

ARROW

SCIENCE WORLD

BOOK - 1

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PREFACE

Science World by Arrow Publications Pvt. Ltd. is a six-level series for classes UKG and I to V designed with the objective of making the learning of science a joyful experience for the young learners. The content addresses the learners directly to make it interactive and learner-centred and attempts to establish a warm and friendly relationship between the learners and their environment. The series takes the learners on a fascinating journey to the amazing world of science, arouses their natural curiosity and nurtures their creative instincts.

The series aims to develop in learners habits of observation and exploration, the ability to think logically and draw inferences. A serious and conscious attempt has been made to link all the basic principles and concepts of science to the immediate environment and experiences of the young learners so that learning becomes relevant and meaningful.

The key features that make the series unique are :

- Graded content presented in a simple and lucid style to facilitate easy understanding of the concepts
- Colourful and lively illustrations which make the books a visual delight for the young learners
- **Did You Know** section in each lesson which adds to the information given in the lesson
- **Recall** in each lesson to help learners summarise the content in the lesson
- **Check Your Progress** to recapitulate and reinforce the concepts learnt in each lesson
- **Fun Activity** to make learning fun-filled, lively and interesting
- **Project Work** to engage the learners in meaningful activity
- **Oral Work** and **Hots** to develop logic and thinking skills
- **Improve Your GK** to encourage learners to gather more information on a given topic
- **Practice Papers** to help in continuous assessment
- **Fascinating Facts** to expose the learners to some interesting information beyond the textbook.
- Interactive CD-Rom to make learning interesting and child-friendly
- Teacher's Handbook that serves as a guide to the teachers.

We hope this series will equip learners with the necessary skills and knowledge and also serve to fulfil the larger goal of fostering a scientific attitude and a spirit of scientific inquiry in them.

Happy teaching and happy learning!

We are grateful to Mrs Padmini Sameeran for her valuable suggestions and guidance during the making of this series.

– *Publishers*

SCIENCE TEACHING IN THE CLASSROOM

The word 'Science' comes from the Latin word 'Scientia', meaning 'knowledge'. So, it is basically the pursuit and application of knowledge and understanding of the natural and social world following a systematic methodology based on evidence. Science is based on fact, not opinion or preferences. It is knowledge accumulated through discoveries about all the things in the universe.

At the primary level, the main objectives of teaching science are:

Knowledge - students should acquire the knowledge of:

- fundamental principles and concepts useful in daily life
- plant life and animal life
- interdependence and relationship between living and non-living
- natural phenomena
- general rules of health and hygiene

Skills - students should acquire skills of:

- experimentation
- observation
- drawing
- reflective thinking

Abilities - students should develop ability to:

- analyse and interpret
- generalise and draw inferences
- engage in discussions
- use scientific terminology

Attitude - students should develop:

- a scientific approach
- open mindedness
- curiosity to know answers to whats, whys and hows of things
- an objective approach

Appreciation - students should learn to:

- appreciate natural beauty
- develop interest in knowing about scientific literature
- develop scientific hobbies
- keep in touch with the new inventions and discoveries in science

Training for Better Living - students should know:

- the ways to maintain good health
- the ways to prevent diseases
- the ways to adjust with the social environment

INSIDE THIS BOOK

Green Pages

Creates awareness of the surroundings

Keywords

Introduces new terms in science

Recall

Summarises the lesson in clear and easy-to-understand points

Check Your Progress

Tests understanding of the concepts learnt in each lesson

Project Work

Develops observation and experimentation skills

Hots

Develops reasoning skills

Improve Your GK

Adds to the knowledge of the learners

Fun Activity

Creates interest in the young learners

Revision and Assessment Papers

Assesses progress of learners periodically

GREEN PAGES

Kids today have more power than anyone else to help save the Earth from human waste and pollution. Follow certain steps which would be fun and helpful to make the Earth a little greener for all of us.

Reduce your energy consumption and power bill:



Turn off lights and electronic items such as TVs and computer systems when you're not using them. During the day, open curtains and doors, and use natural light instead of electric light.

Save water:

Use less water. Turn off the taps and get the leaking taps repaired to stop leakage and wastage of water. This includes when you're brushing your teeth, cleaning utensils, watering plants etc. Every little bit helps!



Reduce usage of plastic:



Using plastic is very helpful to complete our tasks but reduce its usage as it may harm the environment in which we are living. It does not decompose.

