

Cambridge
Primary
**International
English**

Science

2nd Edition

Mathematics

2nd Edition

Brochures





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Cambridge Primary
International English
website!

MCE Cambridge Primary International English

Brochure



Beyond Basics, Reimagine Education

We are working with Cambridge Assessment International Education towards endorsement of this series.

Marshall Cavendish Education Cambridge Primary International English

The Marshall Cavendish Education (MCE) Cambridge Primary International English series is aligned to the new Cambridge Primary English as a Second Language curriculum framework (0057). The series combines tried-and-tested methodologies alongside more recent practices, placing stories at the heart of the learning.

The stories and texts spark learner’s curiosity, reduce learning anxiety, motivate learners to learn, provide context for their learning and ensure that language practice is meaningful. The many stories and non-fiction texts in the series are supported by rich visuals, to captivate learner’s interest and to support understanding.

The series follows an active learning approach, with plentiful opportunities for singing, rhymes, role play and projects. The series includes a range of supporting resources customisable for both online and face-to-face learning, to consistently deliver outstanding learning and teaching experiences.

Product Architecture

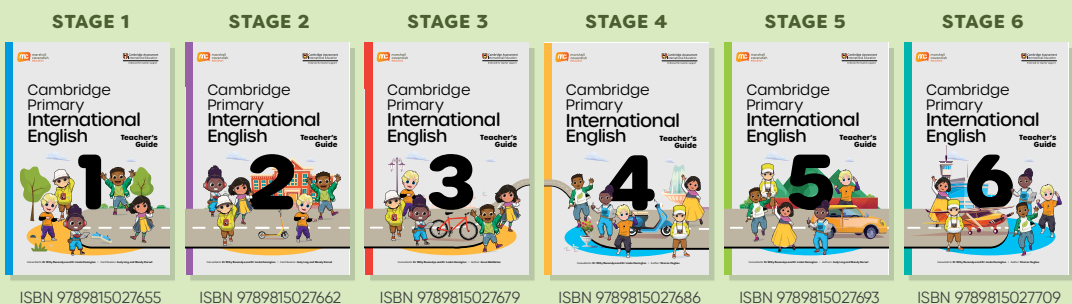
STUDENT'S BOOK



ACTIVITY BOOK



TEACHER'S GUIDE



ADDITIONAL DIGITAL RESOURCES*

o Student's Book

- Annotatable Enhanced eBooks (with animated stories/texts, songs, rhymes and other listening resources)

o Activity Book

- Annotatable eBooks

o Digital Teacher's Guide (Editable)

- Games Bank for warm-up/cool down
- Photocopiable Blackline Masters to support extra activities
- Quizzes for ongoing formative assessment

**These resources will not go through the Cambridge International endorsement process.*

Why choose MCE Cambridge Primary International English?



- Adopts an active approach, with language input coming through stories, texts, songs, and rhymes to keep learners motivated and fully engaged
- Provides plentiful, contextualised, and meaningful practice of vocabulary, grammar, and language skills
- Incorporates Social and Emotional Learning (SEL) and values with opportunities for learners to reflect, give opinions and preferences, and share ideas or experiences
- Supports teachers extensively with a digital suite and a wide range of resources to support hybrid learning, and with embedded professional development in the Teacher's Guide
- Contains Marker Recognition Technology embedded within the series

Adopts an Active Approach, with Language Input Through Stories, Texts, Songs, and Rhymes to Keep Learners Motivated and Fully Engaged

In the series, each unit has three parts (A, B, C) which look at a different aspect of the theme. There are five lessons in each part. Lesson 1 introduces the theme and the language focus through a highly illustrated 'input text'. This input text can be a story, non-fiction text, song, poem, or rhyme.

For maximum visual appeal, the text is given plenty of space – covering 2 to 3 pages. This is unique to the MCE Cambridge Primary International English series. Some of these Lesson 1 texts are also offered as an animation, providing additional enjoyment and an opportunity for multi-modal input.



MCE Cambridge Primary International English
Student's Book Stage 2

Clear Context

With new language presented within a clear context of a story or text, the learner has a **more meaningful** and **effective learning experience**.



Part 5C Designing clothes

Let's learn about possessive pronouns.

Lesson 1: Listening and reading

- 1 Listen. Imagine what the uniforms look like. Then read and look at the pictures.



My school uniform design



Hello, I'm Millie. Look at this photo. I'm in my school uniform. I'm wearing a dark blue dress, a white shirt, white socks and black shoes. In the winter, we also wear blue coats and hats. My uniform is nice, but we want fun uniforms. So, my class is designing new ones!



MCE Cambridge Primary International English Student's Book Stage 2

Part 3B What are you doing?

Lesson 1: Listening and reading

Let's learn how to talk about what's happening now.

- 1 Say what you can see in the pictures.
- 2 Read and listen.



So, what can you see? What's happening?

MCE Cambridge Primary International English Student's Book Stage 3

Part 3C Playing games

Let's learn how to use question words.

Lesson 1: Listening and reading

- 1 What games do you like to play? Tell your partner.
- 2 Listen and read.



I Spy

How do you play 'I spy'?

To play this game you need two or more people. One person starts the game by saying "I spy with my little eye something beginning with..." and then they say the first letter of a thing.



The other players take turns to guess what the thing is. The winner is the person who guesses correctly. Then it's their turn.

MCE Cambridge Primary International English Student's Book Stage 3

Look and Feel

To cater to different learner's preferences and tastes, and to ensure maximum learner engagement, each input text in Lesson 1 is designed with a different look and feel, using a **wide variety of illustration styles** as well as **vivid photographs**. This rich variation **activates learners' curiosity**, keeps them engaged, and gives them a more natural and **authentic learning experience** which reflects the variety of visual input they see around them in real life.

Provides Plentiful, Contextualised and Meaningful Practice of Vocabulary, Grammar, and Language Skills

3 Answer the questions.

- a What are the three girls doing together?
- b How many children are reading?
- c What is the boy chasing?
- d How many boys are hiding?
- e How many children are playing a board game?
- f How many girls are there in the playground?

4 Read 'What are they doing?' again. Find and say the words that end in -ing.

What words do you see before these words that end in -ing?



5 Mime an activity from the story for your partner to guess. Take turns.



6 Read and listen to 'What are they doing?' again. Mime the activities as you hear them.

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Discussion of Text

The input text is followed by a **discussion about its meaning, scaffolded through comprehension questions** and by **building understanding** through role play or by retelling the story.

Presentation and practice of language is therefore both contextualised and meaningful.

Whole-Part-Whole Model

After listening to the whole story or text in Lesson 1, the focus of Lessons 2, 3 and 4 is on the parts of language from the Lesson 1 text (i.e., vocabulary, grammar), as well as building the language skills. As **learners' understanding of vocabulary and grammar increase**, they will return to the whole text two or three times a week.

This **Whole-Part-Whole** model enables the learning to be contextualised and meaningful.

Lesson 2: Listening and vocabulary

1 Listen, point and say. What clothes are not in the picture?



2 Who is it? Look, listen and say.



Dan



Kim



Rick



Aisha



Tom



Abby and Luke

3 What are you wearing? Ask and answer.

4 Read 'My sock!' again. What clothes are in it?

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Lesson 3: Use of English

1 Make up sentences about the pictures.



2 Pretend you're one of the children in the pictures. Make sentences.



3 Listen to your classmates. Guess who they are.

4 Read 'My school uniform design' again. Do these actions.

- clap when you read **this** or **these**
- tap when you read **one**
- snap your fingers when you read **mine**

Mascots

Practice is **active and communicative**. It is showcased on the page by the appealing mascots.

Revisiting Lesson 1

Learners revisit the Lesson 1 story or text in each of the subsequent lessons (2-5). This **reinforces understanding, builds confidence** and **motivation**.

The learning throughout the unit **relates back** to the input text in Lesson 1.



Lesson 4: Writing

1 Read 'Making clothes with colour' again. What questions does Josh ask when he starts a new design?

2 Design a new clothes item.

A Plan

- Decide what kind of clothes.
- Answer Josh's questions.

B Write

- Make a drawing of the clothes. Use colour and patterns.
- Look at 'My school uniform design' again. How does Millie talk about her designs?

This is my...
 It's (colour). It's got a... pattern.
 You can wear it at / in (place or weather).
 It's (your opinion: nice, great, warm, fun, ...).

Remember to use **and** when you are writing about more than one thing.



C Check

- Check your sentences.

D Complete

- Write a neat copy of your sentences. Add labels to your drawing.
- Practise presenting your design.

Incorporates Social and Emotional Learning (SEL) and Values with Opportunities for Learners to Reflect, Give Opinions and Preferences, and Share Ideas or Experiences

- Follow the rules.
- Don't cheat!
- Always try and win.
- Have fun!
- Try to get better.

Playing games together is good fun. What do you do when you play games?



Colours mean different things in different cultures. What do they mean in your country?



SEL Mascots

On the Student Book pages, the SEL mascots, Lara and Leo, share interesting and important information, and ask questions to start learners on their journey to becoming **global citizens**.

Learners become aware of their own culture and respect other cultures too. They have the opportunity for **reflection**, and for **sharing their own ideas and experiences**.

This series provides materials for young learners to learn the language and **inculcate life values**.

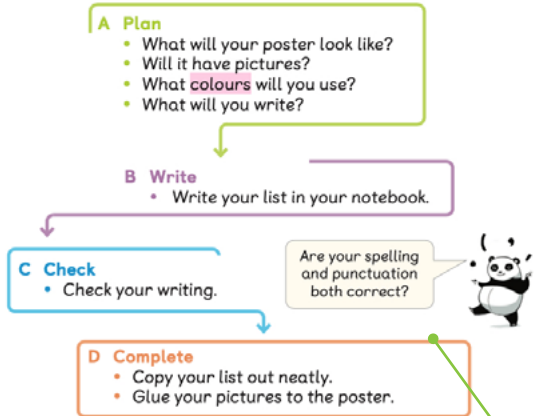


Lesson 4: Writing

1 What are your five favourite free-time activities? Read 'What are they doing?' again for some ideas.



2 Make a poster about your five favourite free-time activities.



Lesson 4: Writing

1 Read.

Why is it good to play games?

Playing is fun. It helps us to relax and unwind.

Playing teaches us how to win and how to be kind to the person who has not won. It teaches us how to accept losing in a good way.

Playing keeps our body and mind active.

2 Complete the chart about yourself.

Why I like to play	What I like to play
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
How playing makes me feel	What I learn from playing
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Lesson 2: Listening and vocabulary

1 Choose a game you like to play. Write some instructions.

Name of game: _____

Number of players: _____

Equipment: _____

What to do: _____

2 Swap your game instructions with your partner. Answer the questions about their game.

a What is the name of the game? _____

b How many players or teams are there? _____

c What equipment do you need? _____

d Play the game. Are the instructions clear? _____

e Say two things that are good about the instructions and one thing that you would change.

Personalised Learning

Activities are included which allow learners to express preferences, thereby *personalising their learning* and making it *more engaging and effective*.

5 Think about the story 'Victor and his bike'.

- a Retell the story.
- b Read the story again to check.
- c Are the sentences below true?
 - 😊 I understand new words.
 - 😐 I understand the story.
 - 😄 I enjoyed the story.



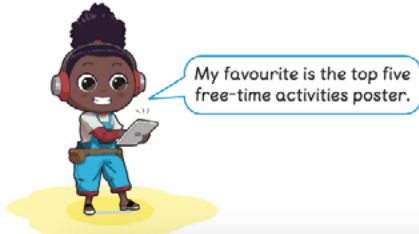
6 Read and say the poem 'Rules!' with your partner.

7 Think about the story 'What are they doing?'.

- a Say five things that are happening in the playground.
- b Read the text again to check.
- c Are the sentences below true?
 - 😊 I understand new words.
 - 😐 I understand the story.
 - 😄 I enjoyed the story.



8 Show and say. What's your favourite part of this unit?



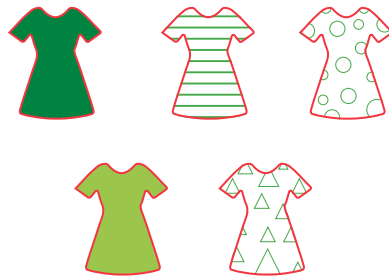
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Recap and Reflect

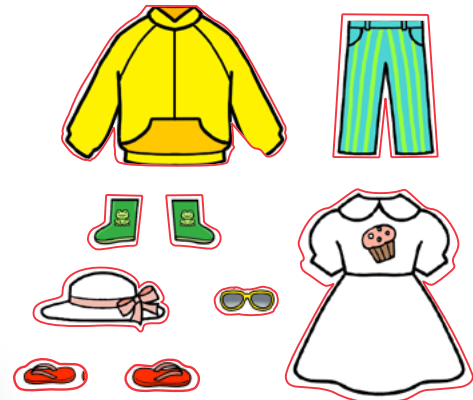
There are opportunities for learners to **recap and reflect** on their learning, as well as to give **opinions and preferences**.

This occurs in Lesson 5 ('Round up'), at the end of every unit part, or block of learning (i.e., usually the end of each week).

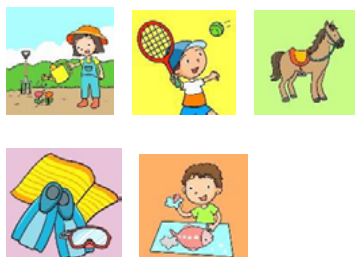
Page 67 Making clothes



Page 72 Designing clothes



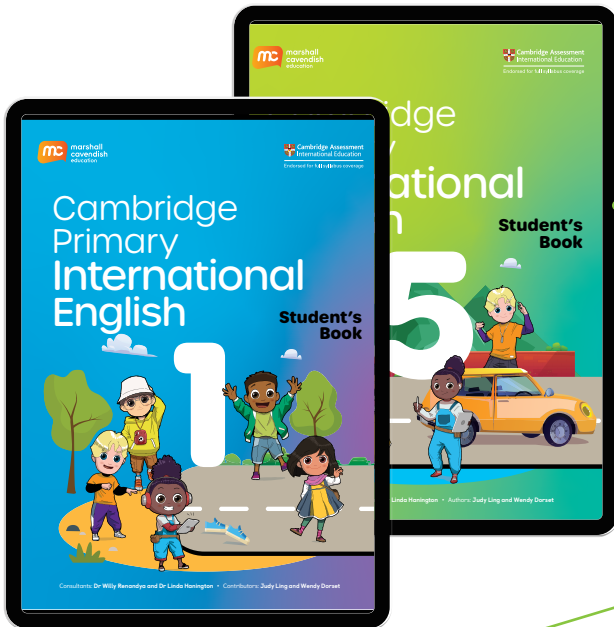
Page 41 What are you doing?



Stickers

Stickers **enhance enjoyment** and **allow for personalisation**.

Supports Teachers Extensively with a Digital Suite and Wide Range of Resources to Support Hybrid Learning, and with Embedded Professional Development in the Teacher's Guide



Annotatable eBooks

Our packages provide **print and digital*** Student Book and Activity Book to cater for both online and physical classroom.

