean

How do You keep them clean?



What are these? How are they Used?



For the Teacher

- ✓ Get pupils to describe the objects and their uses. How do they help to keep the body clean?
- ✓ Emphasize the need to keep clean for reasons of health and hygiene.
- ✓ Also discuss environmental cleanliness.

Pupil Activity

- ✓ Draw some of the things you use to keep yourself clean

10

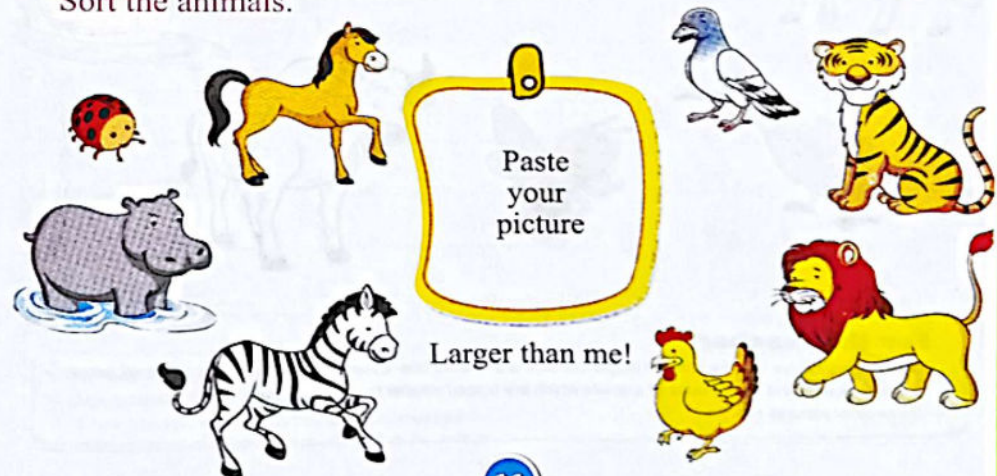
5

Animal Groups

Some animals are big
Some are small.



Sort the animals.



Larger than me!

11



Flowers and Leaves



pansy



jasmine



Poppy



rose

Count the petals.



hibiscus



lotus



sunflower

Colour the leaves.



Collect some leaves and flowers.

Bring them to class.

For the Teacher

- ✓ Make a large chart to show parts of a flower and a leaf.
- ✓ Discuss colour, size, fragrance, and functions.

Pupil Activity

- ✓ Bring flowers and leaves to class, count petals, trace shapes, make rubbings.
- ✓ Press flowers and paste them in an album.



Living and Non-Living

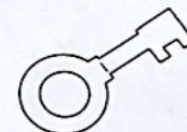
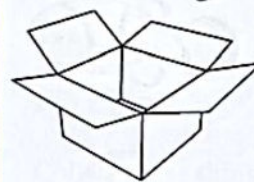


Some things are alive.

Some are not.

Living things feed and grow.

Which of these things are living?



Colour the pictures. Use these colours.

LIVING

NON-LIVING

I DON'T KNOW

For the Teacher

- ✓ Allow pupils to work on their own and then discuss answers.
- ✓ All living things breathe, grow, feed, and move.
- ✓ Explain that living things age and then die.

Pupil Activity

- ✓ Sort pictures into groups of living and non-living.



13

Big and Small



Look at that big dog!

Woof!

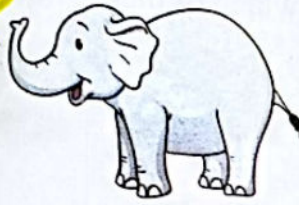
Look at that small dog!



mouse



dog



elephant

What do you think?

Write B for Big or S for Small in the boxes.



For the Teacher

- ✓ Talk about relative sizes (leading to standard measurements later on).
- ✓ Name big things and small things.

Pupil Activity

- ✓ Can you pair the items Shown? Make a collection of pictures; Sort these into categories Big and Small

22

14

Long and Short



short A



shortest

longer B



shorter

longest C



long

Which snake is the longest?

Which snake is the shortest?

Which is shorter, A or B?

Colour the pencils.

