Marshall Cavendish Education

Endorsed by Cambridge Assessment International Education

Marshall Cavendish SCIENCE

For Cambridge Primary Stages 1 to 6

A high-quality and complete instructional package that provides support for the Cambridge Primary Science Curriculum Framework

Support High Quality Teaching and Learning

This package is based on the guided constructivist-inquiry approach and uses spiral progression to build a strong foundation.

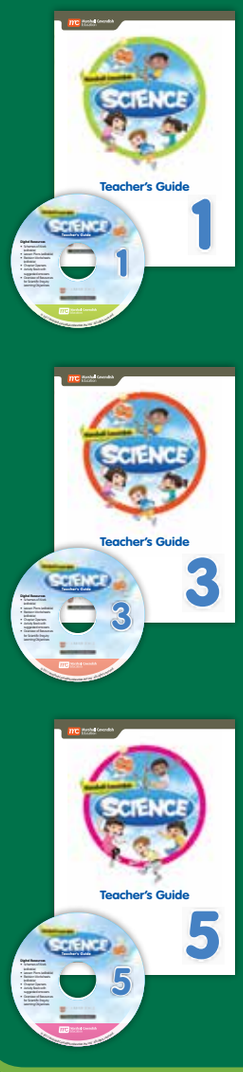
What's in Our Package?

Pupil's Book

Stages 1 – 6

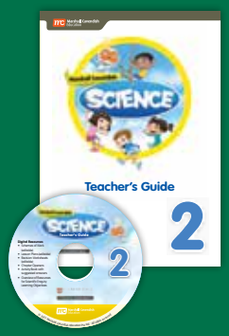
Activity Book

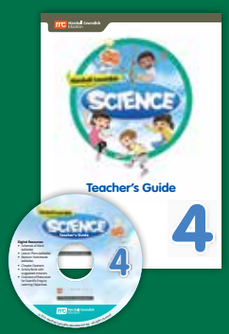
Stages 1 – 6

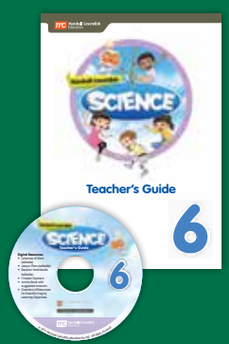


Teacher's Guide
with digital resources

Stages 1 – 6







Digital Resources in CD-Rom:

- Schemes of Work (editable)
- Lesson Plans (editable)
- Revision Worksheets (editable)
- Chapter Openers
- Activity book with suggested answers
- Overview of Resources for Scientific Enquiry Learning Objectives

(Resources also available at www.mc-science.com)

Why choose Marshall Cavendish SCIENCE?

Carefully Developed to deepen conceptual understanding and scientific skills

Well-designed to engage and captivate pupils

Enhance Teachers' Effectiveness to deliver better lessons

Master Concepts and Reinforce Learning

Constant reinforcement of learning will lead to deeper understanding. Pupils can review and assess what they have learnt through ample formative assessment opportunities.

What You Have Learnt

- The parts of plants carry out different functions.
- Leaves make food for plants.
- Flowers help flowering plants reproduce.
- Roots hold plants firmly to the ground. They also absorb water and dissolved mineral salts from the soil.
- Stems transport water and mineral salts from the roots to the other parts of plants. Stems also hold the leaves up so that they can get sunlight.
- To live and grow well, plants need healthy leaves, stems and roots to work together.

Key learning points are consolidated at the end of each section in *What You Have Learnt* with concise notes for pupils to **review** before they move on to the next part.

Pupil's Book, Stage 3

Pupil's Book, Stage 3

Pupils can **self-assess how much they have learnt** at designated milestones in each chapter with *Exercise.*

Exercise

1 A fly and an owl are both animals.

Fly

Owl

(a) Which group does each animal belong to?
(b) Describe three ways in which they are similar.
(c) Describe three ways in which they are different.

2 Look at the body coverings of these animals.

Animal X

Animal Y

Animal Z

(a) Identify the body coverings of animals X, Y and Z.
(b) Which group does each animal belong to?

Let's Review, page 12
Reflection, page 13

Teachers can **check for pupils' understanding** with *Worksheets* and encourage **recall of concepts learnt** with concept maps in *Let's Review* to facilitate **assessment for learning**.

1 Light and Dark

Worksheet 1

Light Sources in School

Aim: To identify light sources in different parts of the school
Skills: Observing, identifying, communicating

1 Look around your school.

2 Name one light source in each of these parts of your school.

Classroom

Light source: _____

Reflection

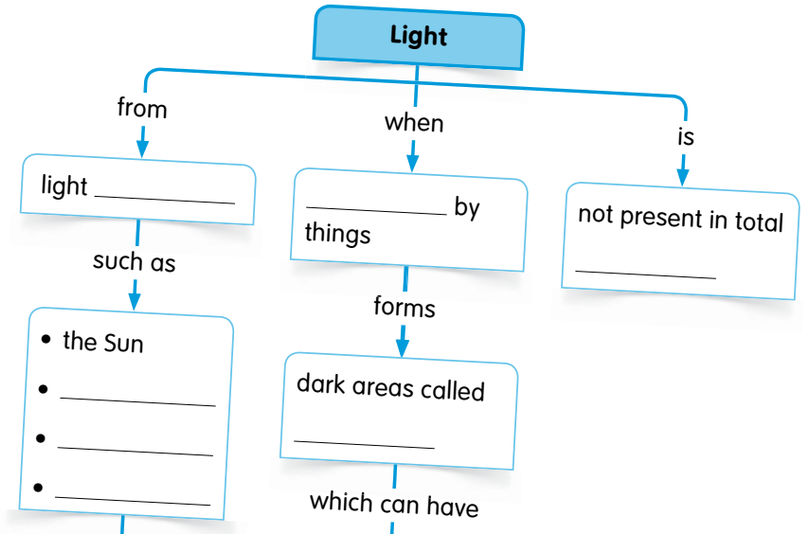
ck (✔) to show how well you have learnt. Revise the Pupil's Book ection(s) that you do not know well.

