

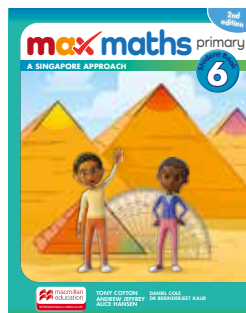
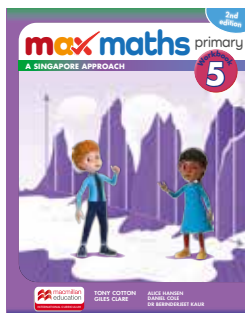
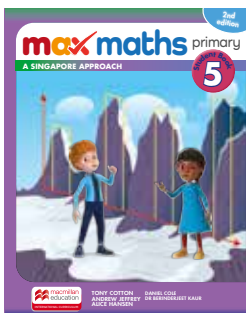
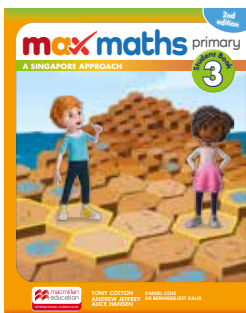
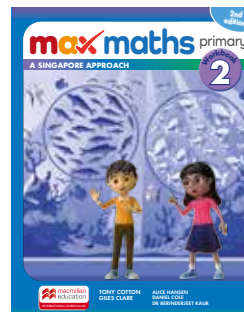
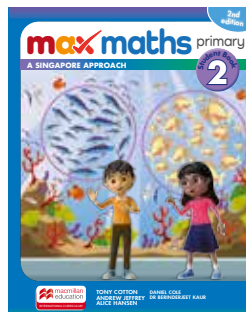
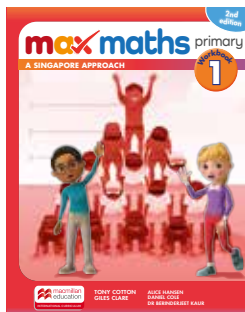
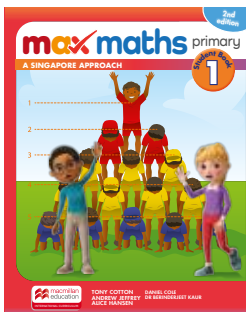
Unlock the power
of learning maths
in English

max maths primary

NEW
EDITION!