Annotatable eBooks* are enhanced with links to digital content to support hybrid learning.

Lesson Notes

The clear, detailed, and easy-to-understand lesson notes contain scripted question prompts, ideas for **additional activities**, and **guidance on differentiation**.

Lesson 1 Listening and reading (SB pp97–100, AB p61)

Warm-up
Play 1 'spy' from the Games bank as a helpful review of nouns.

Lesson

Student's Book Q1 (2Lm.01, 2Ld.03, 2Ld.04, 2Sc.01, 2Rm.01, 2Rm.02, 2Rd.01, 2Rd.02, 2Rd.04)

Tell the learners about a time when you lost something. Say what it was, where you looked for it and where you found it. (Personalising a topic helps learners relate to it and understand it better.)

Say: *Have you lost something? Think of three things. Give learners some time to think. Say: Tell your partner. After they tell their partner, ask: Can anyone tell the class three things they lost?*

Say: *Open your book, please. Look at the pictures. What did the boy lose? (a sock)*

[62] Say: *Listen. Point at the words. Play track 62. Learners listen and follow along with their finger. Then play the track again and ask learners to read along.*

Track 62

(See Student's Book pages 97–99)

Student's Book Q2 (2Rd.02)

Read the questions one-by-one with the learners. Allow them to speak to their partner to check their answers. Then choose learners to tell the class the answers.

(Answers: a He is playing in a football match. Is red, a one sock, a cap/sunhat, drawer, under the bed, on the floor, a his sister)

Activity Book Q1 (2Ld.03, 2Ld.04, 2Uv.01) [62] Say: *Read and listen to the 'My sock' again. Which picture comes first? Write the number.*

(Answers: 3, 4, 5, 1, 2)

Activity Book Q2 (2Rm.02, 2Rd.02, 2Rd.04)

Say: *Who says it. Draw lines. When learners are finished, say: Look in the Student's Book. Find the sentences. Who says them? Are your answers correct?* (Answers: boy – My sock, my sock. I'm happy, happy, happy. Sister – What's up big brother? (But you're wearing your sock.)

Student's Book Q3 (2Sc.02, 2Ug.07)

Ask: *Did you like the poem? What kind of poem is it? List the adjectives in Q3, saying: Is it [sad]? before each one. Learners can nod or raise their hand if they think it's one of these words. Ask: Why do you think it's [sad]? (Answer: funny, silly, happy)*

Student's Book Q4 (2Rd.02)

Pair the learners. Assign each pair one of the words in Q3. Say: *How many are there? Look at the poem. Find and count them.*

(Answers: colours = 2, numbers = 2, characters = 2)

Student's Book Q5 (2Sc.04, 2Rd.01)

Say: *This is a poem. What's a poem? What does a poem have? (short lines, rhythm and often rhymes) Read the first verse again. Ask: Which words rhyme? (rules, school) Say: Look at the rest of the poem. What rhymes can you find?*

[62] Choose two verses of the poem and read them for the class or play track 62 again. Say: *It's your turn. Play the track or read again and have learners repeat. Play attention to the rhythm of the poem and encourage learners to read with expression.*

Student's Book Q6 (2Sc.01, 2Sc.02, 2Sc.01, 2Ug.02, 2Ug.07, 2Ug.06)

Say: *Repeat after me. Read the phrases as expressively as you can. Say: Have you heard these words before? When did you hear them? Who said them? Why? Ask: Do you say these words when someone is good or bad?*

Say: *Let's look at the story again. Can we add these phrases? When can you say them to the boy? Ask learners to think of something they are good at. Choose one or two learners to tell you. Phrase them using one of the phrases.*

Say: *Now it's your turn. Tell your partner. Your partner says one of these phrases. Point at the phrases in the book. Learners tell their partner something they can do, and their partner praises them. As an alternative, this can become a mingling activity. In a mingling activity, learners stand and move around the classroom. They find a partner, speak to them, then find a new partner.*

Wrap-up

Student's Book Q7 (SEL focus) (2Sc.01, 2Sc.02, 2Sc.01, 2Ug.02, 2Ug.07, 2Ug.06)

Say: *Look at the poem 'My sock' again. What did the boy lose? (a sock) Where did he find it? (in his boot)*

Was it easy to find it? (no) Why not? (his room is untidy)

Ask: *What about your room? Is it tidy? Who keeps your room tidy? Why should your room be tidy?*

Read Lana's speech bubble. Guide the discussion so learners suggest that they should keep their bedroom tidy and also their workspaces in school. Say: *If your desk is tidy you can easily find your things. We should take care of our possessions and those of other people.*

Say: *At the end of the school day, we put away our pens and pencils ready for the next day. What other things do we do to keep our classroom tidy? Take suggestions.*

Ask: *Is there anything more we can do? What about at home, what more could you do?*

Homework

Ask learners to learn one of the verses of the poem 'My sock'. Say that they will recite their verse (in groups) in Lesson 4.

Ensure that you allocate one verse per group of learners to memorise so that the whole poem can be recited.

School to home notes

Week 1

Dear Parent / Guardian
Welcome back to school! This term your child will continue their English journey. We will read, listen, speak and write on topics connected to school, community and the weather. We will talk about what it means to be a good learner and how to be part of a community. We hope that learners will be able to recognise the joy in learning English through songs, stories, drama, crafts and games. I hope you'll be able to join us and support your child learning English.

Week 2

Dear Parent / Guardian
This week your child will talk about school. Schools today are often quite different to schools when we were younger. Your child is probably interested to hear about what you did when you were at school. What's the same? What's changed? Vocabulary for this week: class, uniform, playground, floor, paint, teacher, backpack, breaktime, breakfast time, dream, classmate, lesson, classroom, pens.

Week 3

Dear Parent / Guardian
This week your child is talking about the subjects they study at school. Talk about school and school subjects with your child. What is your child's favourite subject? What was your favourite subject at school? Why did you like it? Vocabulary for this week: notebook, crayons, ruler, laptop, glitter, glue, computer, Maths, Science, Art, Music, Citizenship/Social Studies, TV, slide, football.

Week 4

Dear Parent / Guardian
This week we're still talking about school. We'll also review words for colours and we'll talk about our favourite subjects. We'll play some guessing games. Perhaps you could ask your child to show you the colour guessing game we'll play, and maybe play it with them. Vocabulary for this week: please, thank you, good, bad, same, different.

Week 5

Dear Parent / Guardian
This week your child will talk about their community in their English class. When you're out and about with your child, whether you're walking, on public transport or in a car, why don't you point out some of the places you pass? Vocabulary for this week: sports centre, park, fire station, police station, hospital, shop, library, supermarket, restaurant, cinema, mall, funny, sad, happy, pretend, real, glasses, cute.

School-to-Home Notes

Photocopiable week-by-week 'School-to-home notes' enables the **learning to be supported by family members** too.

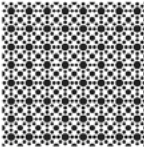
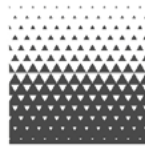
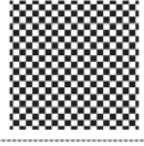




*These resources will not go through the Cambridge International endorsement process.

BLM 8: Days of the week

Monday	Tuesday
Wednesday	Thursday
Friday	Saturday
Sunday	

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BLM 36: Patterns

circles 	triangles 
squares 	stripes 
animals 	flowers 
zig zags 	

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Blackline Masters

Photocopiable Blackline Masters (BLMs) at the back of the Teacher's Guides can be used for making flashcards.

BLM 10: Story report

Title: _____

Who are the characters?

Where does the story happen?

When does the story happen?

Draw your favourite part of the story.

Story score ☆☆☆☆☆

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BLM 39: Respecting opinions

Do you think other people like Millie's uniform designs?

Look at the chart. What is other people's opinion of Millie's designs, do you think? What's yours?

	They need more work.	They're ok.	They look nice.	They're very good.	They're fantastic!
Teacher					
Mums and dads					
Millie's friends					
You					

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The BLMs also **include templates and writing frames** for general use, or with the Supplementary Lessons in the Teacher's Guide.

ADDITIONAL RESOURCES IN TEACHER'S GUIDE

- Start/End-of-term **Supplementary Lessons**, adding the flexibility to extend the programme across a longer school term
- **Games Bank** containing easy-to-use warm-ups/cool-downs for use at the start or end of the lesson
- **Quizzes** for ongoing formative assessment
- **Lyrics** of songs and rhymes
- **Strategies for Effective Teaching** to support ongoing professional development

The extensive amount of teacher support in the programme ensures that teachers can deliver a fun, playful and effective lesson, every time.

Marker Recognition Technology Embedded Within The Series*

The icon indicates where there is something to launch!

Unit 5 Clothes

Part 5A Our clothes

Lesson 1: Listening and Reading

1 Listen and read the poem.

Let's learn how to give simple personal information.

Marker Recognition Technology

*Marker Recognition Technology** enables learners to have a multi-modal learning experience, which makes learning more enjoyable, more memorable, and more motivating!

My sock!

The match day is here!
I'm playing for my school!
I'm captain of my team,
and we all know the rules.

Animations, stories, songs, rhymes and listening activities can all be launched directly from the page of the book via the **MCE Cambridge App***. Learners are now motivated to learn from home, even after the lesson is over!

*These resources will not go through the Cambridge International endorsement process.

Cambridge IGCSE™ English

as a Second Language

Grade 10 – 11 | Age 15 – 17

The **Marshall Cavendish Education Cambridge IGCSE™ English as a Second Language (2nd Edition)** Series is designed to support learners studying the full Cambridge IGCSE and IGCSE (9–1) English as a Second Language syllabuses (0510/0511/0991/0993) for examination from 2024.

The series focuses on building communicative competence and linking language to life. The units are carefully structured according to the various functions that we use language for, such as informing, explaining, persuading and giving opinions. By learning language in this way, students will build strong communication skills, based around real world contexts that they can relate to.



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Cambridge Primary
Science (2nd Edition)
website!

Cambridge Primary Science

2nd Edition

Brochure



Beyond Basics, Reimagine Education

Marshall Cavendish Education Cambridge Primary Science (2nd Edition)

Marshall Cavendish Education (MCE) Cambridge Primary Science (2nd Edition) series fulfils the new Cambridge Primary Science curriculum framework (0097). The series is designed to help young learners build a sound understanding of scientific concepts and to become young scientists who make a difference to the world with their knowledge and skills.

Within this series, you will find Singapore’s tried-and-tested methodologies embodied in high-quality resources that support the Cambridge Primary Science curriculum framework. This programme includes a range of supporting resources, customisable for both online and face-to-face learning, in order to consistently deliver outstanding learning and teaching experiences.

The 2nd Edition has retained the active learning approach, easy-to-understand language, and rich visuals. It builds on the previous edition by incorporating the new Thinking and Working Scientifically strand which aims to nurture students into active learners who understand the role science plays in the world around them.

Product Architecture

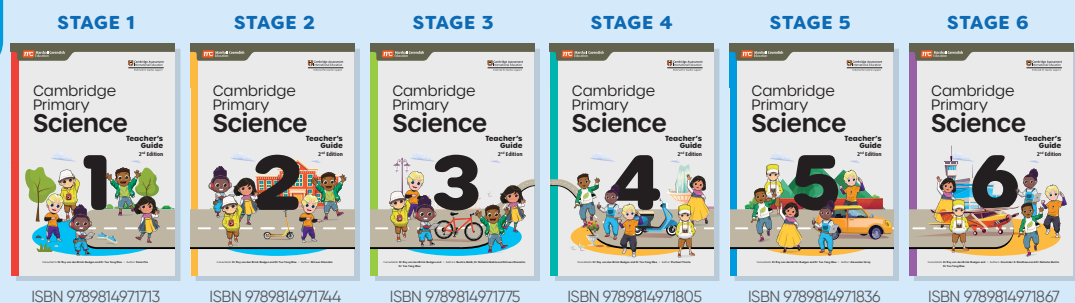
STUDENT'S BOOK



ACTIVITY BOOK



TEACHER'S GUIDE



Additional Digital Resources*

- **Student's Book**
 - Annotatable Enhanced eBooks (Tagged with interactive digital resources)
- **Activity Book**
 - Annotatable eBooks
- **Digital Teacher's Guide**
 - Scheme of Work (Editable)
 - Lesson Plans (Editable)
 - Teaching Ideas and Strategies (Editable)
 - Suggested Answers for Student's Book and Activity Book
- **Homework Worksheets (Editable)**
- **Lesson PowerPoint Slides (Editable)**
- **Depository of Licensed Videos**

**These resources will not go through the Cambridge International endorsement process.*

Why choose MCE Cambridge Primary Science (2nd Edition)?

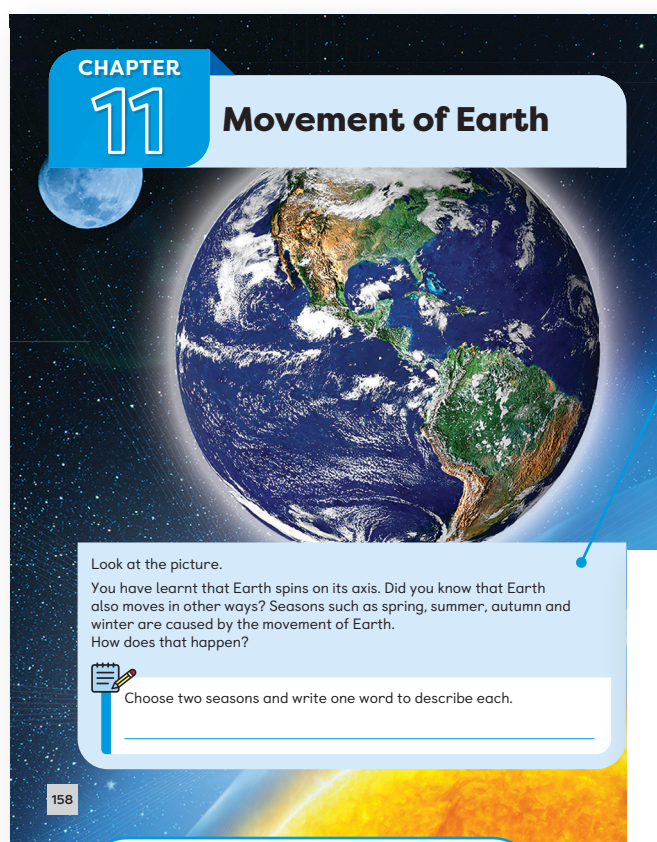


- Offers the best of both worlds to equip students for successful and meaningful living in the 21st century
- Provides effective support and strategies for English as a Second Language (ESL) learners and educators
- Promotes relatability through real-life contexts
- Delivers a fun and engaging hybrid learning experience

Offers the Best of Both Worlds to Equip Students for Successful and Meaningful Living in the 21st Century

This series combines Cambridge International’s global standard with Singapore’s tried-and-tested methodologies. It has retained the active learning approach and incorporated the new Thinking and Working Scientifically strand. This will help to develop learners’ scientific skills, allowing them to master 21st century skills such as critical and creative thinking skills.

