

**MY
PALS
ARE HERE!**

Science

International (2nd Edition)



**Fun and Engaging Learning Experience
Delivered Through Trusted Pedagogies**

Supports High Quality Teaching and Learning



Science International (2nd Edition) is a colourful and vibrant six-book series that presents science concepts to young learners in a fun and enjoyable way, catering to pupils with a variety of learning styles. At the core of MPAH Science International (2nd Edition) lies the same effective pedagogies that are iconic to the MPAH Science series, which has seen success for almost two decades of supporting primary science teaching and learning. The 2nd Edition continues the Inquiry-based Approach, structured around the 5E (Engage, Explore, Explain, Elaborate, Evaluate) Instructional Model, in order to develop pupils' science process skills. Together with a spiral progression in curriculum design and addition of new features, the series helps pupils acquire a deep understanding and appreciation of the scientific concepts.

Learner Books

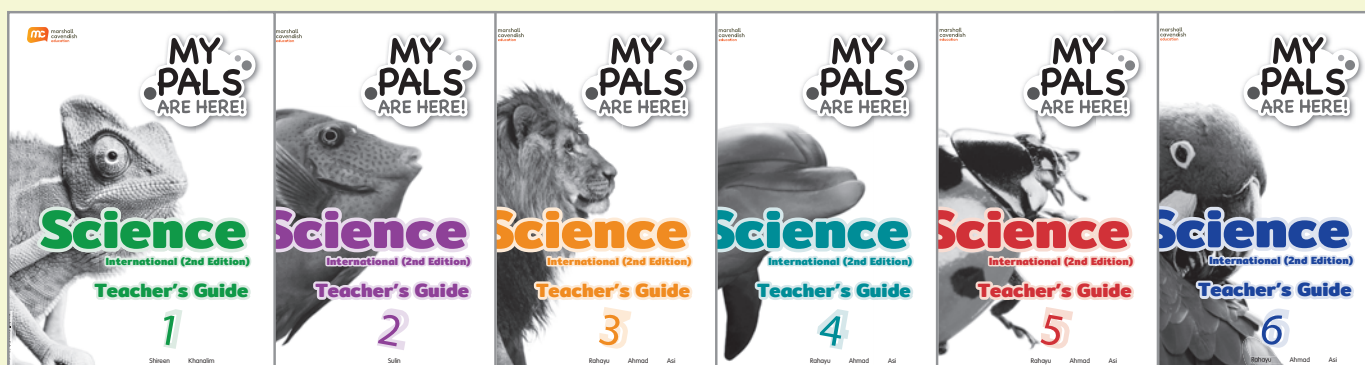


Activity Book



Teacher Resources

Teacher's Guide



Digital Resource Pack

- Digital Teacher's Guide P1-6
- Scheme of Work
- Editable Lesson Plans
- Question Bank P1-6
- PPT Slides P1-6

Equips Teachers for Success in Lesson Delivery

Together with a comprehensive Teacher's Guide, delivering a successful lesson is made easier and less time-consuming!

Chapter Opener



Develops inquiry skills in pupils by engaging them and inspiring curiosity through relatable daily life examples relevant to the topic, with attractive and engaging photographs.



Learning Outcomes



Provides an overview of syllabus coverage. It also serves as a checklist tool to encourage independent learning in pupils.

Section Heading



Introduces a new section with a question, which helps foster inquiry skills in pupils.



B

What Are the Uses of Air and Wind?

We breathe in air to stay alive.

The diver and the astronaut breathe in air from air tanks.



We need air for burning.



Explore



Builds 21st Century Competencies – inculcates critical and inventive thinking; communication, collaboration, and information skills in pupils.

Flashback



Highlights, where applicable, related prior concepts for meaningful learning. It also serves as a tool for recall and reinforcement.



Creative Science



Introduces an art-based project or activity, catering to kinesthetic and visual learners. On top of cross-disciplinary exposure, this serves as reinforcements of concepts learnt as well.

Quick Check



A series of questions after sections provide opportunities for formative assessment. Pupils are able to test their understanding of concepts learnt in this section.



Language Connect



Caters to linguistically inclined learners through activities like writing short stories, rhymes, synonyms and even storytelling, providing opportunities for pupils to express scientific concepts through language.

Research



Offers question prompts that pique pupils' curiosity to explore further beyond the classroom, discover fun facts and accumulate knowledge, building up essential research skills.