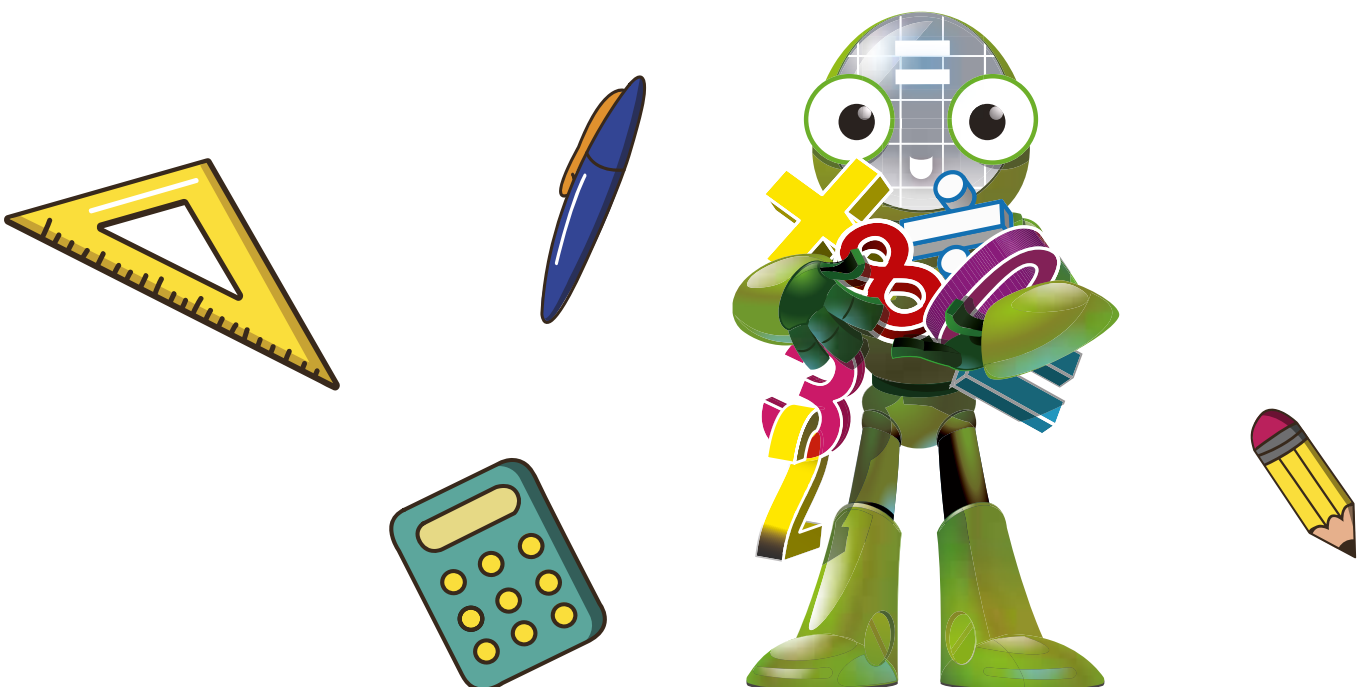
A SINGAPORE APPROACH

PRIMARY • YEARS 1 – 6



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An Introduction to Max Maths Primary: A Singapore Approach Second Edition

Max Maths Primary: A Singapore Approach Second Edition has been developed by internationally renowned experts for Macmillan Education in partnership with Star Publishing, Singapore's leading publisher for primary mathematics. Based on research and substantial evidence, the Max Maths series is a highly effective approach to teaching that ensures ALL students succeed.

The Concrete-Pictorial-Abstract (CPA) Approach is used to teach each core mathematics concept. This methodology encourages students to think mathematically instead of learning by rote topics and concepts they do not understand. **Max Maths Primary: A Singapore Approach Second Edition** is designed to help students develop high-level cognitive skills which will enable greater progression.

The second edition has been updated to the current Cambridge syllabus. It retains all of the engaging and well-loved features that bring the Singapore Approach to your international school classroom.



How Max Maths Primary Adds Up

- A consistent approach is used throughout the resources to develop thinking and problem-solving skills through both independent and collaborative learning.
- Each resource uses real-world contexts to teach mathematical concepts and activities that support the Concrete-Pictorial-Abstract (CPA) approach. This approach has been proven to develop highly skilled young mathematicians.
- There are clear explanations of new mathematical terms, with colour illustrations to support students whose first language is not English.
- The Teacher's Guide also supports teachers by highlighting the language that needs to be learned in each unit, giving both learner and teacher the tools they need to succeed.
- It is a 100% match to the Cambridge Primary Maths Curriculum Framework (stages 1-6).
- It is an accessible and effective approach with carefully scaffolded activities throughout, ensuring all pupils understand each concept and are confident to move to the next stage.
- To support the Teacher's Guide, there are two additional resources which provide step-by-step guidance to help embed the Bar Modelling Method. Written by Singapore Maths expert, Andrew Jeffrey, it is an essential tool for using this highly effective method to support pupil attainment.
- It is supported by two specially designed professional development courses. These courses are designed to explain the concepts of Asian Maths pedagogy and how to use them to teach in the classroom.
- The characters in the books are a key way of involving pupils and they form a narrative from Years 1 to 6 as they progress through the content.



New Features

The second edition has been updated to the current Cambridge Curriculum. Units have been reordered to match the new curriculum learning journey and the content has been updated to cover the new Learning Objectives.

Below are some examples of new features and content from across the series.