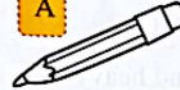
Long pencils



Short pencils



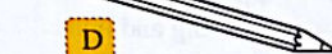
A



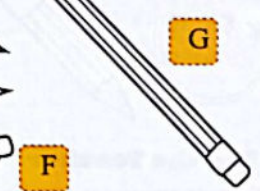
C



D



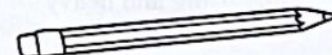
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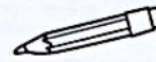
B



E



F



For the Teacher

- ✓ Relative sizes, length, and non-standard measurements (units of hand span, book length, paces or length of a stick) may be used to find the length of something.

23

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INTERACTIVE RESOURCES
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Unit 1 Plant Life

1. Types and Parts of Plants	7
2. Leaves and Flowers	14
3. Fruits, Vegetables, and Seeds	19
Revision Exercises	25
Fun Page	27

Unit 2 Animal Life

4. The Animal Kingdom	29
5. How Animals Live	37
Revision Exercises	43
Fun Page	45

Unit 3 Materials and Matter

6. Materials	46
7. Man Makes Things	52
Revision Exercises	58
Fun Page	60

Unit 4 Earth and Atmosphere

8. Air and Water	61
9. The Weather	68
10. Colours-The Rainbow	73
Revision Exercises	77
Fun Page	79

Unit 5 Sky and Space

11. The Earth, Sun, Moon, and Stars	81
12. Light and Shadow	89
Revision Exercises	95
Fun Page	97

Unit 6 The Human Body

13. Growing Up	99
14. Keeping Healthy and Safe	106
Revision Exercises	113
Fun Page	115
Test Paper I	117
Test Paper II	119



Types and Parts of Plants

Recall!

Plants are different sizes, shapes and colours.
Each part of a plant has a name.

You will learn that:

Plants are living things.
Plants are of many different shapes and sizes.
Some plants live long, others do not.
Plants grow in soil and in water.
Each part of a plant has a name.

Plants are all around us. Plants are living things. They grow. They die.



Observe and Write

Look at the pictures and find the following:

- | | |
|---------------------|----------------------|
| a. a big plant | b. a small plant |
| c. a climbing plant | d. a flowering plant |
| e. a living plant | f. a dead plant |

Different Types of Plants ▶

There are many kinds of plants.
Some plants grow in the soil.
Some plants grow up straight and tall.



Other plants grow along the ground or climb a wall.

Some plants grow in water.
Some plants grow on other plants.



Concept Check

Use the letters at the end of each sentence to fill in the blanks. ▶

- Plants are l _ _ _ _ _ t _ _ _ _ _ . gghiiinnsv
- Plants are of many different s _ _ _ _ _ s and s _ _ _ _ s. aehipz

Apply and Answer

Where do these plants grow?



Here is a mango tree. Can you write these words in the correct boxes?

branch leaf fruit trunk bark root



Write the numbers next to the correct names of these plant parts.

- | | | | | | | | |
|---------|---|----|--|----|--|----|--|
| flowers | — | 1. | | 2. | | 3. | |
| bud | — | | | | | | |
| thorns | — | | | | | | |
| stem | — | 4. | | 5. | | 6. | |
| petals | — | | | | | | |
| twigs | — | | | | | | |
| berries | — | 7. | | 8. | | 9. | |
| seeds | — | | | | | | |
| nut | — | | | | | | |

Key Words

bark the covering of the trunk of a tree
stem the main part of the plant above the ground
trunk the main stem of a tree

Recap Plants are living things. They grow and they die. There are many kinds of plants. There are plants of many different shapes and sizes. Plants grow in different ways in different places.



Some plants grow up straight and tall.



Some plants grow along the ground or climb a wall.



Some plants grow in water.



Some plants grow on other plants.

EXERCISES

A. Choose the correct option.

- Which of the following can a plant do?
a. talk ☐ b. grow ☐ c. walk ☐ d. jump ☐
- Pick the sentence that is true.
a. All plants are big. ☐
b. All plants are small. ☐
c. Plants are of the same shape and size. ☐
d. Plants are of different shapes and sizes. ☐
- What is the name used for plants that grow along the ground?
a. creepers ☐ b. peepers ☐ c. climbers ☐ d. cactus ☐
- What is the name used for plants that can grow up a wall?
a. creepers ☐ b. peepers ☐ c. climbers ☐ d. cactus ☐
- Which of these is part of a tree?
a. meow ☐ b. woof ☐ c. moo ☐ d. bark ☐

B. Write the correct name for each plant



palm



banana



rose



banyan



grass

C. Draw pictures of the following in your scrapbook.

branch cactus creeper bush grass

D. Mark these sentences with ✓ or ×.

1. All plants are big.
2. Only some plants die.
3. Plants are living things.
4. All plants grow.
5. The banyan is a big plant.