We Care



Builds 21st Century Competencies – offers pupils opportunities to gain awareness on current global environmental issues, such as conservation. Pupils also develop civic literacy, global awareness, and cross-cultural skills.



Supports High Quality Teaching and Learning



Engages and Captivates through Holistic Curriculum

What We Have Learnt



Provides a visual summary of all learning objectives that is useful for a quick recap and revision.

What We Have Learnt

Air



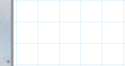
for breathing

is used

can be polluted by smoke and dust from



forest fire



factories

ings

Science Today



Showcases science concepts through real-life applications, highlighting recent developments in the world of science and technology. This ensures relevance and context in pupils' learning.

Science Today



Can you recall a time when the air was hazy?

Haze is caused by air pollution.

In 2015, the Southeast Asian haze affected many countries.

It was caused by forest fires.

The dirty air caused many people to fall sick.



When there is haze, people wear masks so they don't breathe in the polluted air.



Develops Confidence and Independence in Learning



Cultivates Global and Future Readiness

Test Yourself



Provides summative assessment with end-of-chapter questions that assess pupils' understanding of the concepts learnt. Questions that develop higher order thinking skills also included to challenge pupils.

Test Yourself

1. Fill in the blanks. Use the helping words.

- (a) We need to breathe in _____ (air / water) to stay alive.
- (b) We need air to _____ (burn / wash) things.
- (c) Smoke and _____ (dust / snow) can pollute the air.
- (d) _____ (Clean / Polluted) air can make us sick.
- (e) _____ (Rain / Wind) is moving air.

Activity Book
Let's Review, pages 6-7

SCIENCE WORDS

Air
Breathe
Burning

Dust
Haze
Pollution

Smoke
Unclean
Wind

Science Words (P1 to P2)



Highlights scientific terms for young learners to note and to provide a language focus for pupils.

Science Glossary (P3 to P6)



Highlights scientific terminology and provides their meanings for pupils' easy referencing and learning.

SCIENCE GLOSSARY

Difference

Property that varies between two or more objects

Material

What an object is made of

Measure

To use an instrument to find the size or mass of an object

Property

Feature or characteristic

Reduce

To lessen the amount

Similarity

Property shared between two or more objects



Supports High Quality Teaching and Learning



Engages and Captivates through Holistic Curriculum

Activity 1 Uses of Air and Wind

► Process skills: Observing, analysing

Circle the pictures that use air or wind.

A



B



C



D



E



F



Activities

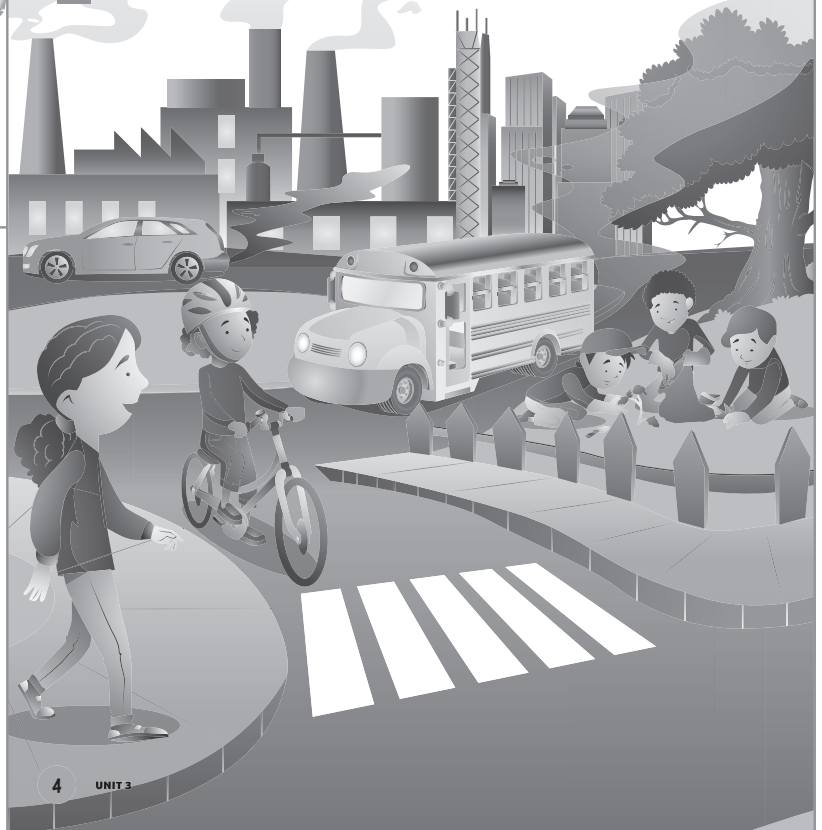


Builds scientific inquiry and process skills in pupils through hands-on and relatable activities with real-life contexts. These offer opportunities for pupils to experience scientist-like endeavours.