Increased focus on Odd and Even numbers

Covers subtracting fractions with the same denominator

Using symbols to represent quantities in addition and subtraction calculations

New unit: Area and Perimeter

Practical activities for measuring objects in kg and g

Organising, representing and interpreting dot plots

Composing, decomposing and regrouping numbers with up to 3 decimal places



Teacher Training

Massive Open Online Courses (MOOCs)

At Macmillan Education, our vision is to deliver innovative solutions that will drive student performance and help educators and institutions to achieve excellent results. Providing training that is relevant and accessible to all is one key way we can support those schools that are using our materials.

In partnership with the University of Southampton and Future Learn, we have created **two free online courses (MOOCs)** to support teachers who are interested in finding out more about why Asian Maths is so successful and how to implement this methodology within the classroom.

Our MOOCs:

- World Class Maths: Asian Teaching Methods
- World Class Maths: Asian Teaching Practice

Both MOOCs include:

- Course content developed and led by a world-leading expert in maths education
- Coverage of both theory and classroom application
- Options to follow a set timetable or to learn at a flexible pace
- A forum for exchanging ideas and asking questions
- Optional certificate of completion (fee applicable)

For more information, please visit www.macmillanic.com

UNIVERSITY OF
Southampton

 **Future
Learn**

Teacher Training Options

Please contact us via international.curriculum@macmillaneducation.com to discuss more about our partnership with NILE and what we can offer you for supporting teachers and learners whose first language may not be English.



Student Books (Print and Digital bundle)


The Student Books form the basis for classroom learning. They are highly engaging with a 4-colour illustrative design featuring the Max Maths team. They employ key aspects of the Singapore Approach with CPA and Bar Modeling methodologies.

The Student Books are underpinned by investigative and problem-solving approaches to real-world problems, giving learners the opportunity to develop communication and collaboration skills in their maths classes. Additional practice is clearly linked to the workbooks. End-of-topic activities test language comprehension as well as topic knowledge.


Digital Student Books are now included alongside the printed Student Books.

Counting to 10
Let's Learn Together


1 Count to 10.




1 one




2 two



3 three



4 four



5 five

Student Book 1

Counting up to 1 000
Let's Learn Together

1 Recall that 10 ones make 1 ten.

I can show how 10 ones make 1 ten using blocks.

I can show how 10 ones make 1 ten using beads.

Also recall that 10 tens make 1 hundred.

I can show how 10 tens make 1 hundred using blocks.

I can show how 10 tens make 1 hundred using beads.

Student Book 3

Counting to 10 000
Let's Learn Together

1 Recall counting with blocks.

Each of these sticks has 10 small blocks.

We can use them to count in 10s.

(a) Each small block represents one. We can use these blocks to count in ones.



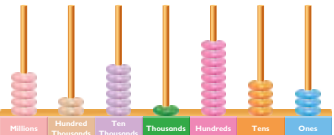
1 one 2 two 3 three 4 four 5 five 6 six

It's easy to count from one to ten. Let's try something more difficult.

Student Book 4

Numbers to the millions
Let's Learn Together

1 Look at the beads below. Can you write the number they represent? Can you write the number in words?



Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	
5	0	0	0	0	0	0	five million
2	0	0	0	0	0	0	two hundred thousand
	6	0	0	0	0	0	sixty thousand
		1	0	0	0	0	one thousand
			9	0	0	0	nine hundred
				4	0	0	forty
					3	0	three
5	2	6	1	9	4	3	

$5\,000\,000 + 200\,000 + 60\,000 + 1\,000 + 900 + 40 + 3 = 5\,261\,943$

We read and write 5 261 943 as five million, two hundred and sixty-one thousand, nine hundred and forty-three.


Student Book 6


Workbooks


The Workbooks support learners through the objectives in the Cambridge maths curriculum framework, providing extra practice to complement the Student Books and reinforce understanding. The Workbooks encourage learners in practical problem-solving activities and offer structured exercises to embed conceptual learning.