I have learnt to	☺ Yes	😐 Not sure	☹ No	Pupil's Book section(s)
dentify different sources of light such as the Sun				A
recognise that there is total darkness when there is no light				B
dentify shadows				C

Let's Review

Fill in the blanks. Use the helping words.

blocked darkness eyes fire lamps
shadows shapes sources stars sizes



Develop Effective Habits of Learning

Through highly engaging activities that promote active learning, pupils will learn to become confident, innovative, responsible, reflective and engaged.

Opportunities for hands-on learning in *Try This* allow pupils to become **active learners**, **practise collaboration** and **develop thinking skills**.

Try This

STEP 1 Your teacher will give you a few bags. Each bag has a different thing in it.

STEP 2 Put your hand into a bag.

STEP 3 Feel the thing inside. Can you say how it feels to touch? Try to guess what it is.

Pupil's Book, Stage 1

Teaching ideas

11. **Try This**

Let pupils do the activity in Try This (Pupil's Book p. 12).

- Choose five small objects (such as glass marble, stationery, pebble, coin and key) to put in five small opaque bags.
- Make sure these objects are not sharp, brittle or fragile.
- Pass the bags around the class so that each pupil has a chance to feel the objects in the bags.
- Ask pupils to guess the objects using their sense of touch.
- Take the objects out of the bags after all the pupils have felt them.
- Ask pupils whether they have guessed the objects correctly using their sense of touch.
- **Ask: Which of the senses did you use to check whether your guesses are correct?** (Answer: Sense of sight)

(Answers:

STEP 3 Answer varies.

STEP 5 Answer varies.)

(Active learning; Skills: Observing, communicating, verifying)

Material(s)

- 5 small opaque bags each with a small object (such as glass marble, stationery, pebble, coin and key) per class

Skill(s)

- Observing
- Communicating
- Verifying

Essential process skills practised during the lesson are highlighted to teachers in *Skill(s)*.

Teacher's Guide, Stage 1

Try This

STEP 1 Your teacher will give you a few bags. Each bag has a different thing in it.

STEP 2 Put your hand into a bag.

STEP 3 Feel the thing inside. Can you say how it feels to touch? Try to guess what it is.

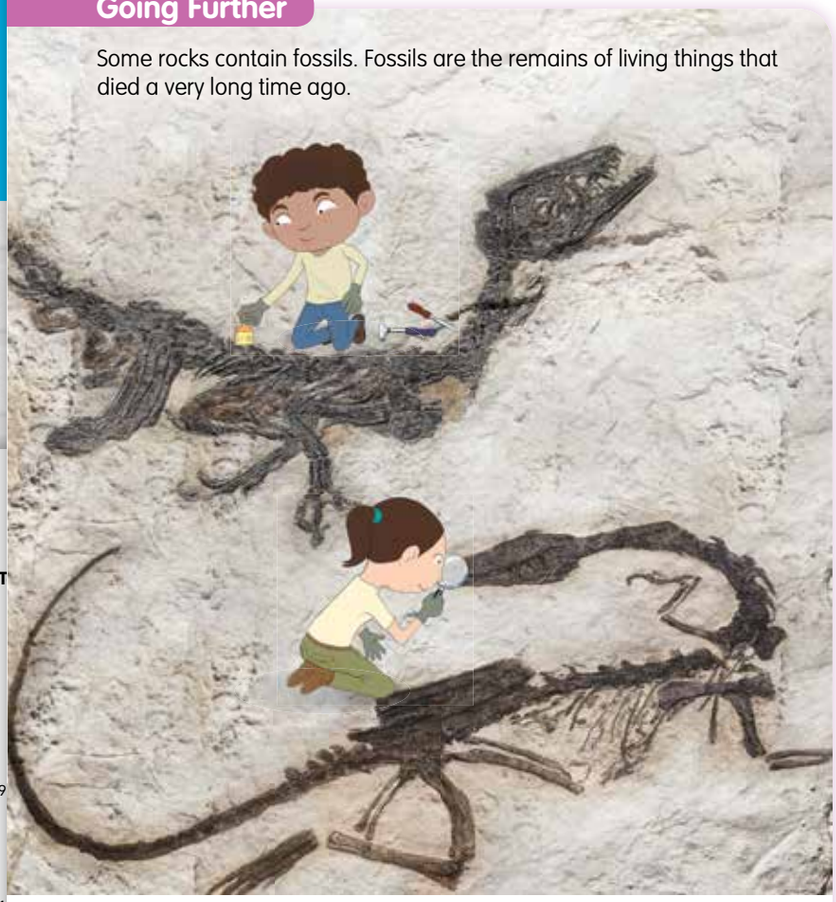
Extend Learning Beyond the Syllabus

Pupils explore and discover expansive application of scientific concepts in various real-life examples, which is an effective way to stimulate their curiosity for science.

Learning is meaningful with concepts applied **in real-life contexts** and **misconceptions** highlighted in *Going Further*. The feature covers information beyond the syllabus to **pique pupils' curiosity**.

Going Further

Some rocks contain fossils. Fossils are the remains of living things that died a very long time ago.



Scientists studying dinosaur fossils

From these rocks, we can learn more about the living things that lived in the past. This is how scientists found out about dinosaurs!