Activity 2 Clean and Polluted Air

► Process skills: Observing, analysing, communicating

A Cross out the things that dirty the air.



4 UNIT 3



Develops Confidence and Independence in Learning



Cultivates Global and Future Readiness

Let's Review

A Choose the correct answer. Write A, B, C and D in the brackets provided.

- _____ can dirty the air.
 A Trees
 B Walking
 C Bicycles
 D Factories ()
- _____ do **not** need air to live.
 A Fish
 B Cars
 C Astronauts
 D Scuba divers ()
- Which of the following will **not** pollute the air?
 A Forest fires
 B Burning fuels
 C Volcano eruptions
 D Planting more trees

6 UNIT 3

Let's Review



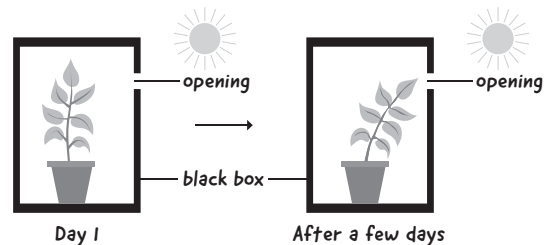
Assesses pupils' overall understanding of the chapter through a formative assessment review activity.



Revision Exercise

A Choose the correct answer. Write A, B, C or D in the brackets provided.

- A potted plant was placed in a black box with an opening. The box with the plant was then placed under the Sun. After a few days, the plant grew to one side as shown.



What does the experiment show?

- The stem is weak.
- The plant responds to sunlight.
- The plant needs water to grow.
- The box is too small for the plant.

()

8 REVISION EXERCISE

Revision exercises



Increases exam preparedness and confidence using exam-format questions that develop higher order thinking skills. This is a good tool for consolidation, summative assessment, and revision.



Develops Confidence and Independence in Learning



Cultivates Global and Future Readiness

What's In the Teacher Resources?

Packed with information that is required to conduct a lesson, the Teacher Resources provide Schemes of Work, 5E-focused Lesson Plans, as well as helpful notes such as suggested activities and differentiation ideas. PowerPoint lessons slides are also available, making it hassle-free for a teacher to conduct a successful lesson with little preparation time required.

Teacher Resources

UNIT 6

OBJECTS AROUND US

SCHEME OF WORK

Suggested time frame: 11 periods (1 period is approximately 40 minutes.)

Lesson	No. of Periods	Learning Objective(s)	Process Skill(s)	Resources and material(s)
1	2	<ul style="list-style-type: none"> Know different properties of objects. 	<ul style="list-style-type: none"> Classifying Communicating Comparing Observing 	<ul style="list-style-type: none"> Textbook, pp. 1–5 Activity Book, pp. 1–2 PowerPoint, slides 3–7 Objects around the classroom Yellow rubber glove, metal fork
2	2	<ul style="list-style-type: none"> Know how to compare objects based on the similarities and differences in their properties. 	<ul style="list-style-type: none"> Analysing Classifying Communicating Comparing Generating possibilities Observing 	<ul style="list-style-type: none"> Textbook, pp. 6–7 Activity Book, pp. 3–4 PowerPoint, slides 8–12 Pupils' pencil cases Scissors, glue, various materials of different colours Aluminium foil, tissue paper, towel, food cling wrap / plastic bag, water
3	2	<ul style="list-style-type: none"> Know how to choose appropriate materials for making objects. 	<ul style="list-style-type: none"> Analysing Communicating Evaluating formulating hypothesis Infering Observing Using apparatus and equipment 	<ul style="list-style-type: none"> Textbook, pp. 8–9 Activity Book, pp. 5–6 PowerPoint, slides 13–16 Objects found in the classroom or around the school Plastic spoon, wooden spoon, metal spoon Water, nylon, plastic, cotton, polyester, 4 plastic cups, 4 rubber bands Umbrella
4	2	<ul style="list-style-type: none"> Know how to measure the size and mass of objects. 	<ul style="list-style-type: none"> Communicating Comparing Evaluating 	<ul style="list-style-type: none"> Textbook, pp. 10–11 Activity Book, pp. 7–8 PowerPoint, slides 17–19

Scheme of Work

Outlines the curriculum content with an overview of critical details such as:

- number of periods
- process skills covered
- resource usage guide

Editable version is also included in the digital resources.