Well-crafted questions embedded within the content and investigations support scientific inquiry. This will nurture active learners who think and work like scientists. This series also provides opportunities for self-directed learning and reflective thinking.



Chapter Opener

Inquiry questions, which require direct answers, opinions, or explanations, are used to *trigger discussions* pertaining to the topic and *encourage deeper thinking* related to the concepts.

In this section, I will...

A list of learning outcomes helps learners to be *aware of their learning pathway and success criteria* for each section.

Thinking Cap

Question prompts encourage learners to *reflect and think about what they already know*, allowing educators to *evaluate their prior knowledge*. Learners can exercise higher-order thinking and *model reflective behaviour, like a Cambridge learner*.

Let’s Explore!

Hands-on activities, which can include group or peer discussion, are easily conducted in class, allowing learners to *explore concepts* before learning the facts and *build 21st century skills*, such as communication and collaboration.

A Flowers

In this section, I will

- learn that not all plants produce flowers
- identify parts of a flower
- describe the functions of some parts of a flower
- sort living things by observation
- complete a key based on differences that can be observed
- learn that a model shows the important features of an object

Thinking cap

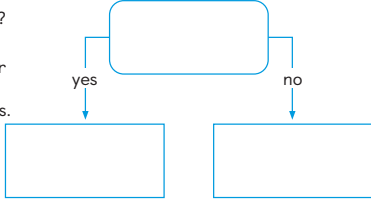
What is inside a flower?

Let’s Explore!

Do all plants have flowers?

In groups, take a walk around the school garden or a nearby garden.

1. Ask yourselves the following questions:
 - What do you look out for to tell if something is a plant?
 - What are some of the common parts that all plants have?
 - Do all plants have flowers?
2. Find out the names of the plants in the garden from your teacher. Complete the key to sort the plants into two groups.



Let's Learn

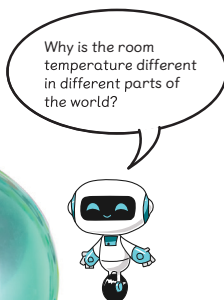
What Are Gaseous Substances?

In Stage 3, you have learnt that substances can exist as solids, liquids and gases. Substances that are gases are said to be in the **gaseous** state.

When you squeeze a sponge under water, you will observe bubbles. The bubbles are made of air. The air around us is a mixture of gases such as nitrogen, oxygen, and small traces of carbon dioxide, water vapour and hydrogen. These substances exist as gases at **room temperature**, which is the temperature of our surroundings.



The air you blow into a balloon is a mixture of gases.



Can you name other substances that are gases at room temperature?



Word Boost

Let's Learn

Apart from explanation of the key points, **inquiry questions** are embedded within the main text to **promote thinking and discussion**.

Problem-based Learning

These activities will encourage learners to **think critically and creatively** for possible solutions to **real-life problems** that affect them, their community, or society.



Problem-based Learning



Help pollinate the plants!



Many of the plants grown for food depend on pollination. Honeybees play an important role in pollinating the flowers, but their population is reducing. We need to find other ways to pollinate flowers so we can produce enough food.

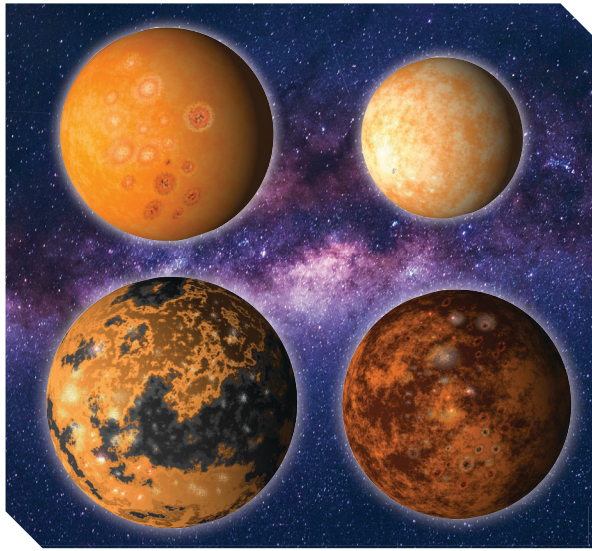
1. Work in groups. Design a machine that can be used for pollination. It could be hand-powered or wind-powered, or use another way to transfer pollen.
2. List down a scientific question that your group wishes to investigate in order for you to understand the pollination process better. Select the appropriate scientific enquiry to use to find the answer.
3. Which type of scientific enquiry has your group chosen to use? Why?
4. Present your idea or model to the class.

Can you think of any other ways we can help pollinate the flowers?



Science at Work

The Italian astronomer Galileo discovered four of Jupiter's moons in 1610.



Io, Europa, Ganymede and Callisto were the first four moons found by Galileo. More than 70 moons of Jupiter have been discovered over the years, and over 50 of them have been named. There may also be more moons that have not been discovered yet.

Carry out research to find out how our understanding and knowledge of Jupiter's moons have changed over time. Create a timeline to show what you have found.

Science at Work

Provides information to relate the topic to science careers or everyday life. *Research questions* are included for *further exploration to extend learning*.

Tech Talk!

Features modern technology that can be used to solve issues related to the topic and includes a *critical thinking question* for learners to *ponder and conduct research*.

Tech Talk!



Many scientists look at adaptations of animals to come up with new inventions. There is a type of glue that works underwater. This glue is modelled after how mussels have adapted to living underwater. The glue is made to work well in water so that it can be used to fix cracks in aquariums and swimming pool floors.

Find out what other useful products have been modelled after adaptations that plants and animals have.

Check Your Learning

Formative assessment questions at the end of a section help to *check learners' understanding*.

Check Your Learning

Describe two adaptations of plants and animals in hot and cold environments.

Tick (✓) to show what you can do.

- I can describe how plants and animals are adapted to different environments.
- I can use science to support my points of view in discussions.

Activity Book
Activity 3A, p. 21

Practice Worksheet

End-of-chapter questions that are available in various formats, such as fill-in-the-blanks and tick the right answer(s), can help *consolidate learning* and *assess learners' overall understanding of concepts*.

Practice Worksheet

1. Tick (✓) the correct box beside each sentence.

	True	False
Leaves are the reproductive parts of flowering plants.	<input type="checkbox"/>	<input type="checkbox"/>
The anther contains pollen grains.	<input type="checkbox"/>	<input type="checkbox"/>
The transfer of pollen grains from the anther to the stigma is known as fertilisation.	<input type="checkbox"/>	<input type="checkbox"/>
The ovary develops into a fruit after fertilisation.	<input type="checkbox"/>	<input type="checkbox"/>
Seeds are dispersed only by animals.	<input type="checkbox"/>	<input type="checkbox"/>
Seeds need light to germinate.	<input type="checkbox"/>	<input type="checkbox"/>

2. Draw lines to match the parts of flowers to their functions.

part	function
anther	attract insects for pollination
ovary	the part where pollen lands
petals	contains pollen grains
stigma	contains ovules that may develop into seeds

3. This plant has brightly coloured flowers that are useful for a process.



Which process is it?

Tick (✓) the correct answer.

germination	<input type="checkbox"/>
pollination	<input type="checkbox"/>
seed dispersal	<input type="checkbox"/>

4. Reza and Vinit placed some bean seeds in identical pots of soil and gave them an equal amount of water. Reza kept his pot in the refrigerator. Vinit kept his pot at the window sill. The pictures below show what they observed a few days later.



Reza's pot



Vinit's pot

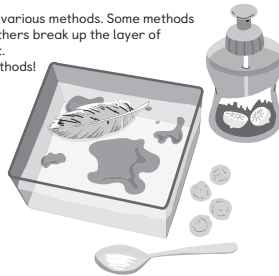
Give one reason why the seeds in Reza's pot did not germinate.

Activity 10B Clean Up the Oil Spill

Skills: Use a model to illustrate and explain a scientific idea, reach a scientific conclusion from my results

Oil spills are cleaned up using various methods. Some methods help to remove the oil, while others break up the layer of oil to reduce its harmful effect. Let's try out some of these methods!

Materials:
Container
Water
Spoon
Vegetable oil
Feather
Cotton balls
Dishwashing liquid



Method

1 Fill half of a container with water. Add a tablespoon of oil into the container.

Record what you observed.

2 Put a feather into the oily water. Then remove the feather and observe what the oil has done to it.

a Record what you observed.

b Based on your observations, how do oil spills affect birds?

Activity Worksheet

A variety of engaging activities such as hands-on exercises and research allow learners to *apply their knowledge in practical scenarios* and *encourage them to think and work scientifically*. They are designed to help learners *develop scientific skills*, as well as *21st century skills* such as critical thinking, creativity, and communication.

Let's Review

Wrap up each chapter with a variety of questions including *application-based and structured questions*, which *reinforce learning* and *facilitate assessment for learning*.

Let's Review

1 Aminah is preparing to run a marathon. Which of these would provide her with the most energy for the race? Circle the correct answer.



egg



pasta



water



apple

2 Some people do not have a balanced diet. This can cause problems with their health.

Draw a line to match the diet to the problem it can cause.

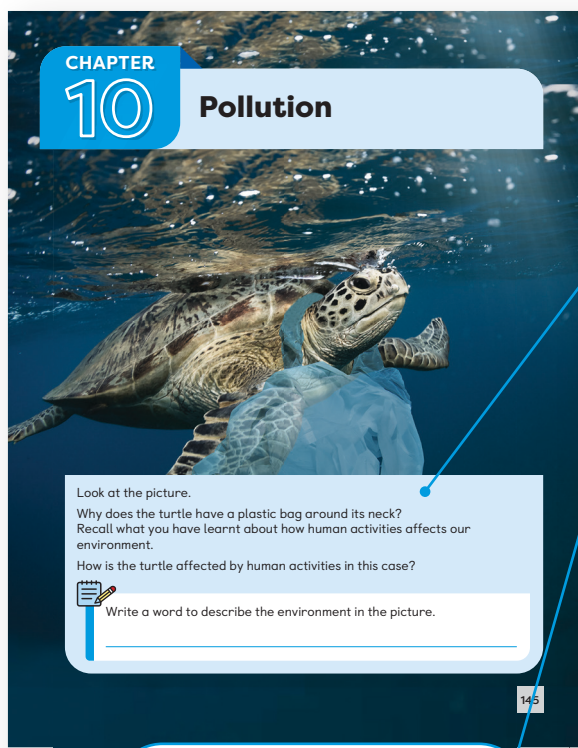
diet	problem
too much fat	not much energy
too much sugar	heart disease
not enough protein	tooth decay
not enough carbohydrate	poor growth

3 Erin wants to eat cupcakes after every meal. Give two reasons why this could be unhealthy for Erin.

Provides Effective Support and Strategies for ESL Learners and Educators

ESL learners and educators are well-supported in their learning and teaching through this series. With the right language pitch and language support features such as Science Words and Word Boost, ESL learners can easily understand the content and grasp concepts quickly. Through this series, they can expand their vocabulary and are guided to apply them in their answers. Vibrant visuals are used to simplify complex concepts by helping learners visualise them, promoting a better understanding.

ESL educators will receive support from the effective strategies and suggested ideas through the lesson plans. The overall content design and scaffolding in the series ensure that they can deliver outstanding teaching and learning.



Chapter Opener

A *simple and fun language-based writing exercise*, such as writing words or a sentence, can be used to *capture interest* while introducing the chapter.

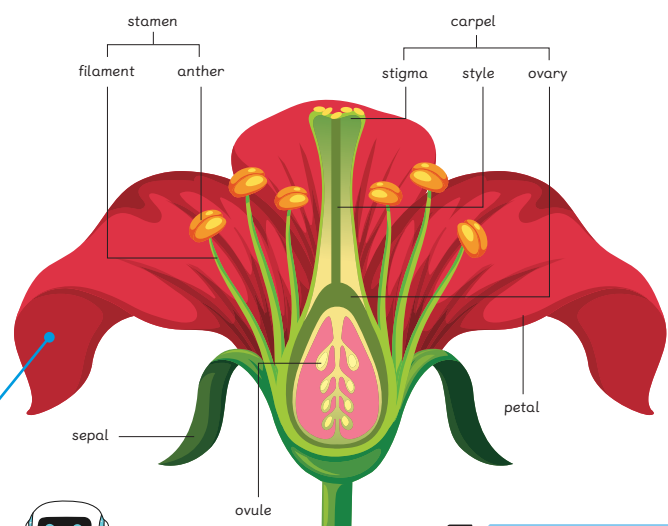
What Are the Parts of a Flower?

Flowers are the parts of a plant that help it reproduce. They are the reproductive parts of the plant.

The petals of a flower surround its male and female parts. The **stamen** of the flower includes the male parts. The **carpel** includes the female parts. Each part of the flower has a different function.



The labelled diagram below is a model of a flower. As some flowers look different from others, a model helps us understand the common features of flowers.



How do you think non-flowering plants reproduce?

Word Boost
surround
function

Let's Learn

Simple, concise sentences are used to *explain concepts in an inviting tone* and *ensure easy understanding of the content*.

Scientific keywords are presented in bold for emphasis and *support learners in scientific literacy*.

Vibrant and Rich Visuals

Vibrant and rich visual representations are used in explanations as they *simplify complex concepts* and *help learners visualise* them.

Word Boost

Non-scientific words are provided with definitions in the Teacher's Guide to support ESL learners in *expanding their vocabulary* and *understanding the content*.

Science Words

A

anther

the male part of a flower that contains pollen grains

C

carpel

the part of a flower that contains the female parts

F

fertilisation

the process in which the pollen and the egg join

flowering plants

plants that bear flowers

flowers

parts of a flowering plant that help it reproduce

G

germination

the development of a plant from a seed

L

life cycle

the stages of growth and development in the life of a living thing

N

non-flowering plants

plants that do not bear flowers

O

ovary

the female part of a flower that contains ovules

P

petals

parts of a flower that usually have bright colours

pollination

the transfer of pollen from the anther of a flower to the stigma of the same or a different flower

S

seeds

small, hard parts of a plant from which new plants grow

seed dispersal

the scattering of seeds away from the parent plant

stamen

the part of a flower that contains the male parts

stigma

the female part of a flower where pollen is received

T

temperature

a measure of how hot or cold something is

Science Words

The meanings of the scientific keywords are provided to *build scientific literacy*.



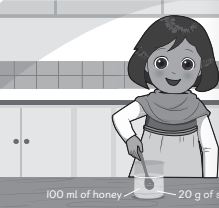
Activity 5C Changing Solvents

Skill: Reach a scientific conclusion from my results

In Activity 5B, you found out that sugar can dissolve in water. In this activity, you will find out if sugar can dissolve in other solvents.

Materials:

Honey
Two beakers
10 g of sugar
Two teaspoons
Cooking oil



Method

- 1 Pour 100 ml of honey into one of the beakers.
- 2 Put 10 g of sugar into the beaker of honey. Using the teaspoon, stir 20 times.
- 3 Repeat steps 1 and 2, this time using cooking oil as the solvent.
- 4 Observe if there is any sugar remaining after each mixture is stirred 20 times.