Pupil's Book , Stage 2

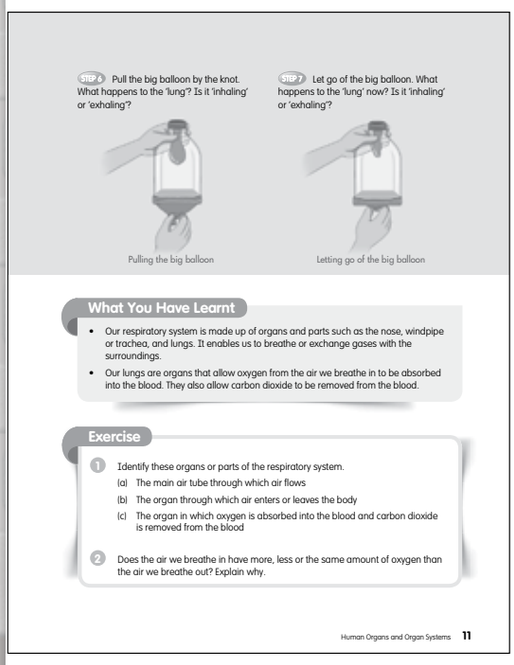
Skill(s)
- Inferring
- Communicating
- Identifying

Common misconception(s)
- The small balloon is inflated by blowing into it instead of pulling down the big balloon in Try This (Pupil's Book pp. 10–11).

Additional support

For learners needing more support:
- Help pupils make the model of a lung. Alternatively, make the model to demonstrate steps 6 and 7 in Try This (Pupil's Book pp. 10–11).

For advanced learners:
- Get pupils to read up on one disease that affects the lungs or respiratory system. Have them find out its cause(s), symptoms and treatment(s). Ask them to share their findings with the class.



2 The air we breathe in has more oxygen than the air we breathe out. This is because our body uses up oxygen to release energy from food.)
(Formative assessment, reinforcement; Skills: Inferring, communicating, identifying)

12. Carry out the **Additional activity** if time permits.

Additional activity
- Material(s): Leaflets on lung diseases or diseases caused by smoking per pupil (optional)

  Let pupils collect leaflets from clinics, hospitals or health education centres on lung diseases or diseases caused by smoking. Have them share the information in the leaflets with the class.

More ideas for pupils' enrichment are shared in *Additional activity*, which also provides opportunities for teachers to extend their lessons, if time permits.

Spark Interest in Science

Colourful illustrations and mascots make science concepts less intimidating and more fun. When pupils are engaged in learning the content, they ignite their intellectual curiosity about science.

New concepts are introduced in chapter openers using **rich visuals and text**.

1 Ourselves

In this chapter, you will learn to

- recognise and name the different parts of the body
- investigate how senses help humans and animals to be aware of the world around them
- recognise how humans are similar to and different from one another

Mascots (Owen, Lily, Aishah, Tom and Raj) are there to help guide the pupils and **make learning more fun!**

About This Book

Marshall Cavendish SCIENCE is specially written to help you learn science, and use the knowledge and skills to find out more about the world around you.

Learning science can be fun and enjoyable. This is especially when you have friends to help you along the way.

Meet Raj, Lily, Owen, Tom and Aishah.

Make Learning Science Relevant and Applicable to Everyday Life

Pupils can focus on learning scientific concepts and their application, without having to understand contexts that may be foreign to them. Age-appropriate language is used to ensure that pupils can grasp the concepts easier and faster.

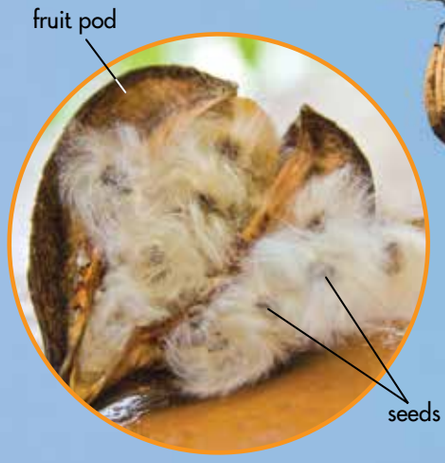
The seeds of the rubber tree are dispersed by explosion of the fruit.

The seeds of the balsam plant are dispersed by explosion of the fruit.

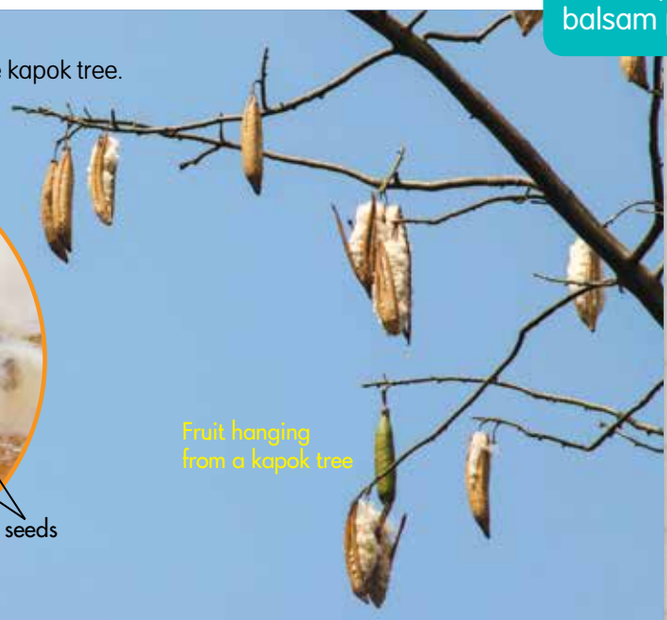
References are made to **native plants** (eg: rubber tree, kapok tree & balsam plant).

Try This

Observe the fruit and seeds of the kapok tree.