Practice 2: Counting to 20

1 Count the objects.

(a) 

(b) 

(c) 


(d) 


Workbook 1

Practice 5: Addition review

1 Complete the following.

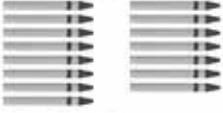
(a) How many chocolates are there altogether?



 $\square + \square = \square$

There are chocolates altogether.

(b) How many crayons are there altogether?




$\square + \square = \square$

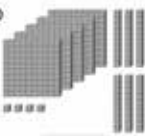
There are crayons altogether.

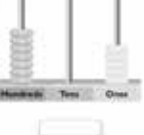
Workbook 2


Practice 2: Counting up to 1000

1 Look at the beads and counting blocks. Write the number.

(a) 

(b) 


(c) 

(d) 

Workbook 3


Practice 6: Word problems

1 A classical guitar costs \$638.
An electric guitar costs \$457.
Find the total cost of the two guitars.
Let's draw a model to represent the problem.



$\square + \square = \square$

We add the price of each guitar to find the total cost.
Write an estimate first.
Estimate =



So, the total cost of the two guitars is \$.

Workbook 4

Teacher's Guide

The Teacher's Guide comes with full support to guide teachers through each topic, including English language support. A suggested instructional approach, assessment, additional class activities and full answers are provided.

Updated to support curriculum changes



Chapter 1: Numbers up to 20

Learning objectives

Strand	Sub-strand	Performance standards
Number	Counting and sequences	1Nc.01 Count objects from 0 to 20, recognising conservation of number and one-to-one correspondence.
		1Nc.02 Recognise the number of objects presented in familiar patterns up to 10, without counting.
		1Np.03 Understand the relative size of quantities to compare and order numbers from 0 to 20.
Number	Integers, powers and roots	1Nc.04 Count on in ones, twos or tens, and count back in ones and tens, starting from any number (from 0 to 20).
		1Nc.06 Use familiar language to describe sequences of objects.
Number	Place value, ordering and rounding	1Nl.01 Recite, read and write number names and whole numbers (from 0 to 20).
		1Np.04 Recognise and use the ordinal numbers from 1st to 10th.

Maths background

This chapter rehearses key counting skills from Grade K and builds on them as part of a spiral approach to the curriculum. The chapter consolidates counting and ordering numbers to 20. Other topics include developing an understanding the meaning of zero, using positional number words and comparing amounts in sets.

Common misconceptions

- Learners may find it difficult to count on from any number other than 1, e.g. when asked to work out 10 and 5 more, they may not count on from 10, saying 1 instead of 11. Remind learners to think of and say the next number (here, 11) after the number they are starting from (here, 10) before counting on.
- Learners may write numerals in the wrong order when writing numbers in the tens, e.g. 41 instead of 14. This is because the 4 is said first. Reinforce the link between the meaning and the numerals, e.g. 10 and 4 more is 14.
- Learners may find the concept of zero confusing because it represents an absence of a quantity (none) while still having a numerical value when counting. Learners should understand the value of positive integers before introducing zero. Then use objects like a set of counters to show how zero still represents a quantity of a set (in this case, no counters).

Practising the language of maths

Numbers to 20	Maths vocabulary
numbers zero to 20	compare
count	bigger/smaller
tens	biggest/smallest
ones	order
makes (equals)	ordinal
more	complete
fewer/less	set/group first/second/third/fourth/fifth/sixth/seventh/eighth/ninth/teenth
	count backwards
	pattern

Challenges and principles

It is becoming increasingly popular for primary schools where teachers and learners may not have English as a first language to teach at least one subject through English. The reasons for doing so vary according to the educational context: they range from a straightforward objective to improve second-language proficiency – vital in a world where language skills enhance our learners' ability to continue into tertiary education or the workplace – to the simple motivation of embracing a new methodology, which can enhance cognitive development and encourage global awareness in our children.