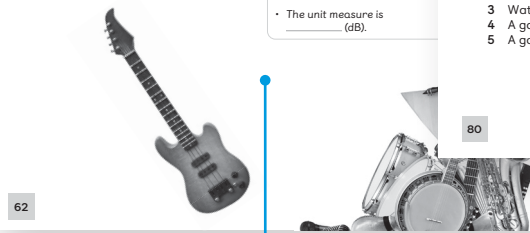
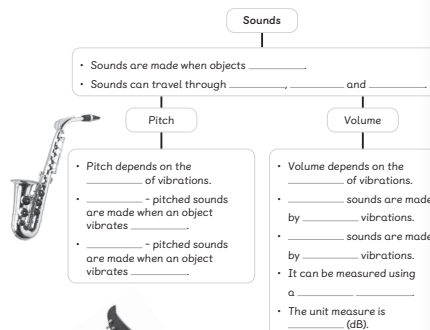
Using your observations, complete the sentence below to make conclusion for this investigation.

Sugar can dissolve in _____.

Let's Map It!

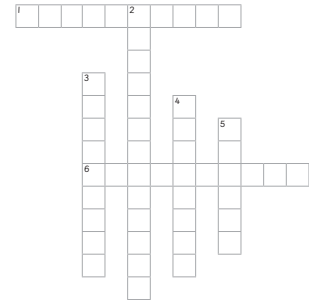
Fill in the blanks. Use the following words.

decibels gases high light liquids loud low quickly quiet slowly solids sound meter speed strength strong vibrate



Word Whizz

Help Eddy solve the puzzle!
Use the clues to complete the crossword puzzle.



Across

- 1 A layer of gas that surrounds the Earth
- 6 The continuous movement of water from the Earth's surface to the sky and back to the Earth's surface (two words)

Down

- 2 Water that falls from clouds onto the Earth, especially as rain or snow
- 3 Water that has no dissolved substances in it (two words)
- 4 A gas that is found in the largest amount in the atmosphere
- 5 A gas found in the atmosphere that is necessary for survival

Activity Worksheet

ESL-friendly worksheets include questions to help learners *practise writing answers*.

Let's Map It!

Concept maps with keywords for learners to fill in serve as a tool to *revise key concepts and consolidate learning*.

Word Whizz

Fun language-based exercises, such as crossword puzzles, help *reinforce keywords and hone scientific literacy*.

Learning Objectives

Curriculum framework codes are indicated to let educators know which learning objectives from the Cambridge curriculum framework will be covered in the chapter.

Expected Student Prior Knowledge

A list of what learners should know to understand the chapter well.

CHAPTER 2 THE DIGESTIVE SYSTEM

*Chapter Learning Objectives

- 5Bp.01** Know that animals, including humans, need an adequate, balanced diet in order to be healthy.
- 5Bs.04** Describe the human digestive system, including the functions of the organs involved (limited to mouth, oesophagus, stomach, small intestine, large intestine and anus), and know that many vertebrates have a similar digestive system.
- 5TWSm.01** Know that a model presents an object, process or idea in a way that shows some of the important features.
- 5TWSm.02** Use models, including diagrams, to represent and describe scientific phenomena and ideas.
- 5TWS.01** Sort, group and classify objects, materials and living things through testing, observation and using secondary information.
- 5TWS.07** Use a range of secondary information sources to research and select relevant evidence to answer questions.
- 5TWS.08** Collect and record observations and/or measurements in tables and diagrams appropriate to the type of scientific enquiry.
- 5TWSa.05** Present and interpret results using tables, bar charts, dot plots and line graphs.
- 5SIC.03** Use science to support points when discussing issues, situations or actions.

Expected student prior knowledge

Before starting this chapter, students are expected to:

- know how to identify and describe the functions of some important organs in humans (stomach and intestine).
- know how to describe food chains, that animals can eat plants and other animals.

* The information in this section is taken from the Cambridge Primary Science curriculum framework (0097) from 2020. You should always refer to the appropriate curriculum framework document for the year of your students' examination to confirm the details and for more information. Visit www.cambridgeinternational.org/primary to find out more.

Science Words to Highlight

Educators are encouraged to highlight the scientific words to learners as this *builds scientific literacy*.

Common Misconceptions

Promotes *assessment for learning* and serves as an easy reference for educators to *highlight and correct commonly misunderstood concepts*.

Lesson Plan

ESL and non-specialist educators can *easily understand the content* as the lesson plans are *written using simple language*. The step-by-step lesson plans allow educators to *deliver engaging lessons effectively and conveniently*. They provide guidance to conduct activities and contain suggested questions and answers to support lesson delivery.

Section B

Reproduction in Flowering Plants

Number of Periods: 3

*Section Learning Objectives

- 5Bp.02** Know the stages in the life cycle of a flowering plant.
- 5Bp.03** Describe how flowering plants reproduce by pollination, fruit and seed production, and seed dispersal.
- 5TWSm.01** Know that a model presents an object, process or idea in a way that shows some of the important features.
- 5TWSm.02** Use models, including diagrams, to represent and describe scientific phenomena and ideas.
- 5TWS.01** Sort, group and classify objects, materials and living things through testing, observation and using secondary information.

Science Words to Highlight

- fertilisation, life cycle, pollination, seed dispersal

Common Misconceptions

Misconception 1: Plants produce seeds on their own (pollination or fertilisation is not needed).
Correct concept: Pollination and fertilisation need to take place before seed formation can happen.

How to address:

Ask: Have you heard of pollination and fertilisation? What is pollination and what is fertilisation?

Explain to students that pollination is the transfer of the pollen from the male part to the female part of a flower, while fertilisation happens when the pollen and egg join. Some students may think that pollination and fertilisation refer to the same process. Point out that these are different processes, and both are necessary before seeds are formed.

Misconception 2: All seeds from the same plant have the same size and shape.

Correct concept: Seeds from the same plant may come in a variety of sizes and shapes.

How to address:

Ask: Have you paid attention to the seeds from the apple that you eat? Do they all have the same size and shape?

Explain to students that many factors come into play during fertilisation, which can affect the size or even shape of every single seed produced. Point out that this is why we can sometimes notice that seeds may be of various sizes and shapes, even if the seeds come from the same fruit.

Lesson Plan

The lesson plan below will be available online for teachers to edit and customise according to their requirements.

Lesson 3 (80 min)

Lesson Trigger and Pre-evaluation (10 min)	<ul style="list-style-type: none"> • Refer to 'Thinking Cap' on page 8 of the Student's Book. Display pictures of a real tree and a real seed on the board. Get students to observe the pictures on the board. • Ask students to discuss how a large tree could grow from a tiny seed. (Expected answer: Students may refer to one or more stages in the process of germination. For example, roots will help absorb water and nutrients to help the seed grow into a small plant. Over time, the small plant grows into a tree as the stem of the plant grows and thickens.)
Activity (15 min)	<ul style="list-style-type: none"> • Refer to 'Let's Explore!' on page 8 of the Student's Book. • Get students to use the stickers at the back of the Student's Book, to show how a plant grows. (Expected answer: Picture of a seed → picture of a seedling → picture of a young plant → picture of an adult plant) • Ask: How do you think plants change as they grow? (Expected answer: As the seed grows into a seedling, the roots and stem(s) also develop and grow. The plant produces leaves that make food for the plant. Over time, the plant grows into an adult plant. Some adult plants produce flowers that can help them reproduce.) • To support students in their sharing of ideas, you could write some of the science words you want them to use on the board, for example, 'seed', 'seedling', 'young plant' and 'tree'.

* The information in this section is taken from the Cambridge Primary Science curriculum framework (0097) from 2020. You should always refer to the appropriate curriculum framework document for the year of your students' examination to confirm the details and for more information. Visit www.cambridgeinternational.org/primary to find out more.

Alternative Lesson Ideas for Trigger, Activities for Main Lesson and Wrap-up

Additional lesson ideas serve as an easy and convenient reference to *support educators in learners' engagement*. Suggested lesson trigger ideas *involve various teaching strategies* such as visual stimulus, which can be used to *further engage learners*.

Working with Parents

Suggested home-based activities serve as reference for educators to involve parents in *supporting learning from home*. This *promotes self-directed learning* and a *school-home partnership*.

Differentiation

Activity ideas *provide support* and *challenge learners* during lessons, allowing educators to *assess learners' understanding*.

Suggested Answers

Suggested answers for Student's Book and Activity Book *support educators in assessment for learning*.



Alternative Lesson Trigger Ideas

- Engage students by asking them to imagine they are an Inuit who has found a seed in the snow. Invite students to discuss if the seed will grow if it was planted in the snow. Then, ask students to imagine they are living in the hottest desert in the world. **Ask: Will the seed grow in this desert?**

Alternative Activity Ideas for Main Lesson

- Get students to observe two pictures. Picture A shows a pot with healthy leaves by a window sill on a sunny day. Picture B shows a pot with only soil and a seed placed in the refrigerator. Invite students to discuss their observations and explain why the seed in picture B did not germinate. Emphasise that a suitable temperature is required for plants to germinate. (Expected answer: The seed in picture B did not germinate because it is placed in a cold place. Seeds require warmth for germination.)

Alternative Lesson Wrap-up Ideas

- List the stages involved in germination on the board, in an incorrect order. Ask students to rearrange the stages of germination in the correct order.

Extended Learning Ideas

- Students can find out about other methods of growing plants, such as hydroponics and vertical crops. **Ask: How do these types of plants obtain suitable conditions they need to grow?** Get students to compare these methods to that of traditional farming and discuss how the methods differ. (Expected answer: Answers may vary. For example, soil is not used in hydroponics, yet the plants are being effectively grown in water. The nutrients required for plant growth are found in the water solution used.)

Working with Parents

- Parents can work with their child to germinate a seed in their own home. Parents can guide their child to discuss what materials are needed and the conditions that are necessary for germination, which includes assessing the best location to place the seed preparation in their home.

Differentiation

- Activities that provide challenge:** Inform students that seeds have an outer coating. Ask students to think about what characteristics seed coatings should have to cope with different conditions. (Expected answer: Answers may vary. A seed needs a hard coating to protect the seed when it is being transported from location to location, such as by an animal. A seed needs to be thick or hard enough to prevent other organisms from entering.)

Activities that provide support: Provide a worksheet with sentences on the stages of germination in the correct order. Leave blanks in place of key words. Show students a list of the key words arranged in no particular order. Encourage students to fill in the blanks with the correct key word. Alternatively, students can be asked to describe the stages in sentences rather than just filling in the key words.

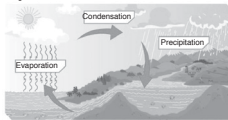
Thinking Frames

These *promote thinking* and *consolidate learning*, and can be used as indicated in the lesson plans.

Suggested Answers

Student's Book
Practice Worksheet, pp. 143–144

- False, True, True, True, False
- nitrogen
-



Activity Book
Word Whizz, p. 80

- Atmosphere
- Precipitation
- Pure Water
- Nitrogen
- Oxygen
- Water Cycle

Let's Map It!, p. 81

The water cycle is the continuous movement of water from the Earth's surface.

Airborne water droplets come together; **clouds** are formed.

As the water vapour cools, it **condenses** to form tiny water droplets.

Precipitation happens when water falls from the sky in the form of rain, snow.

Water from the ground and water bodies **evaporates** to become water vapour.

Atmosphere is the layer of **gases** surrounding the Earth.

Nitrogen

Oxygen

Carbon Dioxide

Let's Review, pp. 82–83

- Jain and Omar
- condensation, evaporation, precipitation
-
- The water gained heat and **evaporated** to become water vapour. Upon **cooling**, the water vapour **condensed** to form tiny water droplets. Together, they fall back into the **beaker**, just like the **gas** that falls onto a Gas burner.

Thinking Frame 2 – KWHL

Name: _____

Date: _____

Topic: _____			
K	W	H	L
What I know	What I want to know	How am I going to find out?	What did I learn?

Promotes Relatability through Real-life Contexts

This series presents opportunities to learn science in context so learners will be able to understand the relevance of science in their daily lives. The practical applications allow learners to transfer knowledge and skills to everyday scenarios, which can boost their understanding and make learning science meaningful.

As the series includes multicultural references and photographs, it caters to the international audience.

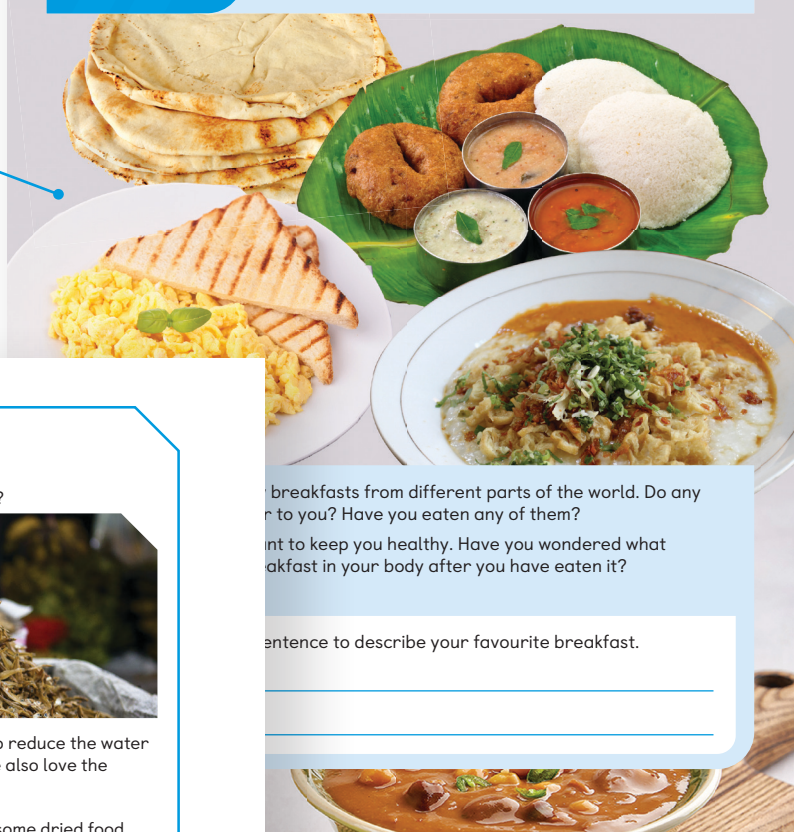
Real-life examples

Examples are drawn from real life through visuals that can *provide context and promote relatability*.

CHAPTER

2

The Digestive System



Science at Work

Have you ever had dried fish such as *ikan bilis*? Do you know that evaporation is used to dry the fish?



Evaporation is commonly used in the food industry to reduce the water content in food and make it last longer. Many people also love the flavour of the dried food.

Visit your local grocer or supermarket and identify some dried food items. Carry out research to find out how they are dried.

breakfasts from different parts of the world. Do any of them appeal to you? Have you eaten any of them?

What do you think you need to eat to keep you healthy. Have you wondered what happens to the food you eat for breakfast in your body after you have eaten it?

Write a sentence to describe your favourite breakfast.

What Happens During Condensation?

Look back at the picture on page 55. What causes the mirror in the bathroom to become foggy after you take a hot shower?