Kapok fruit



Fruit hanging from a kapok tree

How do you think kapok seeds are dispersed? Discuss in pairs.

Worksheet 6, pages 48–49
Worksheet 7, pages 50–51

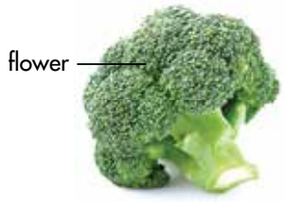
Pupil's Book, Stage 1

References are made to **local vegetables**.

Going Further

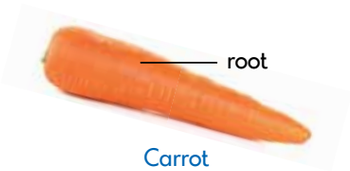
The vegetables we eat are different parts of plants.

Lettuce

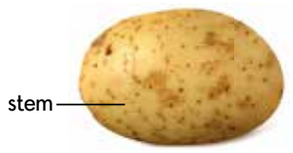


Broccoli

French beans



Carrot



Potato

Spinach

What You Have Learnt

- Plants have leaves, stems and roots.
- Some plants also have flowers and fruit.

Pupil's Book, Stage 1

Going Further

People around the world use lights for different celebrations. Which of these do you take part in?

References are made to **local festivals**.

Pupil's Book, Stage 2

Save Lesson Preparation Time and Reduce Teachers' Workload

There is ample support and resources for teachers, so that they can focus on refining their lessons and less on preparing them.

56 Chapter 3

3 Growing Plants

Scheme of Work

Suggested time frame: 15 periods (1 period is approximately 40 minutes.)

Teaching and Learning Sequence	No. of Periods	Framework Code(s) and Learning Objective(s)*	Learning Outcome(s)	Vocabulary	Resources and Material(s)
Introduction A. What Are the Different Parts of a Plant?	5	• **1Bp4:** Name the major parts of a plant, looking at real plants and models.	• Name the different parts of a plant.	• leaves • stems • roots • flowers • fruit • trunk	• **Pupil's Book**, pp. 52–60 • **Activity Book**, WS 1–2, pp. 32–36 • **Teacher's Guide**, pp. 58–66 • 1 sketchpad per pupil • 2 different kinds of leaves per pupil
B. How Do Seeds Grow into Plants?	5	• **1Bp6:** Explore how seeds grow into flowering plants.	• Investigat into plant		

*As reflected in the Cambridge Primary Science curriculum framework

92 Chapter 4

4 Flowering Plants

Scheme of Work

Suggested time frame: 13 periods (1 period is approximately 40 minutes.)

Teaching and Learning Sequence	No. of Periods	Framework Code(s) and Learning Objective(s)*	Learning Outcome(s)	Vocabulary	Resources and Material(s)
Introduction A. What Are the Parts of a Plant?	5	• **3Bp1:** Know that plants have roots, leaves, stems and flowers. • **3Bp3:** Know that water is taken in through the roots and transported through the stem. • **3Bp4:** Know that plants need healthy roots, leaves and stems to grow well.	• Recognise that plants have parts such as leaves, flowers, stems and roots. • Recognise that roots take in water and stems transport water. • Recognise that the leaves, stems and roots of plants need to be healthy in order for plants to grow well.	• plants • leaves • flowering plants • flowers • roots • stems • healthy • grow • unhealthy	• **Pupil's Book**, pp. 84–97 • **Activity Book**, WS 1–3, pp. 46–49 • **Teacher's Guide**, pp. 94–107 • Different types of leaves or pictures of them per group • 1 set of coloured markers per group • 1 bottle of glue or 1 roll of sticky tape per group • 1 sheet of cardboard per group • 1 bottle of food colouring per group • 1 dropper per group • 1 medium-sized glass or plastic container per group • Water • 1 white flower per group

Topics are **introduced and built upon concepts** that are taught and mastered previously, with a chapter-by-chapter overview shown in the *Scheme of Work* for teachers.

54 Chapter 3

3 Reproduction in Flowering Plants

Scheme of Work

Suggested time frame: 20 periods (1 period is approximately 40 minutes.)

Teaching and Learning Sequence	No. of Periods	Framework Code(s) and Learning Objective(s)*	Learning Outcome(s)	Vocabulary	Resources and Material(s)
Introduction A. Why Do Plants Produce Flowers?	4	• **5Bp2:** Know that plants reproduce. • **5Bp6:** Observe that plants produce flowers which have male and female organs; seeds are formed when pollen from the male organ fertilises the ovum (female). • **5Bp7:** Recognise that flowering plants have a life cycle including pollination, fertilisation, seed production, seed dispersal and germination.	• Recognise that plants reproduce. • Recognise that flowering plants produce flowers with male and female parts. • Recognise the processes of pollination, fertilisation, seed production, seed dispersal and germination involved in the reproduction of flowering plants.	• flowering plants • reproduce • flowers • male • stamen • petals • anther • pollen grains • filament • female • pistil • stigma • style • ovary • ovule • egg • ovum	• **Pupil's Book**, pp. 48–56 • **Activity Book**, WS 1–2, pp. 34–38 • **Teacher's Guide**, pp. 60–68 • Different kinds of flowers per class • 3 kinds of flowers per group • 1 magnifying glass per group • Different kinds of flowers, each with the male and female parts within the same flower, per class • 1 magnifying glass per class • 1 flower with large petals, and male and female parts (such as lily, hibiscus and peacock flowers) per group

*As reflected in the Cambridge Primary Science curriculum framework

Teacher's Guide, Stages 1, 3 & 5

Suggested answers to *Exercise* questions in the Pupil's Book are provided to help teachers conduct **formative assessments**.