Plant trees:

Make it a habit to plant at least one plant on your birthday. You can do this on the birthdays of all your family members. Never cut trees. They give us the oxygen we require to live.



Be generous:



If you have any old clothes and toys with you, please be generous enough to share it with the poor. Even poor people have the every right to live and enjoy along with us.

Save wild life



White Bengal tigers are native to India especially to Assom, Bengal and Bihar. The unusual white colour of white tigers made them special in zoos. There are only about 200 white tigers left in the world. Some people hunt these animals because their fur is unique and rare. We must take action to save these white tigers or else within some days we cannot find them at all.

Plants as medicines:



Turmeric powder is an antiseptic agent. It is yellow and gives colour to the foods when added. It is a must in every kitchen. So, if you are hurt, ask your mummy to apply it.

CONTENTS



UNIT - I : THINGS AROUND US 10-19

1. Living and Non-Living Things 10

UNIT - II : THE WORLD OF PLANTS 20-51



2. Kinds of Plants 20
3. Parts of a Plant 28
4. Plants Grow from Seeds 36
5. Plants Give You Food 43

Revision Paper - 151

UNIT - III : THE WORLD OF ANIMALS 52-75



6. Animals - Big and Small 52
7. Animals Around You 64

UNIT - IV : THE HUMAN BODY 76-93



8. Know Your Body 76
9. Keeping Fit and Healthy 84

Revision Paper - 291

Assessment Paper - 192

UNIT - V : YOUR NEEDS 93-112

- 10. The Food You Eat 93
- 11. The Clothes You Wear 100
- 12. The House You Live In 106



UNIT - VI : AIR WATER AND WEATHER..... 113-133

- 13. The Air Around You 113
- 14. The Water You Drink 120
- Revision Paper - 3 126**
- 15. Weather and Seasons 127



UNIT - VII : SAFETY FIRST..... 134-140

- 16. Keeping Safe 134



UNIT - VIII : OUR UNIVERSE 141-148

- 17. The Sun, Moon and Stars 141

Revision Paper - 4 147

Assessment Paper - 2 148

Fascinating Facts 149



LIVING AND NON-LIVING THINGS

Look around you. What do you see?

You can find both living and non-living things.

Look at the picture below.

Can you name some things that you think are living?

Can you name some things that you think are non-living?



You are living. Plants and animals are living too. But your house, toys, books, clothes and bed are all non-living.

How do you know they are living or non-living?

Let us find out.

LIVING THINGS GROW

You are growing bigger and bigger.



baby



child



man

Not just you.

Animals also grow big.



puppy



dog



kitten



cat

Even plants grow.

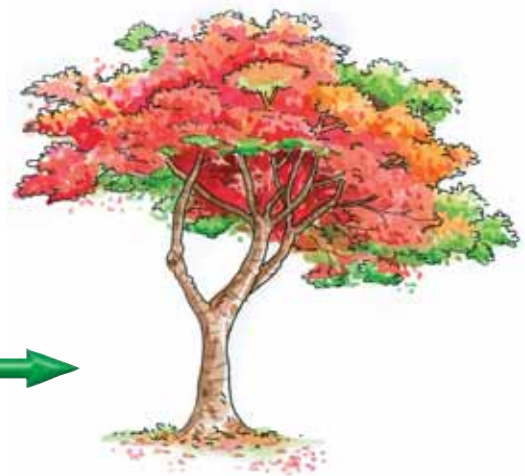
They grow from seeds to become big plants.



seed



small plant



tree

LIVING THINGS CAN MOVE ON THEIR OWN

You can walk, run and jump.



walk



run



jump

Animals too can move.



a dog runs



a fish swims



a bird flies

Plants cannot move like you. But they move in their own way.



branches and leaves



sunflower



touch-me-not plant

Did you know?

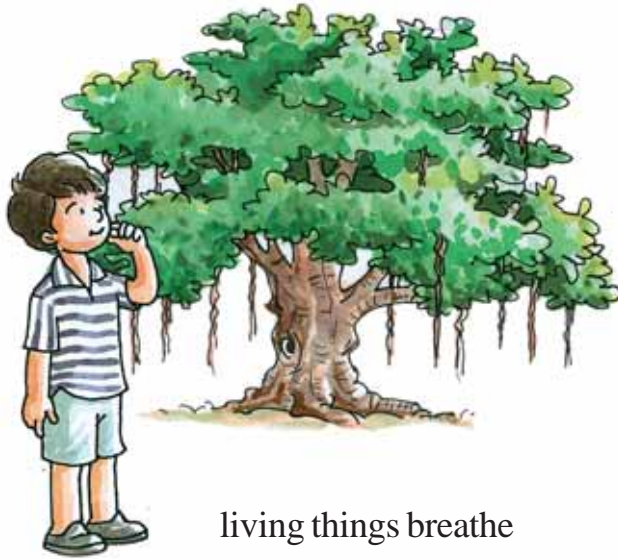
The sunflower
always faces the
sun.