The hotter water vapour in the bathroom comes in contact with the cooler surface of the mirror. When that happens, the water vapour loses heat and changes into water droplets. This process of a gas changing into a liquid is called **condensation**.



Word Boost

foggy
contact
droplets

Can Magnetic Force Act Over a Distance?

You discovered in the 'Let's Explore!' activity on page 123 that a magnet can attract an iron nail without touching it. Magnetic force can act over a distance between magnets, and between magnets and magnetic materials.



Magnetic force can act over a distance to attract the iron nails.

Tech Talk!

Showcases *real-life applications* by featuring modern technology, which learners may have encountered before, to *demonstrate the relevance of science in daily life*.

Tech Talk!



Maglev (magnetic levitation) trains can travel more than 400 kilometres per hour. The strong magnets between the train and the tracks repel each other, causing the train to 'float' above the tracks. Other magnets allow the trains to move at great speeds. Why is the distance between the 'floating' train and the tracks important? What could happen if it is too short or too long?

B

Evaporation and Condensation

In this section, I will

- describe the processes of evaporation and condensation
- use a model to explain a process
- plan a fair test and identify the three types of variables
- choose equipment and use it properly during an investigation
- describe risks in practical work and ways to minimise them
- use knowledge and understanding to make predictions
- decide when to repeat observations to get reliable results
- do practical work safely
- take measurements accurately
- create tables and diagrams to present the results of my observations when appropriate
- recognise the features of different scientific enquiries
- describe the use of science locally

Thinking cap

I wonder why my glasses become foggy sometimes...



Let's Explore!

In-class activities are based on real-life contexts so learners can *discover the reliability of the scenarios*, which will *enhance their understanding* as they learn facts.

Let's Explore!

Where did the water droplets come from?

You will need:

- Small mirror

1. Hold the mirror in front of your mouth.
2. Open your mouth and breathe out in front of the mirror.
3. What do you observe? Give a possible reason for your observation.
4. Leave the mirror aside for a few minutes.
5. What do you observe now? Why?



Problem-based Learning



How can we prevent wastage of water?

Farmers need water to grow their plants. Many farmers depend on rainfall to water their fields. When there is not enough rainfall, many farms use artificial watering of fields. This is known as irrigation.

Many fields use an irrigation system as shown in this picture. However, some irrigation systems can lead to wastage of water as the plants may not need so much water. You have been tasked to find ways to solve this problem.

1. Work in groups. Start with asking a scientific question about irrigation that can be investigated. Select an appropriate scientific enquiry that you can use to find the answer to your question.
2. Design a method to irrigate fields without wasting water.
3. Design a poster to present your ideas. Keep these questions in mind when designing the poster:
 - (a) How will this system work?
 - (b) Can it be easily set up and used?
4. Share your poster with the class.

When working in a group, take part actively. Encourage your group mates to share their ideas.



Problem-based Learning

Activities involving real-life problems which require learners to *apply their knowledge and skills* to *propose possible solutions*.

Social and Emotional Learning

With an emphasis on the learners' Social and Emotional Learning, mascots will appear to encourage learners to *practise social and emotional etiquette* as they learn how to work with others and manage their emotions.



Look for some food items in your refrigerator. Using the food packaging as a source of information, find out which food group each of the food items belongs to. Sort the food items into the various food groups on a separate piece of paper.

The plate below shows how you can have a balanced diet.

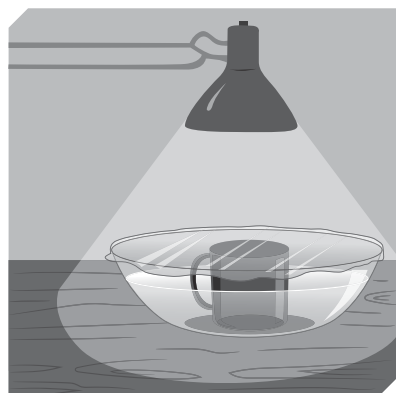


Different people may follow different diets for various reasons. For example, some people do not take any animal products such as milk, eggs or meat. We should be respectful of one another's food choices.

Activity 9B Make a Water Cycle



Skills: Learn that a model shows the important features of a process and an idea, use a model and a diagram to illustrate and explain a scientific event and idea, use science to support my points of view in discussions



Materials:

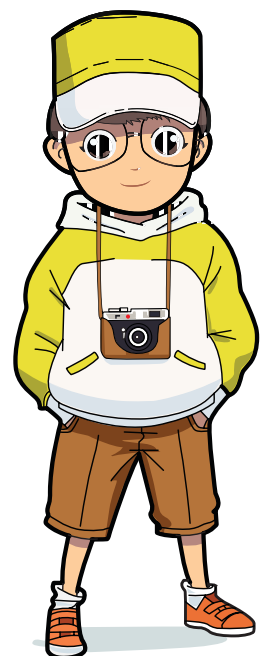
Mug	Cling wrap
Large plastic bowl	String
Water	Lamp
Marker	

Method

- 1 Place the empty mug in the middle of the large plastic bowl.
- 2 Fill the bowl with water to the half-way mark. Use a marker to mark the water level in the bowl. Ensure that there is no water in the mug.

Activity Worksheet

Engaging hands-on activities provide opportunities to *demonstrate concepts* pertaining to the topic and allow learners to *transfer their knowledge to real-life contexts*.



Delivers a Fun and Engaging Hybrid Learning Experience

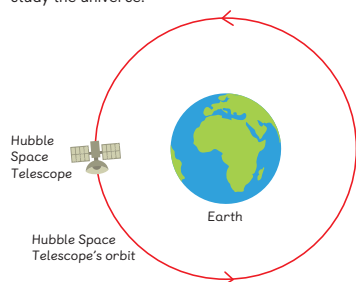
This series offers an exciting and engaging hybrid learning experience with its convenient and easy-to-use bank of digital resources. The eBooks allow annotations to be saved to capture submitted answers, in addition to the Student's Book that is tagged with interactive digital resources to enhance learning.

Spark excitement and fun learning in science lessons by engaging learners with vibrant visuals, videos, quizzes, and sticker activities. With both print and digital learning resources available to support online and face-to-face learning, this series delivers outstanding learning experiences.

While the Moon is a natural satellite of Earth, there are thousands of human-made satellites that humans launch into space. These satellites observe and study Earth and space and send information to scientists on the Earth.



The Hubble Space Telescope is a large telescope orbiting Earth since 1990. It has taken more than a million pictures of objects in space for scientists to study the universe.



The Hubble Space Telescope is a human-made

Option

Watch!
Scan this page to watch a video about the Hubble Space Telescope.

Word Boost

launch
million

Watch!

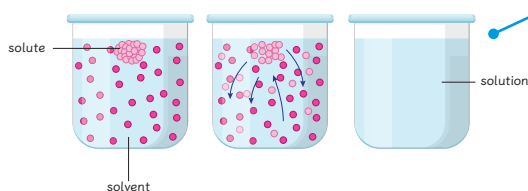
Learning comes alive with the relevant *videos** and *quizzes**, which *excite and engage learners*. These can be projected in class by educators or launched using smart devices by scanning the page using the MCE Cambridge app.

*These digital resources will not go through the Cambridge International endorsement process.

How Can the Particle Model Be Used to Describe Solutions?

We can use the particle model to describe solutions. When a solute is dissolved in a solvent, the solute breaks apart and mixes evenly with the solvent.

Choose a sticker from the back of the book and paste it to show the solution in the last beaker below.



The solute particles are broken apart and mixed evenly with the solvent particles to form a solution.

How Can the Solvent and Solute Be Separated From a Solution?

In Stage 3, we have learnt how a mixture of solids or a mixture of a solid and a liquid can be physically separated by sieving and filtration.

Dissolving is a **reversible process**. This means that a solute can also be separated from a solvent. However, this cannot be done by sieving or filtration. This is because the solute particles will be able to pass through the filter paper since they are so small.

Sticker Activities

Sticker activities *elevate the learning experience* through *interesting hands-on engagement* and *promote assessment for learning*.

Stickers

Stickers for Chapter 1, Section B, page 25



Stickers for Chapter 2, Section A, page 26



Stickers for Chapter 3, Section A, page 35



Stickers for Chapter 4, Section A, page 59



Stickers for Chapter 5, Section B, page 82



Let's Learn
What Adaptations Do Flowering Plants Have for Pollination?
 In Chapter 1, you have learnt that insects and birds play an important role in pollinating flowers. Flowering plants have adaptations for attracting pollinators. Pollinators are animals that help transfer pollen from the anther of a flower to the stigma of the same or another flower.

Vibrant Visuals
 Vibrant and rich colours are used throughout the Student's Book to deliver a *joyful look and feel*.

The petals of some flowers are brightly coloured to attract insects and birds.

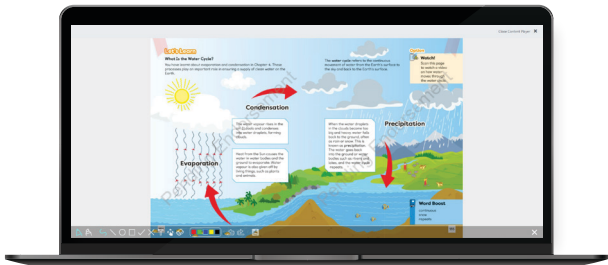
Some pollinators are attracted to the scent or nectar in the flowers. Some flowers may give off a bad smell to attract flies or beetles.

As the pollinators travel from one flower to another, the pollen grains stick onto their bodies. The pollen grains may land on another flower.

Dynamic and Engaging Mascots
 The mascots will appear frequently *to interact with the learners* and *present concepts in an engaging manner*.

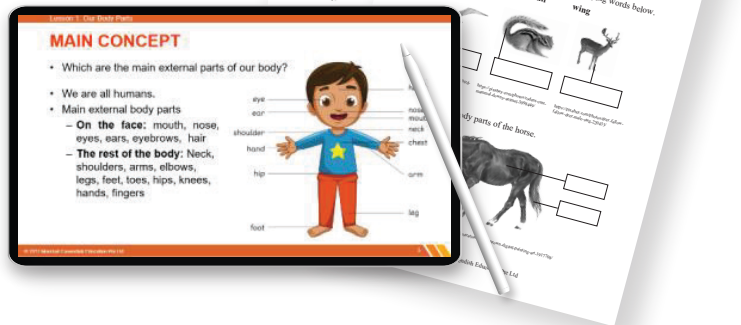
Word Boost
 transfer

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Annotatable eBooks*

Answers annotated in the eBooks can be *saved and accessed by educators*. The Student's eBooks contain *digital resources* tagged to the Watch feature which learners can access in their own time or through in-class activities. The flexibility in usage of digital resources enables *hybrid teaching and learning*.



Additional Digital Resources*

Digital teacher's resources, such as lesson PowerPoint slides and homework worksheets, will help educators *save time on lesson planning* and *effectively deliver exciting and fun science lessons*. They are editable, allowing educators to *customise and plan their lessons for the various learning needs*.

*These digital resources will not go through the Cambridge International endorsement process.

Table of Contents

STAGE 1

CHAPTER 1	Our Body
CHAPTER 2	Alive and Never Been Alive
CHAPTER 3	Plants
CHAPTER 4	Materials
CHAPTER 5	Movement of Objects
CHAPTER 6	Sounds
CHAPTER 7	Electricity
CHAPTER 8	Magnets
CHAPTER 9	Earth and the Sun

STAGE 2

CHAPTER 1	Animals
CHAPTER 2	Being Healthy
CHAPTER 3	Habitats
CHAPTER 4	Materials
CHAPTER 5	Forces
CHAPTER 6	Light and Darkness
CHAPTER 7	More about Electricity
CHAPTER 8	Rocks
CHAPTER 9	Changes to Our Environment
CHAPTER 10	The Sun

STAGE 3

CHAPTER 1	Things Around Us
CHAPTER 2	Animals
CHAPTER 3	Food Chains
CHAPTER 4	Parts of Plants and Humans
CHAPTER 5	Matter and Mixtures
CHAPTER 6	Friction and Gravity
CHAPTER 7	Light and Shadows
CHAPTER 8	Properties of Magnets
CHAPTER 9	Rocks and Fossils
CHAPTER 10	Earth, the Sun and the Moon



STAGE 4

CHAPTER 1	Bones and Muscles
CHAPTER 2	Diseases
CHAPTER 3	Energy from Food
CHAPTER 4	Different Habitats
CHAPTER 5	Materials, Substances and Particles
CHAPTER 6	Energy
CHAPTER 7	Properties of Light
CHAPTER 8	Electric Circuits
CHAPTER 9	The Solar System
CHAPTER 10	Structure of the Earth

STAGE 5

CHAPTER 1	Flowering Plants
CHAPTER 2	The Digestive System
CHAPTER 3	Adaptations
CHAPTER 4	States of Matter
CHAPTER 5	Interactions of Matter
CHAPTER 6	More about Forces
CHAPTER 7	Sounds
CHAPTER 8	Magnets and Forces
CHAPTER 9	The Atmosphere and the Water Cycle
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STAGE 6

CHAPTER 1	The Respiratory and Circulatory Systems
CHAPTER 2	The Human Reproductive System
CHAPTER 3	Human Diseases
CHAPTER 4	Food Chains and Food Webs
CHAPTER 5	Properties of Matter
CHAPTER 6	Physical and Chemical Changes
CHAPTER 7	Effects of Forces
CHAPTER 8	Movement of Light
CHAPTER 9	More About Electrical Circuits
CHAPTER 10	More About Rocks
CHAPTER 11	Soil
CHAPTER 12	More About the Solar System



Grade 7 – 9 | Age 13 – 15

Science Ahead is a comprehensive science programme for Stages 7, 8 and 9. The series uses the constructivist-inquiry approach to offer a learner-centred solution, helping learners acquire scientific concepts and skills. The curriculum content is structured using a spiral progression, allowing learners to revisit concepts and skills at different stages with increasing depth, thus ensuring a strong foundation.

The series makes use of vibrant photographs, clear infographics, inquiry questions, activities, and case studies to deliver an engaging and enjoyable science learning experience.

To find out more, scan here!



Grade 10-11 | Age 15-17

Marshall Cavendish Education Cambridge IGCSE™ Physics, Chemistry and Biology are comprehensive two-year programmes designed to support learners with their study of the Cambridge IGCSE and IGCSE (9-1) Physics (0625/0972), Chemistry (0620/0971), and Biology (0610/0970) syllabuses.

Developed based on robust research, these series bring Science learning to life by focusing on real-life examples to which learners can relate. They are designed to excite and engage learners by piquing their curiosity in scientific concepts and promoting a deep understanding of topics. This is done by giving learners plenty of opportunities to practise learned skills, reflect on concepts, and share, discuss or journal what they have learnt.



To find out more, scan here!

The titles in this series are endorsed by Cambridge Assessment International Education to support the syllabus for examination from 2023.

Scan QR code to visit our Cambridge International website:





Scan here to
access the **MCE**
Cambridge Primary
Maths (2nd Edition)
website!