E. What does each sentence describe?

1. This plant grows tall and straight. _____.
2. This plant grows along the ground. _____.
3. Cows like to eat this plant. _____.

F. Tell your teacher. Which plant will grow big and strong? Why?



G. Tell your teacher. Look at the pictures. Talk about the differences.



H. Draw branches, leaves, and fruits or flowers on this tree.



I. Find out the names of the following:

1. a plant that grows in water _____
2. a plant that grows on a sandy beach _____
3. a shrub that has flowers _____
4. a tall tree _____
5. a fruit tree _____

J. Circle the odd one in each list.

1. banana, apple, rose, coconut, pear
2. grass, jasmine, wall, cactus, bush
3. live, die, grow, sing

K. Find out the names of three plants that grow in your school or in your garden at home.

- a. _____ b. _____ c. _____

Activities and Projects

1. Make a large table like this, for your display board. Find out the names of plants. Add the names when you can. Find some pictures too.

Big plants	Small plants
banyan	rose

2. Draw pictures of plants. Colour them. Cut them out. Display them.
3. Make a collection of different kinds of grasses. Display them.

Teacher's Notes

- ✓ Find out if pupils know the names of plants near the school. How are these recognised—by the fruit, leaves, flowers, or by the shape of the plant?
- ✓ Bring various plants to class and study the various parts. Discuss functions, shapes, colours, sizes, etc.
- ✓ Explain that plants grow in many different conditions, and they adapt to those conditions. If there are no water plants nearby, or other plants shown in the textbook, show pictures.
- ✓ State that pupils should not pick too many flowers or leaves, or destroy plants. Plants are useful and should be cared for.

Recall!

A leaf is a part of most plants.

A flower is a part of some plants.

Flowers and leaves have parts.

Flowers and leaves are of many different shapes, sizes and colours.

You will learn that:

Leaves are of all shapes and sizes, and are usually green.

Leaves have different kinds of edges.

Plants store their food in roots, stems, and leaves.

Plants grow in soil and in water.

Plants have flowers of different colours, shapes, and sizes.

Flowers grow from buds.

Leaves grow on plants.

Plants store their food in **leaves**, **stems**, and **roots**.

Leaves are usually green.

Leaves have many different shapes.

There are big leaves and small leaves, long leaves and short leaves.

Some leaves have straight edges and others have spiky or curved edges.

Observe and Write

Neem



Eucalyptus



Coconut palm



Banana



Pine



Papaya



Peepal



Mango

Talk about these leaves. Which ones are long? Which ones are short? Which ones have straight, spikey or curved edges? Describe them to each other.

Flowers

Flowers grow on trees, bushes, and other kinds of plants.

Flowers grow from **buds**.

Flowers make a garden look beautiful.

There are flowers of many different colours, shapes, and sizes.



Hibiscus



Marigold



Bougainvillea



Some flowers have many **petals**, others only have a few.

Some petals are small, and others are large.

Some plants have many flowers. others have a few.

**Concept Check**

Fill in the blanks with the following words. 

colours buds shapes

1. Flowers grow from _____.

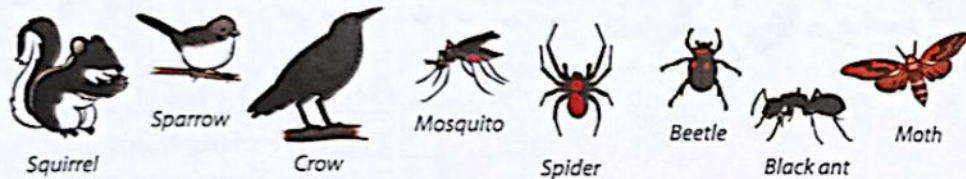
2. There are flowers of many different _____, _____ and sizes.