Objects Around Us

1

			Using apparatus and equipment	<ul style="list-style-type: none"> Ruler, measuring tape, clothes hanger, 2 plastic cups, hole puncher, strings, 3 small objects from your pencil case Pen, pencil, eraser, pencil case, ruler, paperclips, measuring tape
5	3	<ul style="list-style-type: none"> Know some ways to reduce waste. 	<ul style="list-style-type: none"> Analysing Classifying Communicating Comparing Evaluating Generating possibilities Observing Using apparatus and equipment 	<ul style="list-style-type: none"> Textbook, pp. 12–18 Activity Book, pp. 9–11 PowerPoint, slides 20–23 Blanket, plastic bottle, jam jar, tyre

5E Lesson Plan

Guides teachers through the 5E instructional model with detailed lesson plans designed and written with the model in mind. This is helpful for both new and experienced teachers.

5E	Lessons	Resources
Additional Activity	<i>(Skills: Communicating, observing)</i> <ul style="list-style-type: none"> Get pupils to observe the picture of a rubber glove and the metal fork on PowerPoint slide 7. Give pupils an actual rubber glove and metal fork to touch and feel. Get pupils to describe the rubber glove and the metal fork using the properties that they have learnt in this lesson. <ul style="list-style-type: none"> The rubber glove is yellow in colour. The rubber glove is made of rubber. 	<ul style="list-style-type: none"> PowerPoint, slide 7 Yellow rubber glove, metal fork

B How Are Materials Chosen to Make Objects?

Lesson 3

Duration of lesson: 2 periods

Learning objective

- Know how to choose appropriate materials for making objects.

Process skills

- Analysing, communicating, evaluating, formulating hypothesis, inferring, observing, using apparatus and equipment

Learning Objectives

Shows all the key learning outcomes for easy reference. It also serves as a checklist for teachers.

5Es	Lesson	Resources
Engage (10 min)	<i>(Skills: Communicating, inferring, observing)</i> <ul style="list-style-type: none"> Use PowerPoint slide 13 to inform pupils that by the end of the lesson, they should be able to choose appropriate materials for making objects. Get pupils to observe the objects on PowerPoint slide 14. Ask pupils the following questions: <ul style="list-style-type: none"> Why are these objects made of the materials mentioned? What are the properties of the materials that make them suitable for making the objects? <ul style="list-style-type: none"> Wood is hard. Metals are strong. Plastic is waterproof. Rubber is elastic. Glass is transparent. 	<ul style="list-style-type: none"> PowerPoint, slides 13–14
Explore (15 min)	<i>(Skill: Analysing)</i> <ul style="list-style-type: none"> Get pupils to find objects in the classroom or around the school that are made of metal, plastic or wood. Ask pupils the following questions: <ul style="list-style-type: none"> Why are these materials used to make the objects? How is the choice of material important for the use of the object? <ul style="list-style-type: none"> Window: Glass is transparent so light can pass through the window to enter the room / classroom. Table: Metal used for the legs is strong so the table can withstand the weight of the books. Water bottle: Plastic is waterproof so the bottle can contain water. 	
Explain (15 min)	<i>(Skill: Communicating)</i> <ul style="list-style-type: none"> Use PowerPoint slides 15–16 to explain to pupils how properties of materials used for each object are very closely related to the purpose of the object. Use examples on Textbook pp. 8–9 to explain further. 	<ul style="list-style-type: none"> Textbook, pp. 8–9 PowerPoint, slides 15–16
Elaborate (15 min)	<i>(Skills: Inferring, observing)</i> <p>Note: Teacher to prepare spoons made of different materials beforehand</p> <ul style="list-style-type: none"> Let pupils touch and feel the spoons made of different materials. 	<ul style="list-style-type: none"> Textbook, Explore, p. 9 Plastic spoon, wooden spoon, metal spoon

Objects Around Us

7

Answers to Textbook Questions

Quick Check, Textbook p. 5

1. Size, shape, colour, material (Accept other possible answers.)
2. Wood, metal, plastic, rubber (Accept other possible answers.)