What is it about teaching in English that interests you? For many teachers it represents the chance to use and develop their own second language, become familiar with new resources and a new methodology and maybe even set up links with other international schools. If the adoption of EMI is across the whole school, then there may also be the chance to collaborate with other teachers and create a positive, supportive team approach. In many contexts, the content teacher is supported by the English teacher or native-speaker language assistants.

If teachers are concerned about their English not being good enough then they need support, either in the form of training or the adoption of a more staged approach to teaching in English, which will allow them confidence to develop. If you find yourself in the situation you could start by teaching in English for just 10 minutes per lesson (a 'language shower') and gradually increase this as your confidence improves.

It is important to acknowledge that EMI is not just doing what you were doing before, but doing it in English! The very fact that you are teaching in a language that is to a greater or lesser extent 'new' to your learners necessitates the adoption of strategies that scaffold the learning in such a way that the content is taught as effectively as in the primary language. Learning about these strategies and techniques will make the content accessible to the learners, which is the objective of this course.

Making 10 Learners Grade 1 or 2 Addition

The purpose of the information gap activity is to enable learners to show their competence with addition between 1 and 10, and to provide an opportunity to have a 'real' conversation in English.

- Learners receive 2 picture cards each, showing pictures of fruit.
- Child A has a card with 3 apples, and another with 8 bananas.
- Child A must name aloud the items, telling us what is on the card to find a classmate who has a card with 7 apples and another classmate with a card with 2 bananas, making a total of 10.
- Children must not look at each other's cards until speaking and listening are allowed.

- When a pair have 'Made 10', they go to the teacher and show how they have done so.
- All cards are displayed on pairs making 10, as tables or on the wall.

Discussion: some learners may need to find two others in order to make 10 – adding three numbers.

Managing your class

Teachers are often more concerned about their ability to run and manage the class in English than they are about actually teaching their subject. This is mainly because they can rely on their textbook or chosen resources to provide them with language support. For this reason, some EMI teachers continue to use the primary language when they are not actually teaching the subject. While understandable, especially when teachers are just starting their journey into EMI, this approach has several drawbacks. If the children are only exposed to the second language for brief periods of teaching, which are packaged by use of the primary language to personally engage with the children, conduct classroom routines and generally manage the learners, then they will not have the opportunity to acquire a wider range of functional English. They need to see that the second language is not just used in science or maths, but, just like their primary language, for general communication. This type of English is sometimes called BCS (Basic Interpersonal Communication Skills). This contrasts with CALP (Cognitive Academic Language Proficiency), which covers all those functions of language the learner needs in order to engage in the learning of the content (for example cause and effect, hypothesising, comparing).

It may well be daunting for less-confident users of the language to try to manage the whole lesson in English, but the good news is that BCS English does not really need to be monitored for accuracy, as the learners' comprehension, while desirable, is less essential.

Other functional language areas may require rather more monitoring or planning before the lesson. Giving instructions is an example of this; the children need this language to be clear and accessible. Instructions need to be delivered in short, simple sentences. Examples that model the task should be provided and learner comprehension must be checked. Other areas of classroom language include classroom routines and the language of monitoring and giving feedback. Exposures to simple, formulaic lists of phrases for conducting these routines can, initially, provide useful support.

Giving instructions Teacher development

The purpose of this activity is to help teachers realise how crucial it is to give clear, comprehensible instructions, and to provide a chance to practice and compare with other participants.

Look at the previous activity, 'Making 10'. Imagine you want your learners to do this activity. How will you explain what you want them to do, and how will you check that they have understood? Here are the instructions given by one teacher. Can you improve them?

Learner children, we're going to have a game, and in this game you have to make 10. I will get everybody this card with some fruit on, perhaps three or maybe four pieces, and when I want you to do it find another child who has the same fruit, and together with your partner make 10 pieces of fruit. Do you understand? Look! Not fruit, right, here are your cards. And remember you must only speak and listen – don't look at the other cards.

Write out your instructions, saying how you will check understanding.