Draw and Describe

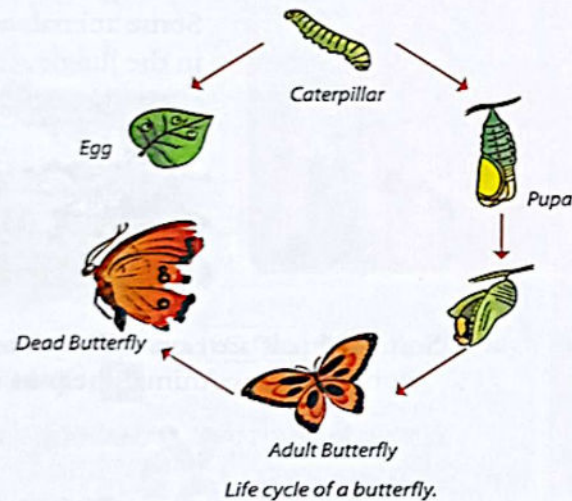
If you can get a few different flowers, try to draw two petals and then describe them to a classmate.

In a garden there are many small animals. They live on the ground or in trees and other plants.

Here are some of the small animals you may find in your garden.



Animals are living things. They move, they breathe, they eat and drink. They die.



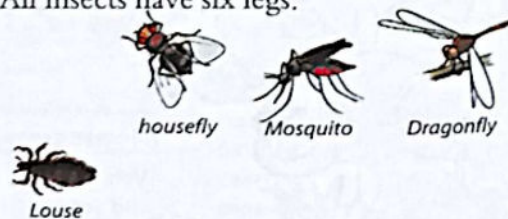
Insects

Insects are very small living things. All insects have six legs.

Here are some insects.

Insects with wings can fly.

Insects without wings do not fly.



Here is a cockroach.

Can you see the two long bits on the head? They are called **feelers**.



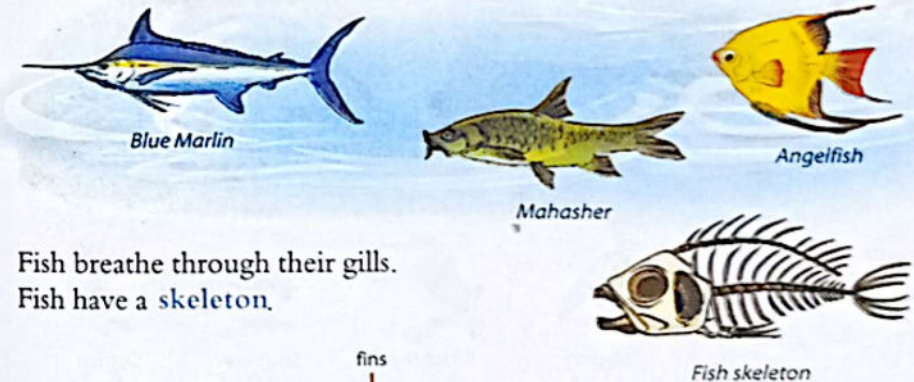
Cockroaches can hold their breath for over half an hour. Cockroaches can run at three miles an hour. Cockroaches can live for a week without their head! Cockroaches spread germs and disease.

Know More

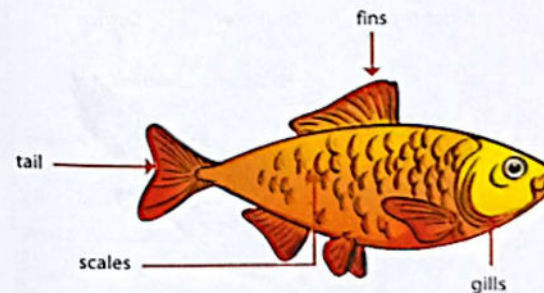
Feelers are also known as antennae. Insects use them to feel things around them. What do you use to feel the shape, texture and size of things? Some insects can hear and smell with their feelers!

Fish

Some fish live in freshwater lakes and rivers. Some fish live in salty sea water. Fish have **fins**, **scales**, **gills**, and a **tail**.



Fish breathe through their gills. Fish have a **skeleton**.