Teaching ideas

17. Summarise this section using What You Have Learnt (Pupil's Book p. 100).
18. **Exercise**

    Wrap up by going through the questions in Exercise (Pupil's Book p. 100).

    (Answers:

    1. The sunflower is wilting because it is not taking in enough water. It can be watered to make it grow well again.
    2. The grass under the shade of the tree does not get enough sunlight to make food.)

(Formative assessment, reinforcement; Skills: Observing, inferring, generating, communicating)

Skill(s)

- Observing
- Inferring
- Generating
- Communicating

Additional support

For learners needing more support:

- Provide pupils with the answers but replace some words with blanks for the questions in Exercise (Pupil's Book p. 100). Let pupils fill in the blanks.

D What Is Beyond the Solar System?

Number of periods: 6

Teachers can **address concepts that commonly confuse** pupils through information provided in *Common misconception(s)*.

Key scientific terms that pupils need to learn are shown in *Vocabulary*.

Teaching ideas

1. Begin by showing pupils the picture of the children looking at the sky on Pupil's Book p. 140. **Ask: Have you ever wondered what is beyond the Solar System?** (Answer: Answer varies.) *(Trigger question)*
2. Explain the terms 'universe', 'galaxy' and 'Milky Way'.
3. Show pupils the picture on Pupil's Book p. 140 to help pupils develop the sense of wonder and awe that the universe is very large and human beings are very tiny in comparison.
   - ***Note:*** The universe is all of space and everything in it.
4. **Ask: Do you think there might be planets that can support life just like the Earth?** (Answer: Answer varies.) *(Skills: Inferring, communicating)*

Learning outcome(s)

- Research the life and discoveries of scientists who explored the Solar System and stars.

Skill(s)

- Inferring
- Communicating

Common misconception(s)

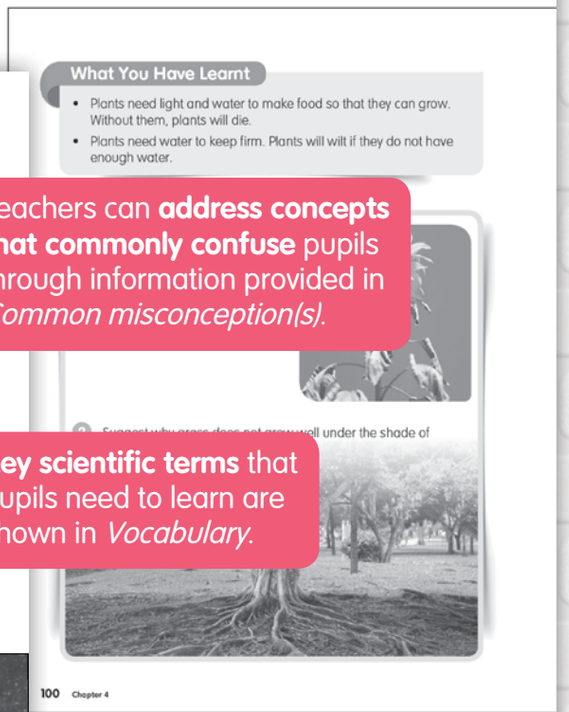
- The Earth is the centre of the universe.
- Stars appear in the same position in the sky every night.

Vocabulary

- galaxy
- Milky Way
- discoveries
- space race
- space probes

Easy-to-follow, detailed **lesson ideas and suggestions** are provided in *Teaching ideas*.

For **quick referencing during lesson planning**, teaching ideas and the relevant page from the Pupil's Book are placed on the same page in a wraparound format.



160 Chapter 6

Cater to Different Learning Needs

Teachers can increase their effectiveness in meeting the learning needs of pupils with varying abilities through the differentiated instructions provided. This ensures that learners who need more support and advanced learners are both engaged in class.

Teaching ideas

11. Summarise this section using What You Have Learnt (Pupil's Book p. 8).
12. **Exercise**

    Wrap up by going through the questions in Exercise (Pupil's Book p. 8).

    (Answers:

    1 Respiratory system: lungs, nose
    Blood circulatory system: heart
    Digestive system: gullet, small intestine, large intestine, liver, stomach
    Excretory system: bladder, kidneys
    Nervous system: brain

    2 (a) Blood circulatory system

    (b) Excretory system)

(Formative assessment, reinforcement; Skills: Classifying, identifying, inferring, communicating)

Skill(s)

- Classifying
- Identifying
- Inferring
- Communicating

Additional support

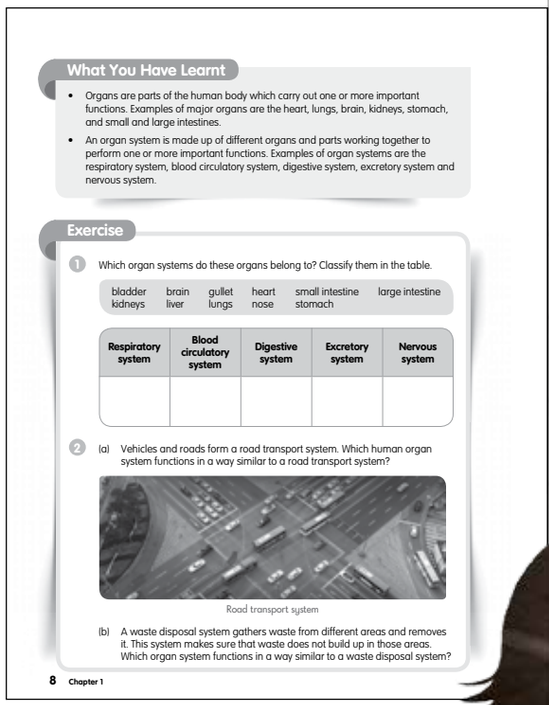
For learners needing more support:

- Ask pupils what the functions of the road transport and waste disposal system are, then lead them to the answers for question 2 in Exercise (Pupil's Book p. 8).