LIVING THINGS NEED AIR TO LIVE

You breathe in air.

Plants and animals also take in air.



living things breathe

Did you know?

Plants have holes in leaves to take in air.



LIVING THINGS NEED FOOD AND WATER TO LIVE

You eat food every day. You drink water too. Plants and animals also take food and water.



Living things need food and water

LIVING THINGS FEEL

You feel happy. You feel sad at times.

You feel pain when you get hurt.



happy



sad



pain

You can also see, hear, smell, taste and touch things around you.

Plants and animals too feel like you.

LIVING THINGS HAVE BABIES



mother with baby

A mother has babies.

Animals also have young ones.



hen with chick

Even plants make new plants from seeds.



seed



plant

Non-living things do not need food, air and water. They do not feel, grow or have babies and they cannot move on their own.



book



toy



car

All living things are made by nature. Some non-living things like water and rock are also made by nature. They are called natural things.



water



rock

Some things like a house, a table, a chair are made by man. Things made by man are called **man-made** things.

All man-made things are non-living.



house



chair and table

So, all around you, you see many things.

Do you now know what makes them living or non-living?

KEYWORDS

living

grow

smell

water

natural

non-living

feel

see

rock

man-made

air

move

taste

babies

animals

eat

plant

food

touch

happy

drink

hear

breathe

pain

sad

RECALL

- * Things can be living or non-living.
- * Living things need food, air and water.
They feel, move, grow and have babies.
- * People, plants and animals are living.
- * Non-living things do not need food, air and water. They do not feel, move, grow or have babies.
- * All living things are made by nature and are called natural things.
- * Non-living things can be natural or man-made.

CHECK YOUR PROGRESS

1. Answer the following questions.

1. What are the two types of things you see around you?

2. What do living things need to live?

3. Name three living things.

4. Write the names of three non-living things around you.

II. Fill in the blanks with the right word.

1. Plants and animals are things. (living / non-living)
2. Plants have holes in to take in air. (fruits / leaves)
3. Plants grow from (seeds / eggs)
4. All living things are (natural / man-made)
5. A baby cat is called a (puppy / kitten)

III. Write (T) for true and (F) for false statements.

1. A rock is a natural thing. []
2. A fish flies in the air. []
3. You feel happy when you get hurt. []
4. A car can grow bigger and bigger. []
5. All man-made things are non-living. []

IV. Choose the right answer.

1. This is a living thing []



b.



c.



2. This is a man-made thing []

a.



b.



c.



3. This flies in the air []

a.



b.



c.



4. A living thing that cannot move []

a.



b.



c.



5. The young one of a hen []

a.



b.