Word Study

Texture: the look or feel of something

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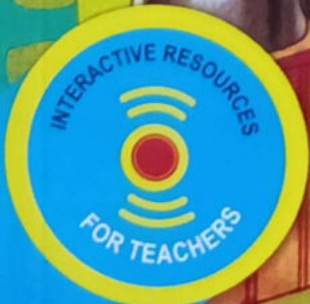
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2

Lester Davidson





Contents

Unit 1 Plant Life

- 1. Types of plants 7
- 2. Uses of plants 13
- 3. Fruits and seeds 20

Revision Exercises 26

Fun Page 28

Unit 2 Animal Life

- 4. Animals 30
- 5. Birds 38
- 6. Life in water 44

Revision Exercises 50

Fun Page 52

Unit 3 Materials and Matter

- 7. What things are made of 54

Revision Exercises 60

Fun Page 62

Unit 4 Earth and Atmosphere

- 8. Air 63
- 9. Water 70
- 10. The seasons 77

Revision Exercises 83

Fun Page 85

Unit 5 Sky and Space

- 11. The Earth, sun, moon, and stars 86
- 12. Light and shadow 93

Revision Exercises 98

Fun Page 100

Unit 6 The Human Body

- 13. The body machine 102
- 14. Health and safety 108

Revision Exercises 113

Fun Page 115

Test Paper I 117

Test Paper II 119



1

Types of Plants

Recall!

Plants are living things.
Plants are of many different shapes and sizes.
Some plants live long, others do not.
Plants grow in soil and in water.
Each part of a plant has a name.

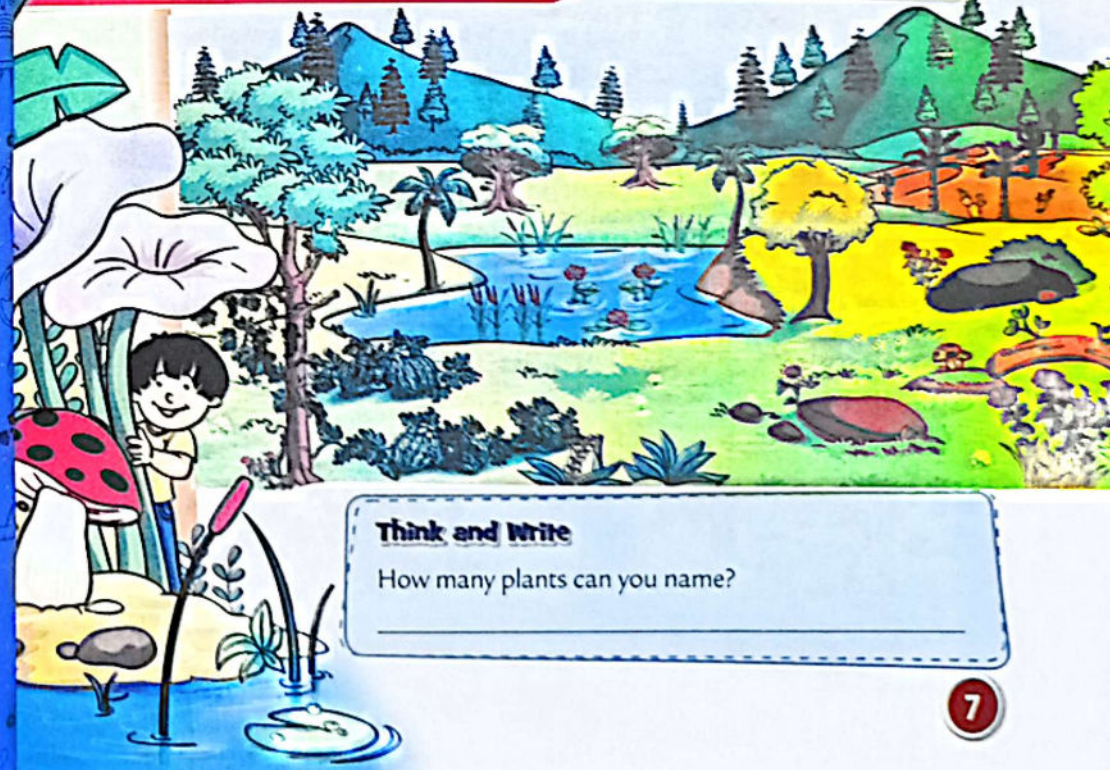
You will learn that:

Trees are large plants with a strong, woody stem.
Climbers, creepers, cactuses, shrubs, and herbs are other plants.