Quick Check, Textbook p. 9

Plastic. It is light and does not allow water to pass through.

Test Yourself, Textbook p. 15

1. Group B
2. (a) B
(b) A
(c) shape / size
(d) colour
3. (a) The mass of object X is smaller than the mass of object Y. / The mass of object Y is greater than the mass of object X.
(b) Measuring tape
4. Tying up a plastic bag containing waste before throwing it into the bin does not help reduce waste. It helps keep the waste from spilling. However, the amount of waste in the plastic bag remains the same.

Answers to Activity Book Questions

Answers

Provides answers to

- Quick Check (Textbook)
- Test Yourself (Textbook)
- Let's Review (Activity book)
- Revision Exercises (Activity book)

Weak
Sti
Soft
Non-stretchable
Transparent

answers.)

.. it is too hard / cannot bend / not comfortable. (Accept other possible

Conclusion

use; material

Activity 3, Activity Book pp. 7–8

Conclusions

1. ruler / measuring tape
2. lever balance

Let's Review, Activity Book pp. 10–11

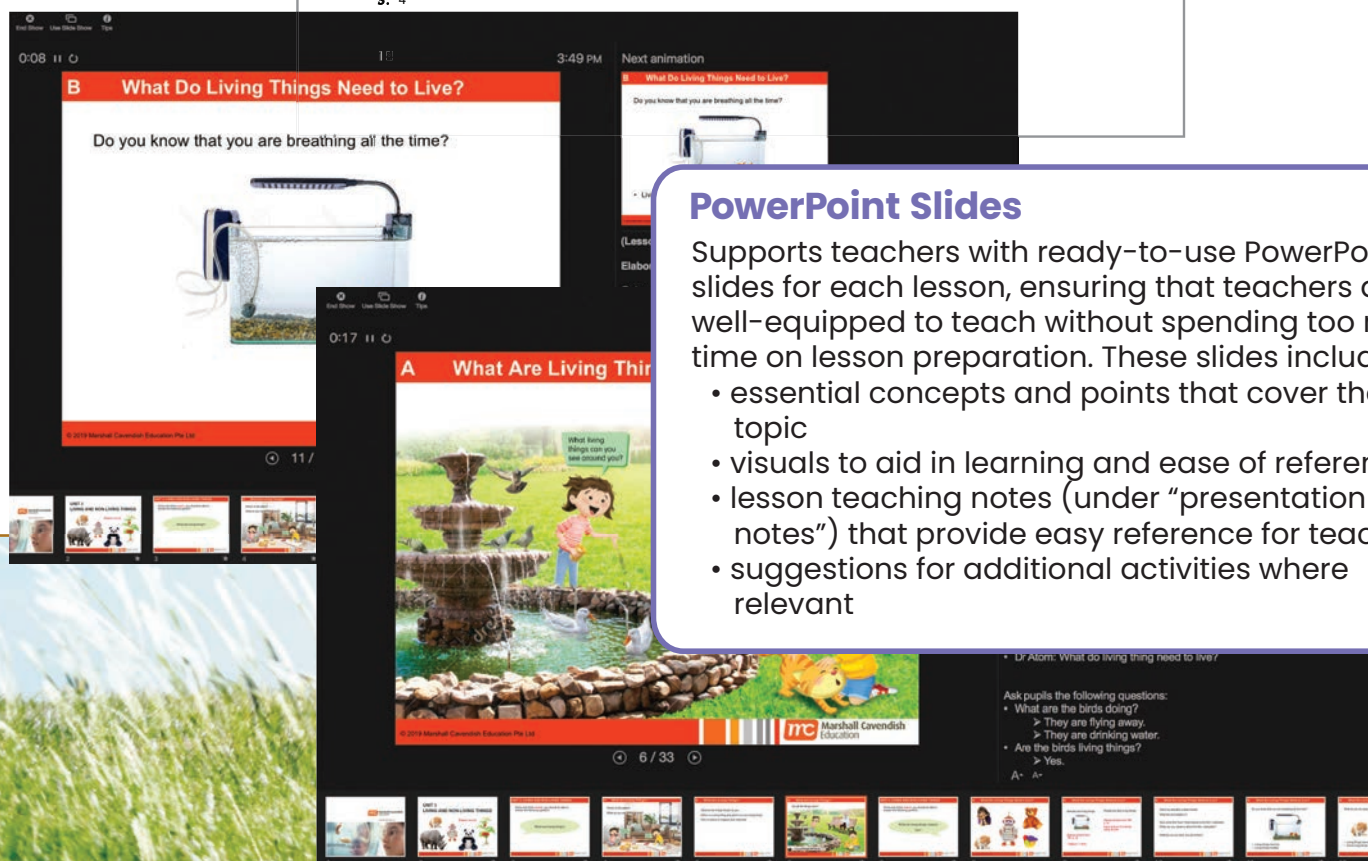
Section A

1. 3
2. 2
3. 4

PowerPoint Slides

Supports teachers with ready-to-use PowerPoint slides for each lesson, ensuring that teachers are well-equipped to teach without spending too much time on lesson preparation. These slides include:

- essential concepts and points that cover the topic
- visuals to aid in learning and ease of reference
- lesson teaching notes (under "presentation notes") that provide easy reference for teachers
- suggestions for additional activities where relevant



Learner Book

9789814861410	My Pals Are Here Science 2nd Editon	Grade 1
9789814861403	My Pals Are Here Science 2nd Editon	Grade 2
9789814861427	My Pals Are Here Science 2nd Editon	Grade 3
9789814861434	My Pals Are Here Science 2nd Editon	Grade 4
9789814861441	My Pals Are Here Science 2nd Editon	Grade 5
9789814861458	My Pals Are Here Science 2nd Editon	Grade 6

Activity Book

9789814861465	My Pals Are Here Science 2nd Editon	Grade 1
9789814861472	My Pals Are Here Science 2nd Editon	Grade 2
9789814861489	My Pals Are Here Science 2nd Editon	Grade 3
9789814861496	My Pals Are Here Science 2nd Editon	Grade 4
9789814861502	My Pals Are Here Science 2nd Editon	Grade 5
9789814861519	My Pals Are Here Science 2nd Editon	Grade 6

Teachers Guide