Teacher's Presentation Kit

The Teacher's Presentation Kit is a digital resource that offers a suite of easy-to-use materials for interactive whiteboards or projectors. It includes an enhanced digital version of the Student Books for front-of-class teaching as well as downloadable and printable activity sheets for whole class engagement and additional vocabulary support.

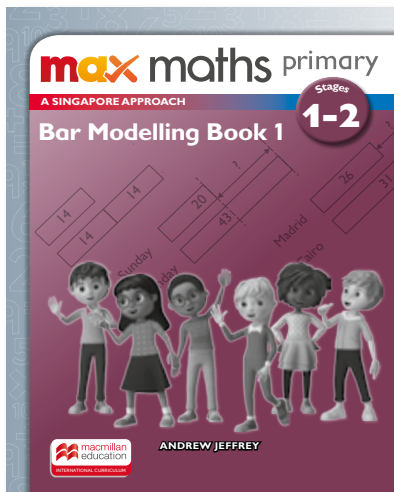
- Flashcards show images that help illustrate the key mathematical concepts covered in the Student Books.
- Teachers can use flashcards to support a variety of class games and activities to reinforce students' concept acquisition.
- The scope and sequence provides an accurate mapping of all components of Max Maths Primary to the Cambridge International Primary Curriculum. This will help when it comes to short and medium-term planning and getting the most out of the Max Maths Primary series.
- Throughout each stage, there are downloadable and printable skills sheets, focusing on problem-solving skills. Each skills sheet will supplement a Student Book topic.
- Accompanying Teacher Notes offer full teacher support for each skills sheet.
- Teachers will be provided with word cards showing images of vocabulary and sentence structures. Teachers can use the flashcards to support a variety of class games and activities to reinforce students' language learning.
- Bar Modelling Books – highly effective resources with explicit instruction to support teaching via this method.
- The Teacher's Presentation Kit includes assessments support.



Bar Modelling Resources

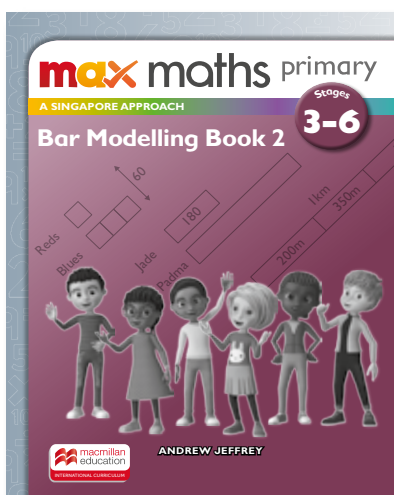
Bar Modelling is a powerful and versatile strategy that lends itself to a wide range of mathematical problems. It draws on the CPA approach by helping students progress from exploring problems through concrete objects to pictorial representations.

These practical resources have been written by Singapore maths expert, Andrew Jeffrey, to provide teachers with the confidence to deliver effective maths lessons.



STAGES 1-2

- An introduction to bar modelling - what it is, what it can be used for, and why it is so effective
- Step-by-step instruction on how to implement bar modelling
- Effective worked examples to give confidence
- Examples of how to add challenge and greater depth questions
- Explicit support to show you how to use Bar Modelling in Stages 1 and 2 and how to put it into practice in the classroom



STAGES 3-6

- The role of the proven CPA approach in Mathematics
- What pupils should know by the start of Stage 3
- How bar modelling works for Stages 3 – 6
- Step-by-step worked examples
- Practice questions to help you get started quickly with your pupils





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Digital Student Books	9781035149339	9781035149353	9781035149384	9781035149414	9781035149445	9781035149476
Workbooks	9781035116935	9781035116959	9781035116966	9781035116980	9781035117000	9781035117024
Digital Teacher's Guide	9781035138982	9781035139163	9781035139200	9781035146383	9781035146390	9781035146406
Digital Teacher's Presentation Kit	9781035149322	9781035149377	9781035149407	9781035149438	9781035149469	9781035149490