For advanced learners:

- Get pupils to find out the other organ systems besides the ones they have learnt.

Teachers are provided with **lesson differentiation suggestions** in *Additional support.*



What You Have Learnt

- Organs are parts of the human body which carry out one or more important functions. Examples of major organs are the heart, lungs, brain, kidneys, stomach, and small and large intestines.
- An organ system is made up of different organs and parts working together to perform one or more important functions. Examples of organ systems are the respiratory system, blood circulatory system, digestive system, excretory system and nervous system.

Exercise

1 Which organ systems do these organs belong to? Classify them in the table.

bladder, brain, gullet, heart, small intestine, large intestine, kidneys, liver, lungs, nose, stomach

Respiratory system	Blood circulatory system	Digestive system	Excretory system	Nervous system

2 (a) Vehicles and roads form a road transport system. Which human organ system functions in a way similar to a road transport system?

Road transport system

(b) A waste disposal system gathers waste from different areas and removes it. This system makes sure that waste does not build up in those areas. Which organ system functions in a way similar to a waste disposal system?

8 Chapter 1

Schemes of Work*

Stage 1

Sections in the Chapter	Learning Outcome(s) in the Chapter
Chapter 1 Ourselves	
A. What Are the Different Parts of the Body? **B.** What Are Senses? **C.** In What Ways Are We Similar and Different?	• Recognise and name the different parts of the body. • Investigate how senses help humans and animals to be aware of the world around them. • Recognise how humans are similar to and different from one another.
Chapter 2 Living and Growing	
A. What Are Living and Non-living Things? **B.** Where Do Animals and Plants Live? **C.** Do Animals Need Food? **D.** Can Animals Have Young? Can They Grow?	• Recognise that animals and plants are living things. • Recognise that there are living things and non-living things. • Investigate where different animals and plants live. • Recognise the need for water and the right amount and types of food. • Recognise that humans and other animals have young which grow into adults.
Chapter 3 Growing Plants	
A. What Are the Different Parts of a Plant? **B.** How Do Seeds Grow into Plants? **C.** What Do Plants Need to Grow?	• Name the different parts of a plant. • Investigate how seeds grow into plants. • Recognise that plants need light and water to grow.
Chapter 4 What Is It Made Of?	
A. What Are Materials? **B.** What Properties Do Materials Have? **C.** In What Ways Can We Classify Things?	• Use senses to explore and talk about different materials. • Recognise and name some common materials. • Identify the properties of materials. • Sort things into groups based on the properties of their materials.
Chapter 5 Pushes and Pulls	
A. In What Ways Do Things Move? **B.** What Is a Push or a Pull? **C.** What Can Pushes and Pulls Do?	• Investigate the movement of living and non-living things. • Recognise that pushes and pulls are forces. • Recognise that forces can make things start or stop moving, move faster or slower, and change direction.
Chapter 6 Making Sounds	
A. What Are Some Sounds Around Us? **B.** Why Do We Hear Sounds?	• Identify sources of sound. • Recognise that we hear sounds when they enter our ears. • Recognise that as a sound moves away from its source, it gets softer.

Stage 2

Sections in the Chapter	Learning Outcome(s) in the Chapter
Chapter 1 Light and Dark	
A. What Are Light Sources? **B.** What Is Darkness? **C.** How Are Shadows Formed?	• Identify different sources of light such as the Sun. • Recognise that there is total darkness when there is no light. • Identify shadows.
Chapter 2 Rocks and Other Materials	
A. What Are Rocks? **B.** What Is Soil? **C.** What Are the Uses of Rocks? **D.** What Are Natural and Man-made Materials?	• Recognise some types of rocks. • Recognise what soil is. • Recognise the uses of rocks. • Recognise that some materials are natural while others are man-made.
Chapter 3 Changes	
A. How Can Things Change Their Shape? **B.** How Can Things Change When Heated or Cooled? **C.** How Can Solids Change When Mixed With Water?	• Recognise how some things can change their shape by bending, squashing, stretching and twisting. • Investigate and describe how some things change when heated or cooled. • Recognise that some solids can dissolve in water.
Chapter 4 Day and Night	
A. Why Is There Day and Night? **B.** Does the Sun Move Across the Sky? **C.** How Do Shadows Change?	• Model how the spinning of the Earth causes day and night. • Investigate how the Sun appears to move across the sky during the day. • Investigate how shadows change during the day.
Chapter 5 Living Things and Their Environments	
A. Where Can You Find Animals and Plants? **B.** What Can We Do to Care for Our Environment? **C.** What Is Weather?	• Compare some environments and recognise how they affect the animals and plants living there. • Recognise ways to care for the environment. • Observe weather and record observations in a report.
Chapter 6 Electricity	
A. What Can Electricity Do? **B.** What Is a Circuit? **C.** What Is a Switch Used For?	• Recognise the uses of electricity and how to use electricity safely. • Recognise the parts of a simple circuit. • Use a switch to open or close a circuit.

*Please visit http://www.cambridgeinternational.org/ to see how the learning outcomes correlate to the Cambridge Primary Science Curriculum framework.