Plants grow in all shapes and sizes. Some grow on **ground**, others grow in **water**. Plants are living things.

Environment Watch

Plants are useful and important to us and the environment. Look after them well!

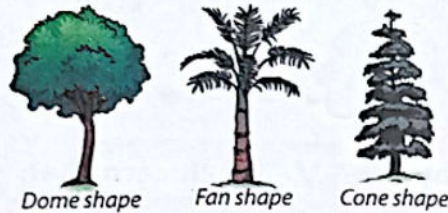


Think and Write

How many plants can you name?

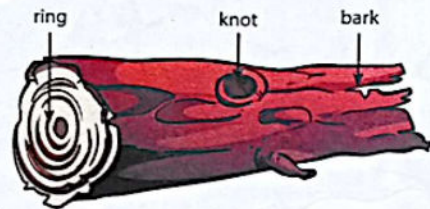
Trees

Trees are the largest plants. They are tall and strong. They usually have a single woody **stem**. Some trees are thousands of years old.



In thick forests or **jungles**, trees grow close to each other. Look at the picture alongside. The trees are all trying to reach up to the sunlight.

This piece of wood is from the **trunk** of a tree. Each year the tree grows a new coat or skin. The **bark** stretches and cracks.



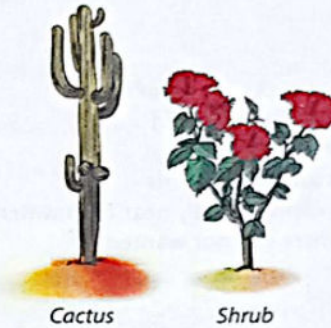
Climbers and Creepers

These have a weak stem. Climbers climb up sticks, walls, or trees. Creepers grow along the ground.



Cactuses

There are many kinds of cactuses. They usually grow in dry grasslands or semi-desert regions. They have spines (**thorns**) which are modified leaves.



Myth vs Fact

Can cactuses survive without any water or nutrients?
Cactuses need some nutrients in the soil and they also need water. Their spines channel moisture to the roots and also provide some shade!

Shrubs

Shrubs are small plants. They have many separate stems which grow from near the ground. The stems are hard and do not bend easily.

Herbs

Herbs grow in gardens and in the wild. Herbs are small and have soft, weak stems. Herbs are used for food. We make **medicines** and **perfumes** from herbs.

Weeds are also herbs. These are plants which grow where we don't want them to grow!



Grasses and Water Plants

There are many kinds of **grasses** and **reeds**. They may be short or tall, brown, yellow, or green. Water plants grow in water or in wet soil under water.

Concept Check

Label the figure with these words: flower, stem, leaves, water, air, floating plant, water surface

Think and Answer

Where does a floating plant get its nutrients from?



We use plants too. We use the flowers and leaves from plants as decorations and at special times.

Plants give us food. We eat the **fruit**, **nuts**, and **berries** which grow on some plants. We also eat the **roots**, **stems**, **leaves**, and **seeds** of some plants.



Concept Check

Complete each sentence using a word beginning with F.

- Plants provide _____ for animals and humans.
- Some plants produce _____, which we use for decorations.
- We eat different parts of plants such as _____, nuts, roots, stems, leaves and seeds.

Discuss and Answer

Do this activity after reading page 15: With a partner, make a list of twenty things that you have eaten, drunk, or used in the last 24 hours that come from a plant. Could we live without plants?

Plants also give us **fibres**. With **cotton** fibres we make thread and cloth. With **jute** fibre we make sacks, mats, bags, and rope.



Log cabin

From trees we get **wood**. We use wood to make a number of things. We build things with wood.

Here are some other things we get from plants.



Know More

This book is made of paper. Paper is made from wood. Wood is made into pulp. The pulp is turned into paper.