Cambridge Primary Mathematics

2nd Edition

Brochure



Beyond Basics, Reimagine Education

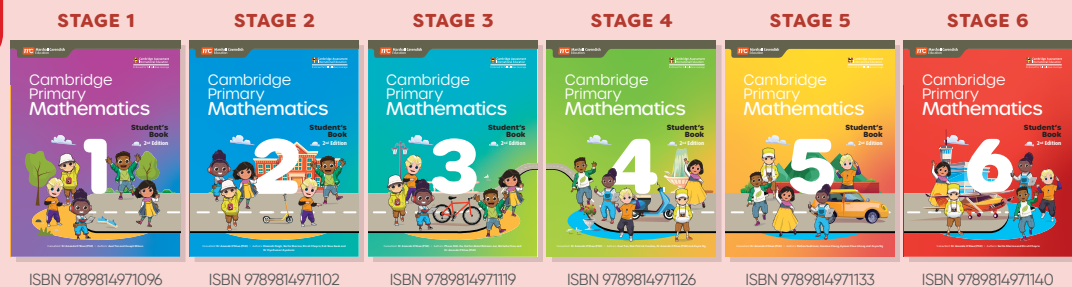
Marshall Cavendish Education Cambridge Primary Mathematics (2nd Edition)

The Marshall Cavendish Education (MCE) Cambridge Primary Mathematics (2nd Edition) series is designed to support educators and learners following the Cambridge Primary Mathematics curriculum framework (0096). Our package nurtures Cambridge active learners, using the Concrete-Pictorial-Abstract (CPA) approach helping them develop conceptual understanding.

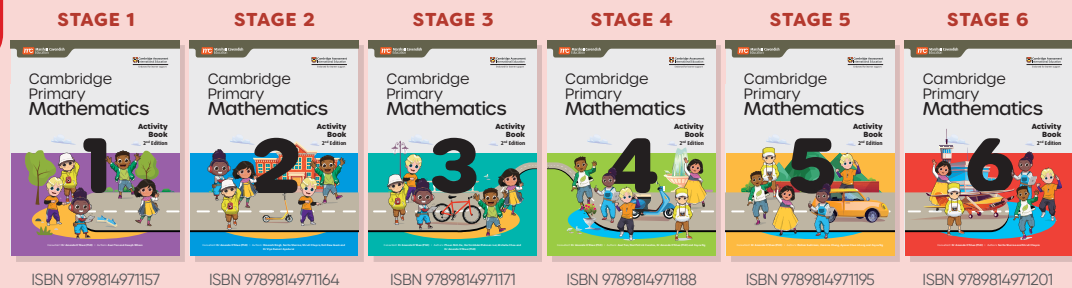
The series draws on Singapore’s tried and tested methodologies that focus on mastery through sequencing of concepts. Through activities that promote engagement, curiosity, innovation and reflection, learners are encouraged to become more confident and self-directing. Incorporating the new Thinking and Working Mathematically skills, the series develops learners as 21st century mathematical thinkers within a globalised community.

Product Architecture

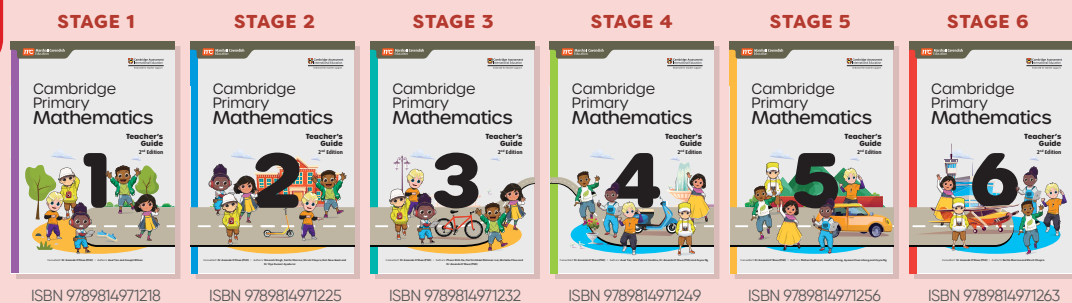
STUDENT'S BOOK



ACTIVITY BOOK



TEACHER'S GUIDE

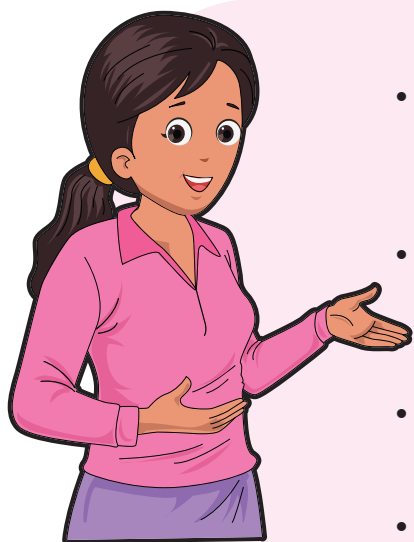


Additional Digital Resources*

- **Student's Book**
 - Annotatable Enhanced eBooks (Tagged with interactive digital resources)
- **Activity Book**
 - Annotatable eBooks
- **Digital Teacher's Guide**
 - Scheme of Work (Editable)
 - Lesson Plans (Editable)
 - Suggested Answers for Student's Book and Activity Book
- **Levelled Worksheets (Editable)**
- **School-to-Home Notes**
- **PowerPoint Slides (Editable)**
- **Heuristics PowerPoint Slides (Editable)**

**These resources will not go through the Cambridge International endorsement process.*

Why choose MCE Cambridge Primary Mathematics (2nd Edition)?



- Offers the best of both worlds to equip students for successful and meaningful living in the 21st century
- Provides effective support and strategies for English as a Second Language (ESL) learners and educators
- Promotes relatability through real-life contexts
- Delivers a fun and engaging hybrid learning experience

Offers the Best of Both Worlds to Equip Students for Successful and Meaningful Living in the 21st Century

Our series offers specially designed instructional programmes that combine Cambridge International's global standard and Singapore's tried and tested methodologies. Our package focuses on mastery through the sequencing of concepts and Concrete-Pictorial-Abstract method. The Singapore Maths method encourages learners to think through problems and apply mental concepts in new ways.

Our series also incorporates Thinking and Working Mathematically (TWM), a new feature in the Cambridge Primary and Lower Secondary Mathematics curriculum framework. The TWM feature encourages learners to reason mathematically rather than to simply memorise facts and figures.

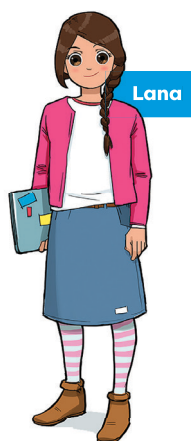


Dynamic and Engaging Mascots

These mascots will appear frequently to *interact with the learners* and *present concepts in an engaging manner* and *promote critical thinking*.

Social-and-Emotional Learning Mascots

Appear at relevant points to teach learners how to better understand their feelings and express themselves with different groups of people, developing their *social and emotional skills*.



Thinking Cap



What pattern do you see in the coloured parts of the squares?
Explain your generalisation.



Thinking Cap

Learners are *asked probing questions* to provide an opportunity for them to *extend and extrapolate* from their prior knowledge.

Let's Learn

- a Look at the cubes.



2, 3, 5, and 7 are examples of **prime numbers**. A prime number is a number that has exactly two factors, 1 and itself.

The prime numbers from 1 to 100 are coloured in green.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

The cubes are arranged in 1 row. They cannot be arranged in more than 1 row.



Is 1 a prime number? Explain your answer to your partner. Show why 11, 13, 17 and 19 are prime numbers.



There are _____ prime numbers from 1 to 100.

23 has two factors, 1 and _____.

The next prime number after 29 is _____.

The prime number from 90 to 100 is _____.

MCE Cambridge Primary Maths Student's Book

Let's Practise

Questions *vary in difficulty*, with the initial questions covering basic skills learnt in Let's Learn, building up to more *non-routine, higher-order thinking questions* to challenge more confident learners.

Let's Learn

Engage learners to learn about new mathematical concepts through the **Concrete-Pictorial-Abstract approach**. The content is presented in *bite-sized chunks* and *scaffolded* to enable learners to stop, think, and engage with key concepts.

Let's Practise

- 1 Find the missing numbers.

a $3^2 =$ _____

b $7^2 =$ _____

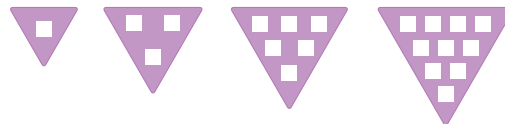
- 2 Circle the square numbers.

16 21 36 66 81

- 3 Draw the square number sequence from the 1st term to the 10th term.

- 4 Edwin has a piece of grid paper. It is 8 units long and 12 units wide. He wants to cut out a single square from the piece of grid paper. If Edwin cuts out the largest possible square, how many units are there in his cutout? How can you convince your friend?

- 5 a Draw the 5th and 6th terms. What do you notice about the pattern?



1st term 2nd term 3rd term 4th term

- b Without drawing the pattern, how would you find the number of squares in the 10th term? Make your own conjecture.

Worksheet B

Tests of Divisibility

Level 1 Level 2 Level 3

- 1 Is the number divisible by 4?
Fill in the blanks.
- a In 432, the last two digits are _____.
_____ \div 4 = _____
432 _____ divisible by 4.

If you need help, see Student's Book pages 6 and 7.



- b In 3984, the last two digits are _____.
_____ \div 4 = _____
3984 _____ divisible by 4.

You can check your answers using a calculator.



- 2 Is the number divisible by 8?
Fill in the blanks.
- a In 8432, the last three digits are _____.
_____ \div 8 = _____
432 _____ divisible by 8.

- b In _____
13 _____

What I Can Do Now

Encourage learners to *reflect* on the key concepts that have been taught in the classroom through *self evaluation and journals*. This promotes metacognitive thinking in students, enabling them to become flexible, creative and self-directed learners.

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Worksheets

Questions of varying difficulty levels provide *additional practice* and *reinforcement* of key mathematical concepts and skills.

MCE Cambridge Primary Maths Activity Book

What I Can Do Now

Colour the bulbs to show what you can do.

I have learnt to	What I still don't understand	To review, go to...
tell the difference between prime and composite numbers.		Student's Book Let's Learn A
understand the test of divisibility.		Student's Book Let's Learn B



Maths Journal

Write a riddle using these words:
prime number, composite number, divisible by 4 and 8
For example:
A number is a composite number. It is divisible by 4 and 8.
What is the number?

Be A Maths Explorer

Blink and you'll miss it!

0.000001 s

The number above represents 1 microsecond. It is the amount of time taken by a high-speed camera flash to flash a light.



The average human eye takes 350 000 microseconds to blink once. That is about 0.3 s.

- Use the Internet to find 5 units of time that are less than 1 s.
- Describe how fast each unit of time is by giving examples. Present your findings in a table. One example has been done for you.

Unit	Example
nanosecond	Electricity travels along a 30-cm long wire in 1 nanosecond

- Then share it with the class.

Then exchange of you get the way?

Be a Maths Explorer

Incorporates *STEAM* and other *disciplines* to help learners develop *21st century skills* such as global perspectives, use of ICT, and collaboration with others.

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MCE Cambridge Primary Maths Activity Book

About the Programme

The following information is based upon the current Cambridge Primary Mathematics curriculum framework from 2020. Please consult the Cambridge International website (www.cambridgeinternational.org/primary) for the most up-to-date curriculum documents and additional details regarding assessment arrangements for Stages 1 to 6.

a. The Mathematical Strands

The Cambridge Primary Mathematics curriculum from 2020 is organised into three main strands: Number, Geometry and Measure, and Statistics and Probability. These three main strands are subdivided into themes or 'sub-strands'.

Number includes the sub-strands:

- counting and sequences,
- money,
- integers and powers,
- place values ordering and rounding,
- fractions, decimals, percentages, ratio, and proportion.

Initially, students begin with counting objects through experiences with concrete materials. Through identifying patterns and sequences, students develop understanding and reasoning about the structure and properties of number. This is an important first step in early algebraic thinking and reasoning. Concrete resources of real objects, then become linked to representational materials such as number lines, base-ten blocks and counters. These resources are the main link to representation in mathematics that then becomes increasingly formalised.

Place value becomes increasingly important as a concept from Stage 1 as numbers increase in complexity towards millions by Stage 4. Alongside this, the four operations are developed as calculations with additive and multiplicative reasoning. Conceptual understanding of fractions is developed through early ideas of wholes and halves with a part-part-whole model. Having a sense of estimation is developed throughout as this is important for gaining a sense of number and proportionality as well as with size and measure for geometry. Estimation is also a crucial aspect of mental approaches to calculations as this gives a sense of reasonableness to their solutions. Reasoning in fractions is further developed with proportionality in terms of decimals and percentages, then ratio and proportion. Calculating with fractions, decimals and percentages becomes increasingly important from Stage 4 and has connections to representations in statistics.

Geometry and measure include time, geometrical properties and reasoning, and position and transformation. Initially the focus for geometrical progression is in developing a sense of 2-D and 3-D shapes and describing their properties. This becomes increasingly analytical with connections to transformations in shapes with reflective and rotational symmetry.

Students use position and direction to locate, describe and interpret movement on a grid as cardinal and ordinal points. The relative positions of points as coordinates are also explored. From Stage 5, this is connected to plotting and transforming lines and shapes using grid coordinates.

Students explore measures as a concept from early non-standard measures to formal standardised measures for length, mass, capacity, temperature, and time. Early skill in estimation is important so that students can develop a sense of proportion and scale in measure. Following this, students then undertake tasks in measuring and calculating distances, mass, capacity, and time. Students also

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MCE Cambridge Primary Maths Teacher's Guide

Teaching Strategies

This section covers **active learning** and creates an **inclusive learning environment**. The strategies are practical so as to enable effective classroom or home-based learning.

Teacher's Guide

The preface of Teacher's Guide offers a short **introduction to TWM** and the strands for educators who might be new to the curriculum framework. It also provides the teacher an introduction to the Concrete-Pictorial-Abstract approach.

Teaching Approaches and Learning Environment

a. Strategies for Active learning and Creating an Inclusive Learning Environment

In this section, we outline the strategies and activities that are suggested within the scheme. Through the Marshall Cavendish Primary Mathematics scheme, these strategies support students in becoming actively engaged, innovative, confident, reflective, and responsible mathematical students. Students are also encouraged to engage in creative mathematical thinking and to be motivated and enthusiastic participants in their own learning. They are enabled to become more confident by improving mathematical fluency and knowledge of the key concepts. Students will become increasingly responsible for their own learning and that of others, reflecting on the development of their mathematical skills, strategies, and conceptual understanding. They are encouraged to take an active and responsible role by engaging in the world around them and the society in which they live. Students will become increasingly innovative as they communicate mathematically through written and verbal representations of concepts and strategies. They will learn to be confident users of representations with symbols, diagrams, sketches, and pictures. This also enables them to critique and improve their representations to become more effective. Further, students are motivated to confidently use technology in a way that promotes their own mathematical learning and understanding.

The Marshall Cavendish Primary Mathematics scheme also supports all students by creating an inclusive environment where all students know they can achieve mathematical understanding. It is important that all students embrace their misconceptions and view them as positive steps in developing reasoning and understanding. It is through provoking misconceptions that we develop a deeper understanding of mathematical concepts alongside structure and meaning.