Stage 3

Sections in the Chapter	Learning Outcome(s) in the Chapter
Chapter 1 Living Things	
A. What Do Living Things Need? **B.** What Can Living Things Do? **C.** What Kinds of Living Things Are There? **D.** What Kinds of Animals Are There?	• Recognise what living things need. • Describe how living things and non-living things are different. • Recognise what living things can do. • Classify living things and explain why they are classified that way.
Chapter 2 Our Senses	
A. What Are the Ways We Use Our Sense of Sight? **B.** What Are the Ways We Use Our Sense of Hearing? **C.** What Are the Ways We Use Our Sense of Touch? **D.** What Are the Ways We Use Our Sense of Smell? **E.** What Are the Ways We Use Our Sense of Taste?	• Investigate our sense of sight and the ways we use it to learn about the world. • Investigate our sense of hearing and the ways we use it to learn about the world. • Investigate our sense of touch and the ways we use it to learn about the world. • Investigate our sense of smell and the ways we use it to learn about the world. • Investigate our sense of taste and the ways we use it to learn about the world.
Chapter 3 Keeping Healthy	
A. Why Do We Need Food? **B.** How Can We Eat to Keep Healthy? **C.** What Other Ways Can We Keep Healthy?	• Recognise what living things need. • Investigate the type of diet needed for us to keep healthy. • Recognise that some food can be unhealthy. • Investigate the types of exercise needed for us to keep healthy.
Chapter 4 Flowering Plants	
A. What Are the Parts of a Plant? **B.** Do Plants Need Light and Water? **C.** Does Temperature Affect How Plants Grow?	• Recognise that plants have parts such as leaves, flowers, stems and roots. • Recognise that roots take in water and stems transport water. • Recognise that the leaves, stems and roots of plants need to be healthy in order for plants to grow well. • State that plants need light or water to grow as the reason for observations. • Recognise that temperature affects how well plants grow.

Sections in the Chapter	Learning Outcome(s) in the Chapter
Chapter 5 Materials	
A. What Are the Different Materials and Their Properties? **B.** How Can We Classify Materials? **C.** What Are the Uses of Materials?	• Recognise that each material has its own properties. • Find out about magnetic and non-magnetic materials. • Classify materials based on their properties. • Discuss how the properties of a material make it suitable for certain uses.
Chapter 6 Forces	
A. What Can Forces Do? **B.** How Can We Measure Forces? **C.** What Are the Effects of Friction?	• Recognise that a force is a push or a pull. • Investigate how a force can make a thing move or stop moving. • Investigate how a force can make a thing go faster or slower, or change its direction. • Investigate how a force can affect the shape of a thing. • Recognise that a forcemeter can be used to measure forces. • Investigate how friction can make a thing go slower.

Stage 4

Sections in the Chapter	Learning Outcome(s) in the Chapter
Chapter 1 Solids, Liquids and Gases	
A. What Is Matter? **B.** What Are the States of Matter? **C.** Can Matter Change in State?	• Recognise that matter has mass and occupies space. • Recognise that solid, liquid and gas are three states of matter. • Investigate how substances can change in state when they gain or lose heat. • Observe and recognise these changes in state — melting, boiling, condensation and freezing. • Recognise that freezing is the reverse of melting.
Chapter 2 Skeleton and Muscles	
A. What Is a Skeleton? **B.** How Do the Skeleton and Muscles Work Together? **C.** What Are Drugs and Medicines?	• Recognise that humans and some animals have bony skeletons inside their bodies. • Recognise that the skeleton supports and protects the body. • Recognise that our bones grow as we grow. • Recognise that animals with skeletons have muscles that are joined to their bones. • Describe how the skeleton and muscles work together to allow us to move. • Explain that some drugs are used as medicines.

Sections in the Chapter	Learning Outcome(s) in the Chapter
Chapter 3 Habitats and Environments	
A. What Is a Habitat? **B.** In What Ways Are Animals Suited or Adapted to Their Environments? **C.** What Is an Identification Key? **D.** In What Ways Do Human Activities Affect the Environment?	• Investigate the variety of animals and plants found in different habitats. • Recognise the ways animals are suited or adapted to the environment in which they live. • Use simple identification keys to identify or classify animals. • Recognise some ways that human activities affect the environment.
Chapter 4 How Magnets Work	
A. What Is a Magnet? **B.** What Are the Properties of a Magnet? **C.** What Are Some Uses of Magnets?	• Recognise that magnets can attract some metals but not others. • Recognise that magnets can attract or repel each other. • Explain the magnetic force of attraction and repulsion between magnets. • Recognise that magnets can attract some metals but not others.
Chapter 5 Electric Circuits	
A. How Does an Electric Circuit Work? **B.** How Do Electrical Components Affect an Electric Circuit? **C.** Can We Connect Buzzers and Simple Motors in an Electric Circuit? **D.** In What Ways Can We Use Electricity Safely?	• Set up electric circuits using electrical components such as cells or batteries, lamps or bulbs, wires and switches. • Recognise that electric current flows and this can be described with the use of models. • Investigate whether an electrical device will be able to work if there is a break in its electric circuit. • Recognise how to use electricity safely.
Chapter 6 Sound	
A. How Are Sounds Made? **B.** How Do Sounds Travel? **C.** Why Are Some Sounds Soft and Some Sounds Loud? **D.** What Can We Do to Keep Out Sounds? **E.** Why Do Sounds Have Different Pitches?	• Investigate how sounds are made when things or air vibrate. • Investigate how sound travels through air, liquids and solids to the ears. • Measure sound levels in decibels with a sound-level meter. • Investigate how some materials help prevent sound from travelling through them. • Investigate sounds with high and low pitches and how pitch can be changed in musical instruments. • Differentiate between loudness and pitch.