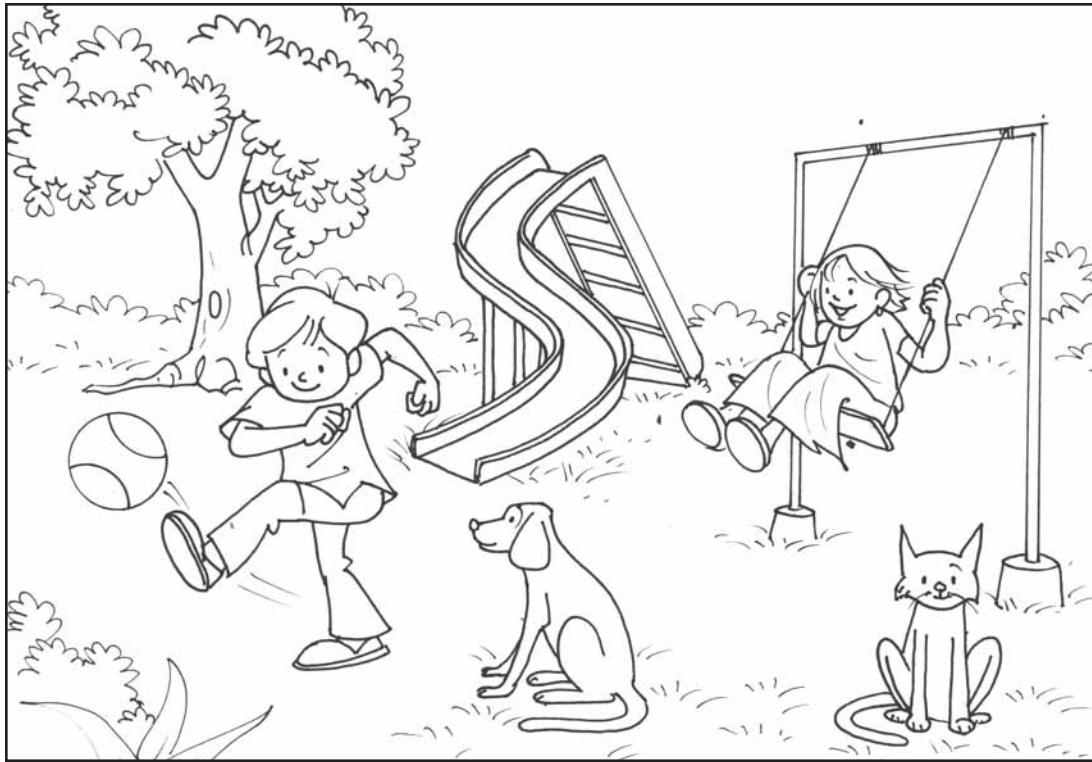


c.



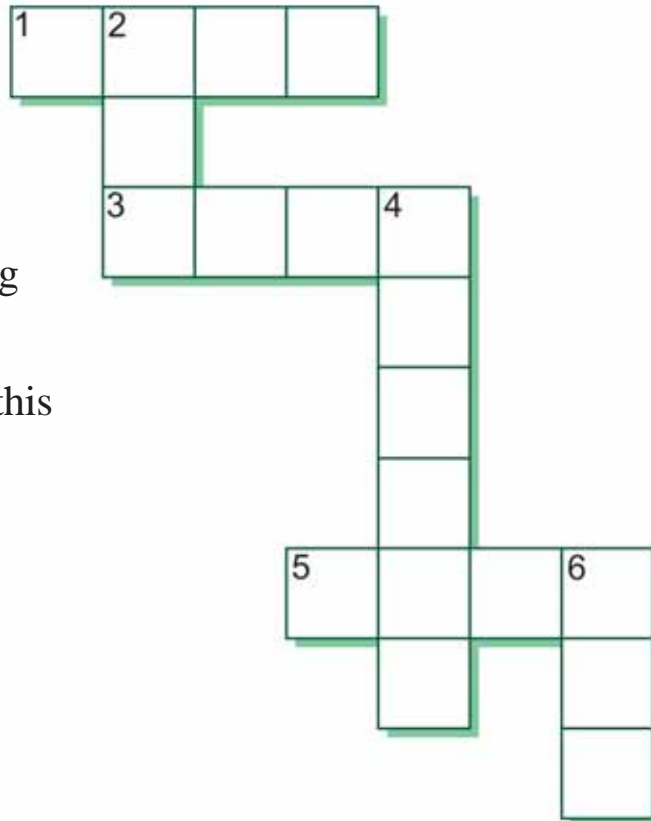
FUNACTIVITY

I. Colour all the living things in this picture.



II. Solve this puzzle with the help of clues.

1. You were once this
2. You breathe in this
3. This is a natural thing
4. This is a baby cat
5. A plant grows from this
6. It is a pet animal



PROJECT WORK

- * *You know that living things grow.*

Do you know your height?

Measure your height and keep a record of it.

Update it every month.

After six months, write your observations in your own words.

- * *Take a seed. Put it in a pot with mud. Pour water daily and observe after a few days. Record your observations.*
- * *Take 2 potted flowering plants. Pour water in one of them and do not water the other. Observe what happens and record your observation. Write your conclusion based on the observation.*



ORAL WORK

- * *Talk to your teacher about what living things need to live.*
- * *Look around your class room. Spot as many living and non-living things as you can and tell your teacher about the differences between them.*
- * *We know that living things move. A train and a bus also move. Are they living things?*

[Hint: They move as human beings move them. They do not grow or breathe.]

IMPROVE YOUR GK

The leaves of this plant close when you touch them :



touch-me-not plant