The strategies below are listed with a description and possible variations to support different class sizes and contexts.

Strategy	Description
Think-Pair-Share For paired and class discussions	Teacher poses a problem, question or challenge that requires thinking, students think for a minute, then discuss in pairs for two minutes. Students then share with two others or with the whole class.
Think-Pair-Vote-Share For paired and class discussions	This is a variation of Think-Pair-Share. Teacher poses a problem, question or challenge that requires thinking, students think for a minute, then think and consider an answer in pairs, and suggest a few different options. Alternatively, Teacher poses some possible answers as options. Students vote by show of hands on their chosen answer. Students then suggest a convincing reason why it is that answer either to another pair or as a whole class.

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MCE Cambridge Primary Maths Teacher's Guide

Provides Effective Support and Strategies for ESL Learners and Educators

The series offers a comprehensive package to support both learners and educators. English language is pitched appropriately for ESL learners, with simple and concise language to ensure that learning is not hindered by their language skills. For non-specialist educators, the series offers a unique combination of teaching strategies that support the delivery of lessons in the classroom.

Maths Words

Key mathematical terms used in the chapter are presented in a *visually* engaging manner to help learners recall and retain the terms.

Maths Words

Numbers

Prime numbers

have **exactly** two factors

$$1 \times 31 = 31$$

So, **31** is a prime number.

Composite numbers

have **more than** two factors

$$1 \times 20 = 20$$

$$2 \times 10 = 20$$

$$4 \times 5 = 20$$

So, **20** is a composite number.

Tests of divisibility

Divisible by



1432

$$32 \div 4 = 8$$

So, **1432** is divisible by **4**.

Divisible by



1432

$$432 \div 8 = 54$$

So, **1432** is divisible by **8**.

Activity Book
What I Can Do Now

MCE Cambridge Primary Maths Student's Book



Rich Visuals

Are *colourful*, *attractive* and come with *simple sentences* to motivate learners to learn.

MCE Cambridge
Primary Maths
Student's Book

Maths Journal

Encourage learners to *reflect and write about their metacognitive thinking* through journal writing at the end of each chapter.



Maths Journal

Write a riddle using these words:

prime number, composite number, divisible by 4 and 8

For example:

A number is a composite number. It is divisible by 4 and 8.

What is the number?

MCE Cambridge Primary Maths Activity Book

GLOSSARY

1 hundredth

comes after the tenths. 1 hundredth is written as 0.01 or $\frac{1}{100}$

1 tenth

comes after the decimal point. 1 tenth is written as 0.1 or $\frac{1}{10}$

2D shapes

are flat

area

is a measure of the amount of space in a shape.

associative law of addition

to add later numbers in an addition sum to make addition easier; for example: $368 + 11 + 89 = 368 + 100 = 468$

associative law of multiplication

to multiply later numbers in a multiplication term to make multiplication easier; for example: $55 \times 20 = 11 \times 5 \times 20 = 11 \times 100 = 1100$

associative laws

allows us to work out the later numbers first

bar chart

shows categorical or discrete data using bars

Carroll diagram

a table that displays categorical data in a yes or no way

categorical data

data which consists of values that belong to a common group; for example: likes coffee / does not like coffee

centre

the highest point in a graph

chance experiment

a test in which we perform a number of probability experiments to measure the chance of an event occurring

closed cube

a closed cube has 6 identical square faces joined at their edges

commutative law of addition

to swap the numbers in an addition sum to make addition easier; for example: $45 + 126 + 55 = 45 + 55 + 126 = 100 + 126 = 226$

commutative law of multiplication

to swap the numbers in a multiplication to make multiplication easier; for example: $5 \times 24 \times 4 = 5 \times 4 \times 24 = 100 \times 24 = 2400$

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commutative laws

We can swap the order of the numbers.

compose

To combine numbers with different place values.

composite numbers

a number that has more than two factors

Compound shapes

are made up of 2 or more shapes.

constant

a number which is consistently added to or subtracted from in a linear sequence

continuous data

data which is gathered by measuring; for example: number of marks students in a class get for a test

coordinates

describe points on a grid.

cuboid

a figure with a square or rectangular base which has 6 faces

decompose

To separate into numbers with different place values.

diagonal

a slanted line

discrete data

data which can be counted; for example: number of marbles a student has

distributive law of multiplication

to break down a term in a multiplication equation to make multiplication easier; for example: $110 \times 17 = 110 \times 10 + 110 \times 7 = 1100 + 770 = 1870$

divide by a 1-digit whole number

to divide a number by a single digit number; for example: $140 \div 7 = 20$

dot plot

is a graph where each dot represents a data point.

equilateral triangle

has 3 equal sides, 3 equal angles, and 3 lines of symmetry.

equivalent

of the same size

Glossary of Terms

Provides the mathematical terms and definitions that are introduced throughout the book. These terms are presented as *visuals* in the Student's Book.



MCE Cambridge Primary Maths Teacher's Guide

Common Misconceptions

Highlights **common areas** that students get confused about easily. **Suggestions** are also provided to address the misconceptions.

Common Misconceptions

Misconceptions:

1. Students may mistake numbers ending in 4 as being divisible by 4.
2. Students may mistake numbers ending in 8 as being divisible by 8.

How to address the misconceptions:

1. Demonstrate that the test of divisibility by 4 looks at the last two digits of a number. Point out to students that while some numbers that end in 4, such as 4, 24, and 44, are divisible by 4, this is not a test of divisibility. Other numbers that end in 4 are not necessarily divisible by 4. For example: 14 and 34.

Get students to recognise that when we look at the last two digits of a number, such as 1428, we ignore the first two digits (1 and 4) and focus only on the last two digits (2 and 8). Have them highlight, colour, or circle the last two digits to emphasise the correct digits to use in the test.

Emphasise that the digits before the last two digits do not matter when applying the test of divisibility by 4. Use other examples to prove this point. Have them repeat for a few more numbers (for example: 228, 1328, and 56 828). Remind them to look only at the last two digits of each number.

Section B Tests of Divisibility Number of Periods: 4

Learning Objective <ul style="list-style-type: none"> • SNL07 Use knowledge of factors and multiples to understand tests of divisibility by 4 and 8. 	Expected Prior Knowledge <ul style="list-style-type: none"> • Understand the relationship between factors and multiples. • Recall tests of divisibility by 2, 5, 10, 25, 50, and 100.
Note <p>Revisit division by two by having students explore sharing pencils equally between two people. Then move on to challenge students to use number chips to explore distributing equally among four people and dividing by four. Students will use concrete aids such as ribbon strips, counters and pencils, as well as utilise pictorial representation such as by illustrating their understanding with diagrams to record and explain their thinking to convince their friends.</p> <p>In this section, the emphasis is on finding the relationship between multiples of 2, 4, and 8 and tests of divisibility. By the end of the chapter, students should be able to determine if a number is divisible by 4 or 8 by focusing on the relevant digits of a number.</p> <p>Students are expected to be able to divide numbers by 4 and 8, but they can use a calculator to check their answers for large numbers.</p>	
Language Support <p>Vocabulary: tests of divisibility</p> <p>Revise even numbers with students. As the focus students' attention on the tests of divisibility learned before.</p>	
Common Misconceptions <p>Misconceptions:</p> <ol style="list-style-type: none"> 1. Students may mistake numbers ending in 4. 2. Students may mistake numbers ending in 8. <p>How to address the misconceptions:</p> <ol style="list-style-type: none"> 1. Demonstrate that the test of divisibility by 4 looks at the last two digits of a number. Point out to students that while some numbers that end in 4, such as 4, 24, and 44, are divisible by 4, this is not a test of divisibility. Other numbers that end in 4 are not necessarily divisible by 4. For example: 14 and 34. <p>Get students to recognise that when we look at the last two digits of a number, such as 1428, we ignore the first two digits (1 and 4) and focus only on the last two digits (2 and 8). Have them highlight, colour, or circle the last two digits to emphasise the correct digits to use in the test.</p>	

Language Support

Vocabulary: tests of divisibility

Revise even numbers with students. As the lesson proceeds, relate divisibility by 2 as a test of even numbers and focus students' attention on the tests of divisibility by 4 and 8 during the lesson as an extension of what they have learnt before.

Language Support

Provides educators with **teaching ideas and strategies** that better help **students learn and retain the key terms.**

Lesson Plans

Help educators who are new to the Cambridge Primary Maths curriculum framework to deliver lessons effectively. The lesson plan comes in an editable Word format for ease of lesson planning.



MCE Cambridge
Primary Maths
Teacher's Guide

Lesson Plan The lesson plan below will be available online for you to edit and customize according to your requirements.	
Lesson 1 (40 min)	
Warm up (5 min)	Chapter Opener <ul style="list-style-type: none"> • This scene provides a context for students to explain the difference between prime and composite numbers. • Facilitate a class discussion by asking students: <ul style="list-style-type: none"> - What do you notice about how the children are arranging the beads? (<i>Expected answers: Some are in equal rows and some are in a single row.</i>) - Why can't seven beads be arranged into equal rows like eight or ten beads? (<i>Expected answer: Seven is an odd number and is not divisible by two. Eight and ten are even numbers and are divisible by two. So they can be arranged into two equal rows.</i>) - What can you say about numbers such as eight, nine and ten? (<i>Expected answer: They can be arranged in different ways. They can be arranged in different groups and rows. Example: Eight can be arranged in one row of eight, two rows of four, or four rows of two. They have many factors. Example: The factors of 8 are 1, 2, 4, and 8.</i>) - What can you say about numbers such as seven? (<i>Expected answer: They can only be arranged in one way. Seven can only be arranged in one row of seven. They have only two factors. Example: The factors of 7 are 1 and 7.</i>) - Can seven beads be arranged in two equal rows? Show using counters or draw a picture to explain. (<i>Expected answers: No. Students' representations should show, for example, seven beads in a row of three and another row of four.</i>) • Use the MCE Cambridge app to launch the video* on page 1 of the Student's Book to introduce the definition of prime numbers, composite numbers and square numbers to the students. Revisit the song after they have learnt the different types of numbers. • Then go through the objectives of the chapter. <p><i>*This material has not been through the Cambridge International endorsement process.</i></p>
Lesson Introduction (5 min)	<ul style="list-style-type: none"> • Go through the learning objective that students will learn in this section. <p>Look Back</p> <ul style="list-style-type: none"> • Get students to recall prior knowledge on multiples of 2, 5, and 10 (up to 1000) and related multiples and factors by discussing as a class. • Have students find the similarities between the numbers. (<i>Expected answers: They are in ascending order; The numbers increase by one; Even numbers are arranged in groups of two rows; They are arranged in arrays; Some of the numbers are in equal groups of two or three; Some of the numbers are arranged in two or three rows.</i>) • SEL (Social awareness, Relationship skills): Encourage students to be confident when they share their knowledge and what they notice with their partner. At the same time, remind them to be patient, to listen carefully and to acknowledge what their partners share.
Lesson development: Anchor Task C-P-A (10 min)	<p>Thinking Cap</p> <ul style="list-style-type: none"> • The objective is to have students use their prior knowledge to explore new ideas and possible solutions through critical and creative thinking. • Prepare counters, marbles, or shapes for students to use to explore arranging numbers in groups and by their factors. Students are not expected to solve the problem at this stage. • Use the Think-Pair-Vote-Share strategy (see p.xii for detailed steps). <ul style="list-style-type: none"> - In the "Think" and "Pair" stages, allow students to attempt the task in pairs. - Have them practise characterising (TWM.05) by asking: <ul style="list-style-type: none"> o What is common about numbers 2, 3, 5, and 7 and their factors? o How are they similar? What pattern do you see? (<i>Expected answer: They only have two factors: 1 and itself.</i>) - In the "Pair" stage, connect their prior learning to the new idea by asking: <ul style="list-style-type: none"> o What are the factors for the numbers 1 to 10? (<i>Expected answer: 1 has only one factor, itself. 2 has two factors, 1 and 2. 3 has two factors, 1 and 3. 4 has three factors, 1, 2, and 4. 5 has two factors, 1 and 5. 6 has four factors, 1, 2, 3, and 6. 7 has two factors, 1 and 7. 8 has four factors, 1, 2, 4, and 8. 9 has three factors, 1, 3, and 9. 10 has four factors, 1, 2, 5, and 10.</i>) o What do you already know that could help you find the factors for each number? (<i>Expected answers: 2 = 1 x 2 so it has only two factors, 1 and 2...</i>)

MCE Cambridge
Primary Maths
Teacher's Guide

Marshall Cavendish Cambridge Primary Mathematics (2nd edition)
Stage 5

Differentiation

For support:

- Ensure that students know how to find the factors of numbers before moving on to the difference between prime and composite numbers.
- Go through questions 1 and 2 for students to build on the skill of finding the factors of a number less than 100.
- Go through questions 3 and 4 to help students build the skill of being able to tell the difference between prime and composite numbers. You may use the following samples or make up your own questions:
 1. Find the factors of 15. (*Expected answer: 1, 3, 5, and 15.*) This question requires students to find the factors of a number smaller than 100.
 2. How many factors does 28 have? (*Expected answer: The factors of 28 are 1, 2, 4, 7, 14, and 28. 28 has six factors.*) This question requires to identify the number of factors in a number smaller than 100.
 3. Is 10 a prime or composite number? Explain. (*Expected answer: 10 is a composite number. It has four factors: 1, 2, 5, and 10.*) This question requires students to identify a composite number.
 4. Why is 19 a prime number? Explain. (*Expected answer: It has exactly two factors, 1 and itself.*) This question requires students to state the definition of prime number.

For challenge:

- Have students work in pairs.
- Get students to take turns to roll two die and make their moves using a hundreds chart. At each number, have them find the factors and identify whether it is a prime or composite number. If they get it right, they get to move forward at their next turn. If they get it wrong, they move backwards. Get them to take turns and repeat the exercise. The first person to cross 100 wins.

Differentiated Instructions

Suggests further activities to *scaffold learning* for learners who require additional support and *extend learning* for more confident learners.

Schemes of Work

Enables educators to *plan lessons effectively* as they save time and effort in locating materials across the series.

Scheme of Work

Chapter 1 Special Numbers

Suggested time frame: 8 periods
Each period is 40 min.