9789814861526	My Pals Are Here Science 2nd Editon	Grade 1
9789814861533	My Pals Are Here Science 2nd Editon	Grade 2
9789814879705	My Pals Are Here Science 2nd Editon	Grade 3
9789814879712	My Pals Are Here Science 2nd Editon	Grade 4
9789814879729	My Pals Are Here Science 2nd Editon	Grade 5
9789814879736	My Pals Are Here Science 2nd Editon	Grade 6

Also available in this series



My Pals are Here! Maths (4th Edition)

My Pals are Here! Maths (4th Edition) is a six-level primary Mathematics series that is widely adopted and highly popular amongst teachers and pupils worldwide. Being the main Maths package used in Singapore since 2001, it has contributed to Singapore's success in topping international studies such as Trends in International Maths and Science Study (TIMSS) and Programme for International Student Assessment (PISA). It is used in more than 50 countries, 10 of which are using country-specific adaptations of the series. Favoured for its engaging visuals, hands-on activities and digital interactives, My Pals are Here! Maths makes learning fun and has proven to be effective in developing and honing pupils' 21st century competencies.

Updated based on the latest mathematical thinking and best practices in the 2021 Singapore Mathematics Syllabus, **My Pals are Here! Maths (4th Edition)** continues to bring you the very best of what has been provided in the previous editions. The series is now made more suitable for a hybrid classroom with a comprehensive blend of print and digital resources which are designed to be easy to use. With the high-quality resources of the enhanced series, teachers can now better develop their pupils into resilient, critical and creative thinkers and future-ready problem solvers.

Product Architecture

Learner Book



Print and eBook

The eBook can be annotated and includes interactive digital resources such as animated openers, learn videos, and virtual manipulatives.

Workbook

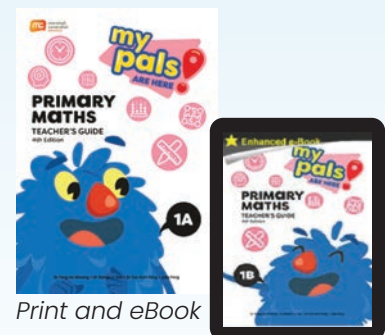


Print and eBook

The eBook can be annotated and marked by teachers through the eWorkbook module on



Teacher's Guide



Print and eBook

The eBook can be annotated and includes printable teacher resources such as schemes of work, lesson plans, class presentations, and worked solutions.