Word Study

'beverage: A drink other than water



Compost and manure

Key Words:

plant fibres fibers that we get from plants such as cotton and jute
jute coarse fibre used for making sacks and ropes

Roots



Fruits



Leaves



Seeds



Stems



Beverages

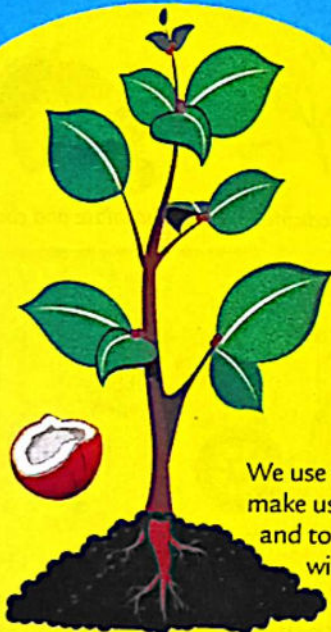


Fibre

Plants also give us fibres like cotton and jute.



Plants give us food.



We use wood to make useful things and to build things with.

Plants have many uses. They make the world beautiful. Humans and animals use plants.

Soaps, oils, gum, rubber
Plants are used in many products for everyday use.

Wood



EXERCISES

A. Choose the correct option.

1. Which of the following is usually made out of wood?

- | | | | |
|-----------------|--------------------------|--------------|--------------------------|
| a. mobile phone | ☐ | b. car tyres | ☐ |
| c. shoes | ☐ | d. newspaper | ☐ |

2. Which of the following is NOT a root vegetable?

- | | | | |
|-------------|--------------------------|-----------------|--------------------------|
| a. carrot | ☐ | b. sweet potato | ☐ |
| c. cucumber | ☐ | d. radish | ☐ |

3. Pick the most accurate definition. Compost is used as a fertilizer for growing plants. It is made of this.

- | | |
|--------------------------------|--------------------------|
| a. decayed plant materials | ☐ |
| b. a mixture of mud and manure | ☐ |
| c. wood | ☐ |
| d. rubbish that we throw away | ☐ |

4. Wood is a good material to build with because

- | | |
|--|--------------------------|
| a. it lasts forever and does not break | ☐ |
| b. it is waterproof, strong, and easy to clean | ☐ |
| c. it is strong and long lasting | ☐ |
| d. it is strong and will not burn | ☐ |

5. We should eat fresh fruits and vegetables because they are

- | | |
|----------------------------------|--------------------------|
| a. bright and colourful | ☐ |
| b. full of vitamins and minerals | ☐ |
| c. inexpensive | ☐ |
| d. sweet | ☐ |

What Things are Made of.

Recall!

Man makes all kinds of things; some big, some small.

Some things are beautiful and others are useful.

We use machines and tools to do work and move things.

Living things move; non-living things move when pushed or pulled.

You will learn that:

Living things breathe, move, eat, and grow; they reproduce.

Some non-living things are made of natural materials.

Natural materials come from plants, animals, and minerals.

Some non-living things are made by humans.

Matter has three states: solid, liquid, and gas.

Rocks are found on the surface and underground.

Rocks are used to make many things.

We can put everything in the world into three groups: alive, once alive, and never alive.



Alive

These things are living. They breathe, move, eat, and grow.

Once Alive

These things were once living. They are now **dead**. Some such things were made by humans.



Never Alive

These things were never alive. They do not move, eat, grow, or breathe. They do not have babies.



Think and Write

How is a pet dog different from a toy dog? Write your answer in two sentences.

Man-made Things

Man-made things are made out of different materials. Some materials come from **plants** and **animals**. Some materials are dug out of the **ground**. Some materials are **made by man**, e.g., plastic and nylon.

From plants



Plants give us fibres such as jute, and cotton. From plants we also get wood.

From animals



From animals we get wool, leather, bone, and fur.

From minerals



Materials from the ground are metals, precious stones, and clay.

Things can be **solid**, **liquid**, or **gas**.

Solids

We can see, touch, feel, weigh, and describe solids. Most solids are hard. Rock, ice, and sand are solids.



Liquids

We can see and touch liquids. We can pour liquids. Some solids can be made into liquids. When a solid candle or ice-cube is heated, it becomes a liquid. Milk, water, and petrol are liquids.