Stage 5

Sections in the Chapter	Learning Outcome(s) in the Chapter
Chapter 1 Solids, Liquids and Gases	
A. What Are Boiling and Melting? **B.** What Is Evaporation? **C.** What Is Condensation? **D.** What Is the Water Cycle?	• Recognise that the boiling point of water is 100°C and the melting point of ice is 0°C. • Recognise that evaporation is the process of a liquid changing into a gas. • Recognise that a solid is obtained when a liquid evaporates from a solution. • Recognise that condensation is the process of a gas changing into a liquid and that it is the reverse of evaporation. • Recognise that there is water vapour in the air and that water vapour may condense when it comes into contact with a cold surface.
Chapter 2 Investigating Plant Growth	
A. What Do Seeds Need to Germinate? **B.** What Do Plants Need to Grow?	• Find out how water and warmth, and not necessarily light, are needed for seeds to germinate. • Recognise that plants need light energy to grow.
Chapter 3 Reproduction in Flowering Plants	
A. Why Do Plants Produce Flowers? **B.** What Is Pollination? **C.** What Is Fertilisation? **D.** What Is Seed Dispersal? **E.** What Happens in the Life Cycle of a Flowering Plant?	• Recognise that plants reproduce. • Recognise that flowering plants produce flowers with male and female parts. • Recognise the processes of pollination, fertilisation, seed production, seed dispersal and germination involved in the reproduction of flowering plants. • Recognise that the flowers of some plants are pollinated by insects. • Recognise that seeds are formed after fertilisation takes place. • Recognise the various ways in which seeds can be dispersed. • Observe that flowering plants have life cycles.
Chapter 4 The Way We See Things	
A. What Is Light? **B.** What Is Reflection of Light?	• Recognise that we see a light source because its light enters our eyes. • Recognise that we can measure light intensity. • Recognise that a surface can reflect light. • Investigate why a beam of light changes direction when it is reflected from a surface. • Recognise that we can see an object that does not give off light because it reflects light into our eyes.

Stage 6

Sections in the Chapter	Learning Outcome(s) in the Chapter
Chapter 5 Shadows	
A. Do All Materials Allow Light to Pass Through Them? **B.** How Are Shadows Formed? **C.** How Do Shadows Change?	• Investigate how opaque materials do not allow any light to pass through them, while transparent materials allow most of the light to pass through them. • Observe that shadows are formed when light is blocked. • Observe that the lengths and positions of shadows change throughout the day. • Investigate how the position of an object affects the size of its shadow.
Chapter 6 The Earth and Beyond	
A. What Does the Earth's Spinning Cause? **B.** Does the Earth Move Around the Sun? **C.** What Makes Up the Solar System? **D.** What Is Beyond the Solar System?	• Investigate through modelling that the Sun's apparent movement is caused by the Earth spinning on its axis. • Recognise that the Earth takes 24 hours to spin once on its axis. • Recognise that the Earth takes one year to orbit the Sun, while constantly spinning. • Research the life and discoveries of scientists who explored the Solar System and stars.

Sections in the Chapter	Learning Outcome(s) in the Chapter
Chapter 1 Organs and Organ Systems	
A. What Are Some Organs and Organ Systems? **B.** What Does Our Respiratory System Do? **C.** What Does Our Blood Circulatory System Do? **D.** What Does Our Digestive System Do? **E.** What Does Our Excretory System Do? **F.** What Does Our Nervous System Do?	• Use scientific names for some major organs in the body. • Identify the position of major organs in the body. • Describe the main functions of major organs in the body. • Explain how the functions of major organs in the body are essential.
Chapter 2 More About Changes	
A. How Can Solids Be Mixed and Separated? **B.** How Do Solids Change When Mixed With Water? **C.** What Are Solutions? **D.** What Are Reversible and Irreversible Changes?	• Investigate how solids can be mixed and separated. • Observe, describe, record and explain changes that occur when some solids are mixed with water. • Investigate how solids that do not dissolve or react with water can be separated by sieving or filtration. • Investigate how some solids dissolve in water to form solutions, and recognise that they are still present, although they cannot be seen in the solutions. • Distinguish between reversible and irreversible changes.

Sections in the Chapter	Learning Outcome(s) in the Chapter
Chapter 3 Food Chains	
A. What Are the Relationships Between Living Things in a Habitat? **B.** What Are Some Food Chains in Different Habitats?	• Recognise how food chains can be used to represent feeding relationships in a habitat. • Recognise that many food chains begin with a plant which uses energy from the Sun. • Recognise the terms 'producer', 'consumer', 'predator' and 'prey'. • Investigate and construct food chains in a particular habitat.
Chapter 4 Caring for the Environment	
A. What Are the Positive Effects of Some Human Activities on the Environment? **B.** What Are the Negative Effects of Some Human Activities on the Environment? **C.** What Can We Do to Care for the Environment?	• Investigate the positive effects of human activities on the environment. • Investigate the negative effects of human activities on the environment. • Investigate some ways of caring for the environment.
Chapter 5 More About Electricity	
A. What Are Electrical Conductors and Insulators? **B.** How Can We Draw Electric Circuits? **C.** How Do Changes Affect Electric Circuits?	• Investigate the ways some materials are better electrical conductors than others. • Investigate the ways some metals are good electrical conductors and that most other materials are not. • Recognise why metals are used for cables and wires, and why plastics are used to cover wires, plugs and switches. • Represent series circuits with drawings and circuit symbols. • Predict and test the effects of changes to electric circuits, including the change in the number and type of electrical components, and the length or thickness of a wire.
Chapter 6 More About Forces	
A. What Is Gravitational Force? **B.** How Do Forces Act? **C.** What Are the Effects of Friction	• Distinguish between mass measured in kilogram (kg) and weight measured in newton (N), noting that kilogram is used in everyday life. • Recognise and use units of force, mass and weight, and identify the direction in which forces act. • Recognise the concept of energy in movement. • Recognise friction, including air resistance, as a force which can affect the speed of a moving object and sometimes stop a moving object.