In addition, teachers are also given access to a question bank.

CUSTOMER SERVICES

Private Bag X19, Northlands, 2116

Tel: 011 731 3300

Email: customerservices@macmillaneducation.co.za

Website: www.macmillaneducation.co.za

Facebook: MacmillanSouthAfrica

Twitter: @MacEdSA

AGENCY AND DIGITAL SALES

Kilayne Pelser

Agency and Digital Sales Manager

Cell: 076 994 0985

Email: Kilayne.Pelser@macmillaneducation.co.za

Nicole Smith

Agency and Digital Sales Consultant

Cell: 082 944 6968

Email: Nicole.Smith@macmillaneducation.co.za

NATIONAL

Sibonelo Mkhasibe

Head of National School Sales

Cell: 066 474 3793

Email: Sibonelo.Mkhasibe@macmillaneducation.co.za

Antoinette de Vries

Head of National Commercial Sales and Marketing

Tel: 011 731 3455

Email: Antoinette.deVries@macmillaneducation.co.za

MACMILLAN TEACHER CAMPUS

Tel: 011 731 3409

Email: za.mtc@macmillaneducation.co.za

EASTERN CAPE

Ayanda Nkunzi

Sales and Marketing Representative

Cell: 082 949 9664

Email: Ayanda.Nkunzi@macmillaneducation.co.za

FREE STATE

Peter Ledwaba

Provincial Sales Manager

Cell: 076 994 0986

Email: Peter.Ledwaba@macmillaneducation.co.za

GAUTENG

Asheena Patel

Provincial Sales Manager

Cell: 066 138 2746

Email: Asheena.Patel@macmillaneducation.co.za

Phathi Kona

Sales and Marketing Representative

Cell: 060 908 8209

Email: Phathi.Kona@macmillaneducation.co.za

KWAZULU-NATAL

Ernest Mshengu

Provincial Sales Manager

Cell: 082 528 3712

Email: Ernest.Mshengu@macmillaneducation.co.za

Qhawe Gumede

Sales and Marketing Representative

Cell: 079 877 4995

Email: Qhawe.Gumede@macmillaneducation.co.za

LIMPOPO

Mmatapa Moabelo

Sales and Marketing Representative

Cell: 078 804 0612

Email: Mmatapa.Moabelo@macmillaneducation.co.za

MPUMALANGA

Lillian Vuma

Sales and Marketing Representative

Cell: 078 803 9918

Email: Lillian.Vuma@macmillaneducation.co.za

NORTH WEST

Mmaabo Modisane

Provincial Sales Manager

Cell: 071 399 1337

Email: Mmaabo.Modisane@macmillaneducation.co.za

NORTHERN CAPE

Liezl Abrahams

Sales and Marketing Representative

Cell: 071 441 9144

Email: Liezl.Abrahams@macmillaneducation.co.za

WESTERN CAPE

Liezl Abrahams

Sales and Marketing Representative

Cell: 071 441 9144

Email: Liezl.Abrahams@macmillaneducation.co.za

Tania Zeederberg

Sales and Marketing Representative

Cell: 066 211 4352

Email: Tania.Zeederberg@macmillaneducation.co.za

About Marshall Cavendish Education

Marshall Cavendish Education (MCE) is a global education solutions provider dedicated to nurturing the joy of learning and preparing students for the future. We believe the best way to do so is by simplifying learning and listening to the needs of schools, teachers, students, and parents.

MCE makes world-class educational content more accessible through a seamless experience that integrates both print and digital resources. We provide holistic and end-to-end solutions customised to the school's requirements, with professional development to help educators implement the curriculum.

We've worked with ministries, policymakers, educators, and parents in over 90 countries, designing education solutions in 14 languages for Pre-K to 12. MCE is the only Asia-based publisher that is an endorsement partner of Cambridge International Education.

www.mceducation.com

About Macmillan Education

Macmillan Education is a world-class educational content and service provider. As a trusted publishing brand, we support learners, teachers and institutions through a lifetime of learning by providing them with content in the most relevant, engaging and flexible formats.

We aim to support learners to reach their full potential through our revered learner-support programmes. We are a preferred provider of cutting-edge training and excellent development and support programmes for educational professionals and learners alike.

www.macmillaneducation.co.za