Gases

The air* around us is made up of gas. We cannot see gases. One important gas is called oxygen. We need oxygen to live. A candle flame needs oxygen to burn. Water vapour is a gas.

*You will learn more about air in Chapter 8.



Concept Check

Use the words solids, liquids, gases/gas to complete the statements. ▶

- _____ can be poured.
- You can touch _____ and _____.
- _____ cannot be seen.
- The _____ we need to live is called oxygen.

Discuss and Answer

Read this list of drinks: cola, milk, tea, juice, water, coffee, lemonade.
Which of the items listed above are man-made? Do they come from plants, animals, or minerals?

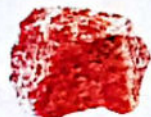
More About Solids: Rocks

Rocks are found on the **surface** of the Earth.
Rocks are also found **underground**.
Pebbles, sand, and soil were once part of much larger rocks.



Types of Rocks

Some rocks are hard.



Marble



Granite



Coal



Chalk

Some rocks are soft.

Rocks are used in many ways. Rocks are blown up with sticks of dynamite. They are then cut with machines or with a hammer and chisel. Rocks are used to make many things.



Statue



Grinding stone



Ruby Earrings



Slate roof



Stone bench



Stone vase

Key Words

solids things that hold their shape and can be seen, touched, and weighed
liquids things that can be poured and take the shape of the container they are in; can also be seen and touched
gases things that cannot be seen and are all around us; living things need the gas called oxygen

Recap

Some things are living; others are non-living. We can put everything in the world into three groups: alive, dead (once alive) and never-alive. Dead things were once living. Things that were never alive can be made by man or dug out of the ground.



EXERCISES

A. Choose the correct option.

- Which two of the following things were NEVER ALIVE?
a. spoon ☐ b. chalk ☐ c. salad ☐ d. tree ☐
- Which of the following can all living things do?
a. breathe ☐ b. eat ☐ c. grow ☐ d. move ☐ e. all of these ☐
- Which of the following does a flame need to burn?
a. cloud ☐ b. oxygen ☐ c. liquid ☐ d. candle ☐
- Which of the following is NOT man-made?
a. plastic bag ☐ b. leather belt ☐ c. gold ring ☐ d. rock ☐
- Which of the following solids is a precious and expensive stone?
a. coal ☐ b. ruby ☐ c. wool ☐ d. chalk ☐

B. Mark the sentences with a ✓ or ×.

- Graphite is a hard rock.
- Plastic is found underground.
- Wool comes from animals.
- Jute is a type of fibre.
- Rocks can be blown up with dynamite.

C. Answer these questions.

- What kind of material is clay?

- What things are made from animal skins?

- Name three things made out of plastic.

- Name three things made from natural materials.

- From which materials might these things be made? (Remember that some of the things can be made from more than one material.)
belt, shirt, clock, pencil, tyre, vase

- Make a table in your notebook with these headings: alive, never alive, and dead (made into things by man). List five things under each.

F. Think about it!

- When a flower is plucked is it still alive? Tell your teacher what you think.
- How do you think pebbles and small grains of sand were formed?

Activities and Projects

- Choose three things. One must be alive; one must be something that was never alive; and the third must be an object that has been made from something that was once alive. Draw a picture of each thing and write a few sentences about it.
- The air we breathe contains water vapour. Set up an experiment to show this is true. You will need a mirror or something made of glass. If you don't have a mirror, what might you use?
First open your mouth and breathe hard out of your mouth onto the palm of your hand. Is your breath warm or cold? Now breathe out onto the mirror. What happens? What happens to the surface of the mirror? What does this tell you?
- Collect rocks of different colours. Display these in the classroom. Which ones can be broken easily? Which ones are too hard to break? Also, collect sand and soil of different colours and pour them carefully, one at a time, into a glass jar.

Teacher's Notes:

- ✓ It is important to learn how to sort and classify. Practise sorting other groups too. Give other examples of how materials change by heating or cooling.
- ✓ In the experiment, what collects on the mirror is vapour. Vapour forms drops of water when it comes into contact with a cooler surface. (It condenses. Use this word now, so that the children become familiar with it.)
- ✓ Get the children to bring samples of rock to class. Say a little about how rocks are broken down into smaller pieces over a length of time by weathering and abrasion.