Section	No. of Periods	Learning Objectives	Resources	Thinking and Working Mathematically (TWM) and Social and Emotional Learning (SEL)
Chapter Opener	3		<ul style="list-style-type: none"> • Student's Book p.1 • Video via MCE Cambridge app • Counters, shapes or sticks 	
A. Prime and Composite Numbers		5Ni.06 Understand and explain the difference between prime and composite numbers.	<ul style="list-style-type: none"> • Student's Book pp.2–5 • Activity Book pp.1–3 • Counters, marbles, or shapes • Cubes or blocks • TR1A Hundred Square Grid 	<ul style="list-style-type: none"> • TWM: Characterising Convincing Specialising • SEL: Social awareness Relationship skills
B. Tests of Divisibility	4	5Ni.07 Use knowledge of factors and multiples to understand tests of divisibility by 4 and 8.	<ul style="list-style-type: none"> • Student's Book pp.6–8 • Activity Book pp.4–6 • Number chips • Long piece of paper or ribbon 	<ul style="list-style-type: none"> • TWM: Convincing Classifying
Chapter Wrap Up	1		<ul style="list-style-type: none"> • Student's Book pp.9–10 • Activity Book p.7 • two counters (one red and one blue) • Dice • Papers 	<ul style="list-style-type: none"> • TWM: Convincing

Promotes Relatability through Real-life Contexts

This series caters to the international audience with the use of real-life contexts. Visuals are attractive and colourful, with scenarios and characters that the audience can more easily identify with. Learning is enhanced with the use of real-world contexts, enabling learners to better understand the relevance and make sense of the mathematical concepts, improving knowledge retention. This series also provides opportunities for Social-and-Emotional Learning, where students become more aware of oneself and others around them.

MCE Cambridge Primary Maths Student's Book

C

Make Special Number Sequences

What You Will Learn:

- Recognise square numbers from 1 to 100.
- Recognise and extend spatial pattern of square and triangular numbers.

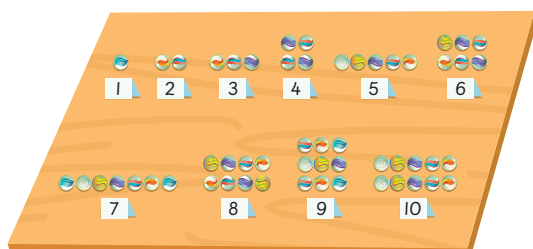
A

Prime and Composite Numbers

What You Will Learn:

- Tell the difference between prime and composite numbers.

Look Back



Look at the marbles. What do you notice about the arrangement? Tell your partner what the number of marbles in each set are and whether they can be arranged in equal rows.



Be confident when telling your partner what you notice.

Thinking Cap

What are the factors for numbers 1 to 10? What do you notice about the factors for numbers like 2, 3, 5 and 7? Describe the characteristics of these numbers.



What can you generalise about numbers like 2, 3, 5 and 7 and their factors?



What would the next square look like? Discuss your answer with your partner.

When someone is talking, listen carefully.



Social-and-Emotional Learning Mascots

Promotes values such as respect for others during teachable moments.

MCE Cambridge Primary Maths Student's Book

Let's Learn



To answer the farmer's question, carry out Step 1 in the Statistics Enquiry Cycle by identifying the problem and asking questions.

Which tomato plant should the farmer grow?



From these questions, the following data can be collected:

- height of tomato plants
- length of tomatoes
- mass of tomatoes

The data shown is called **continuous data**.

The data can be measured and has a range of values.

Colourful Visuals

Visuals promote *relatability* for learners.

Let's Practise

Questions include *real-world contexts* to promote relatability as learners practise key skills related to the concepts covered in the lesson.

Let's Practise

- Is 4818 divisible by 4?
 - Is 10 616 a multiple of 4? Describe to your partner how you would apply the test of divisibility to find out.

- Classify the numbers.

60 128 4224 9016

Numbers divisible by 4	Numbers divisible by 8

- Eddy has 336 stickers.
 - He wants to share the stickers equally among his three friends and himself. He says that there will be no stickers left after that. Do you agree or disagree with Eddy? Explain your answer.
 - If Eddy shares the stickers equally among seven friends and himself, how many stickers will be left? Explain to your partner how you found the answer. Convince your partner that your answer is correct.

Tick (✓) to show what you can do.

- I can recognise numbers that are divisible by 4 and 8.

Activity Book
Worksheet 1B

CHAPTER 2

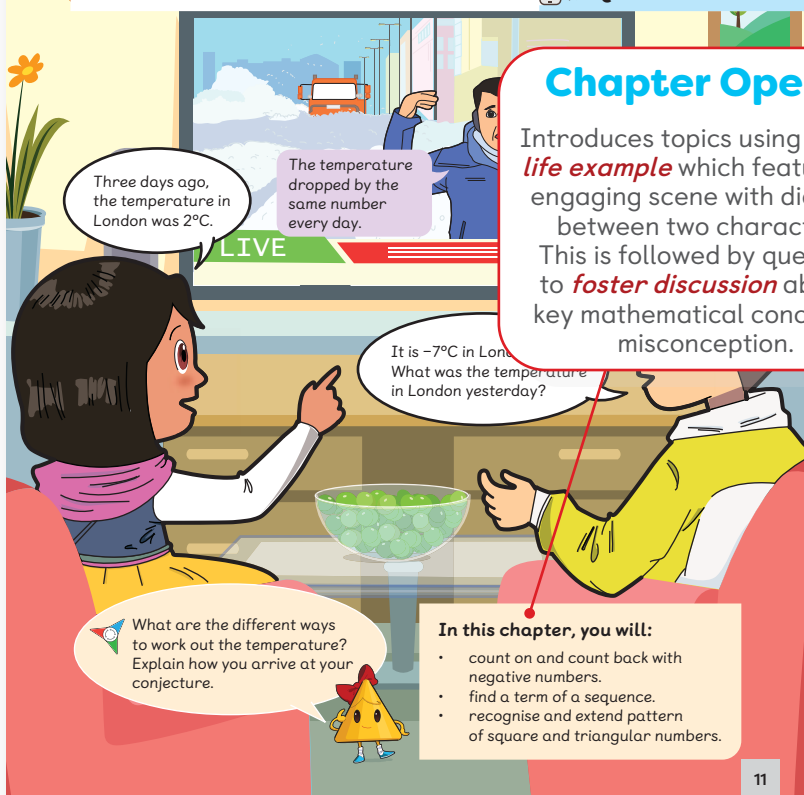
2

Number Sequence

Option Quiz

Chapter Opener

Introduces topics using a *real-life example* which features an engaging scene with dialogue between two characters. This is followed by questions to *foster discussion* about a key mathematical concept or misconception.



What are the different ways to work out the temperature? Explain how you arrive at your conjecture.

In this chapter, you will:

- count on and count back with negative numbers.
- find a term of a sequence.
- recognise and extend pattern of square and triangular numbers.



Delivers a Fun and Engaging Hybrid Learning and Teaching Experience

The series is designed to make learning joyful and meaningful. The digital resources provide a dynamic hybrid learning and teaching experience. Videos, quizzes, and virtual manipulatives are embedded throughout the book to make learning interactive for learners.

For educators, online PowerPoint lesson slides, along with lesson plans and annotatable eBooks, are provided for ease of lesson delivery. Colourful visuals and diagrams also help to make learning mathematics fun!

MCE Cambridge Primary Maths Student's Book

CHAPTER 4
Time

Option Watch!

Arrivals

Flight	From	Arrival Time (Local Time)
MLM007	Jakarta, Indonesia	12:05
SQ0149	Seoul, South Korea	12:50
QR998	London, United Kingdom	12:55

04:55 LONDON 10:55 JAKARTA 17:55 SINGAPORE 12:55 SEOUL

Virtual Manipulatives

Learners are able to visualise and better *understand abstract mathematical concepts* through the visual manipulatives.

Watch

Exciting video clips* that make *learning come alive* are embedded throughout the book! Video clips can be launched on a smartphone or tablet by scanning the page using the MCE Cambridge App.

CHAPTER 3
Decimals

Option Virtual Manipulative

Elephants are so big! I wonder how tall they are.

Elephants are the biggest animals on land. They grow up to 3.2 m tall. Their trunks can be as long as 2.15 m long.

Where have you seen numbers like 3.2 and 2.15? Why do we show numbers like this?

Look at its trunk! How long can it stretch?

In this chapter, you will:

- find the value of tenths and hundredths.
- compose, decompose and regroup decimals.
- round decimals to the nearest whole number.

*These digital resources will not go through the Cambridge International endorsement process.

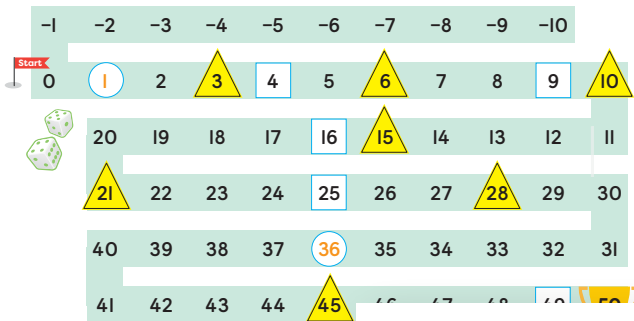
Maths CHAMPIONS

Play with your partner.

Materials:

- a game board
- 2 counters
- (1 red and 1 blue)
- 2 dice

- Step 1:** Place a counter at the start point.
- Step 2:** Roll both dice. Move the counter forward by the sum of the numbers rolled.
- Step 3:** If the counter lands on a square number, you miss a turn. If the counter lands on a triangular number, roll both dice again. Move the counter backward by the sum of the numbers rolled. If the counter lands on 1 or 36, choose either 'miss a turn' or 'move backward by 6'.
- Step 4:** Take turns to repeat Steps 2 and 3.
- The player to reach 50 first wins!



Maths Champions

This section comes in the form of an **activity** or **game** and serves as a **review** for learners.



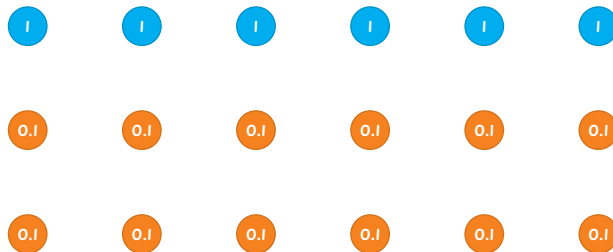
Don't give up if you lose. Try again!

Sticker Activities

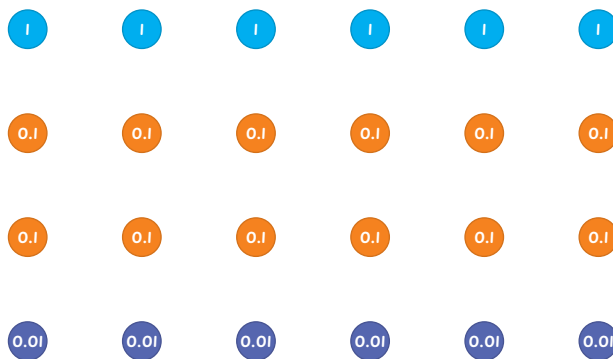
Learners are kept **engaged** while learning maths with hands-on sticker activities. Stickers can be found at the back of the Student's Book.

Stickers

Stickers for Chapter 3, Lesson A Let's Practise, page 28



Stickers for Chapter 3, Lesson B Let's Practise, page 32



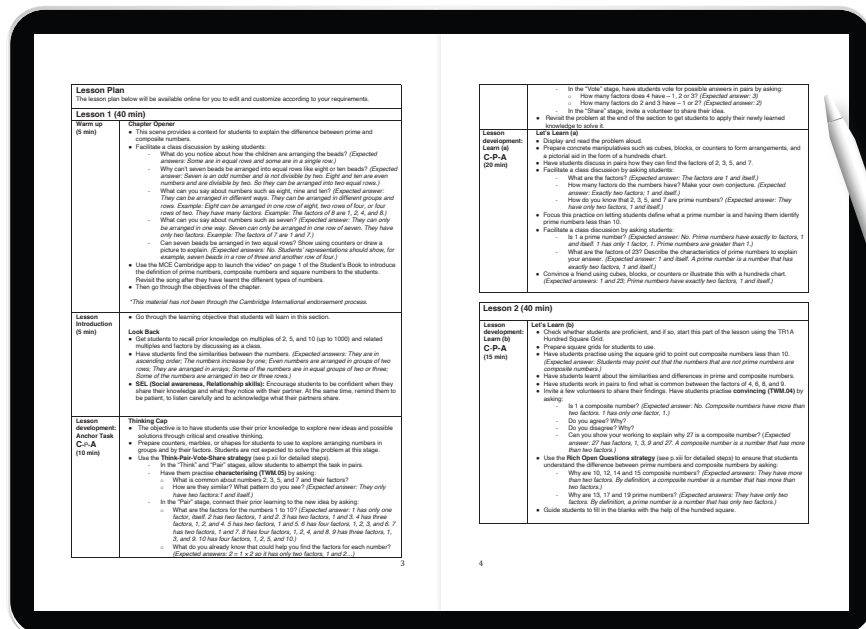
Annotatable Enhanced eBooks*

eBooks come with an **annotation function**, allowing answers to be saved and submitted. **Interactive digital resources** are also embedded throughout the book, keeping learners engaged. These activities can be attempted in learners' own time or delivered as part of an in-class activity.



Teacher's Digital Resources*

PowerPoint slides and **lesson plans** are provided in **editable formats** to support educators in effective lesson planning and delivery.



*These digital resources will not go through the Cambridge International endorsement process.

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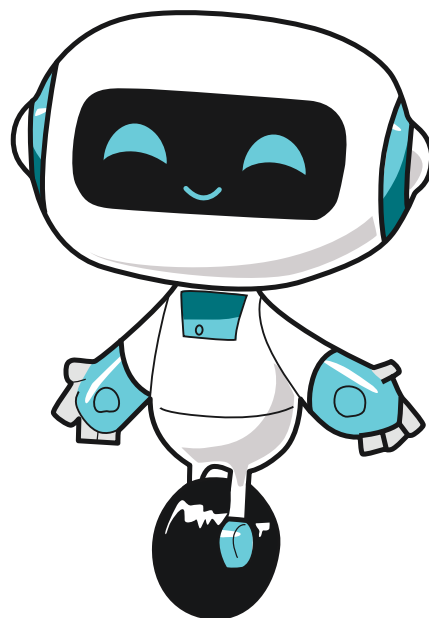
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Grade 7 – 9 | Age 13 – 15

The Marshall Cavendish Education **Maths Ahead** Series is designed for students from Grades 7 to 9. Focused on building up necessary mathematical knowledge, this series comprises of a Student's Book, Workbook, Teacher's Guide and digital resources for each level.

The **Maths Ahead** Package espouses the use of comics to enhance students' learning for the development of the 21st century competencies in the Mathematics classroom.

Based on the paper co-written by Dr Toh Tin Lam and other writers, the use of comics in our student book aims to empower learners through the following:

- Capture Interest and impress key mathematical ideas
- Enhance and extend communication of Maths concepts to facilitate understanding
- Minimise apprehension and anxiety by Increasing motivation to learn Mathematics
- Provide a bridge between Maths concepts and real-life context
- Engage and encourage students to participate actively in class discussions and collaboration



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MCE Cambridge Primary Science (2nd Edition) is designed to support educators and learners in fulfilling the Cambridge Primary Science curriculum framework (0097). The series is curated to hone young scientists who seek to make a difference with their knowledge and skills, and help learners build understanding of scientific concepts.

Series architecture

- Student's Book (Stages 1-6)
- Activity Book (Stages 1-6)
- Teacher's Guide (Stages 1-6)
- eBook (Stages 1-6)*
- Additional Digital Resources*

**These resources will not go through the Cambridge International endorsement process.*

