Primary Maths Series, New Edition Scheme of Work - Year 5

The New Edition of the **Maths** — **No Problem!** Primary Maths Series is fully aligned to the 2014 English national curriculum for maths and subsequent non-statutory guidance. This Scheme of Work outlines the content and topic order within Year 5 and indicates the level of depth needed to teach maths for mastery. It can also help you and your school to plan and monitor progress.

A tried and tested structure

Unlike many free schemes of work, the **Maths** — **No Problem!** syllabus is based on the model developed in Singapore, which has been tested and refined over the last 30 years.

- Founded on the learning theories of Piaget, Dienes, Bruner, Skemp and Vygotsky.
- Reviewed by an expert team of consultants, including Dr Julie Alderton from Cambridge University and Dr Wong Khoon Yoong, former Head of Mathematics and Mathematics Education at the National Institute of Education, Singapore.
- Fully aligned with the 2014 English national curriculum for maths and the latest ready-to-progress guidance.

How to use our scheme of work

Our scheme of work demonstrates the spiral approach used in our programme, which builds pupils' depth of understanding and mathematical fluency without the need for rote learning. Learning is presented in small-step, logical sequences organised into individual lessons with a title indicating the focus of learning for that lesson. The sequence of lessons is carefully organised with clear lines of progression.

This scheme of work provides:

- An overview of the national curriculum topics covered during the school year by term.
- A full lesson breakdown for each national curriculum topic and the learning objective for each lesson.

The topics are colour coded to reflect the national curriculum content domain strands. This also allows you to see when the different topics are introduced and revisited.

Please note that the time allocated to each topic is only provided as a guide and is not meant to be prescriptive. The concepts are broken down into a number of lessons, which offer small-step progression for the most struggling of learners. As such, teachers can use their professional judgement to combine two consecutive lessons into one session as appropriate for their learners. Though teachers can merge lessons within a chapter, we do not recommend skipping or combining chapters.

What other support is available

The scheme of work provides a researched structure, which is ideal for teachers who are confident teaching maths for mastery and have received **Maths** — **No Problem!** professional development.

Schools that don't always have the time to create their own lesson content should consider using our Primary Maths Series textbooks and workbooks. The series provides carefully varied exercises, which are designed to deepen pupils' understanding, and is complemented by online Teacher Guides, which provides a step-by-step guide to each lesson, including assessment and differentiation support.

For a free demo of our Primary Maths Series go to www.mathsnoproblem.com/demo

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Primary Maths Series - Year 5 at a Glance

	AUTUMN TERM	SPRING TERM	SUMMER TERM
Week 1	Number and Place Value: Numbers to 1 000 000 LESSON BREAKDOWN	Fractions, Decimals and Percentages: Fractions LESSON BREAKDOWN	Geometry – Position and Direction: Position and Movement LESSON BREAKDOWN
Week 2			Measurement: Measurements LESSON BREAKDOWN
Week 3			
Week 4	Calculations: Addition and Subtraction LESSON BREAKDOWN		
Week 5	LESSON BREAKDOWN	Mid-year (A) Tests and Remediation	
Week 6	Calculations: Multiplication and Division LESSON BREAKDOWN	Fractions, Decimals and Percentages: Decimals LESSON BREAKDOWN	Measurement: Area and Perimeter LESSON BREAKDOWN
Week 7			
Week 8			Measurement: Volume
Week 9		Fractions, Decimals and Percentages: Percentage LESSON BREAKDOWN	LESSON BREAKDOWN
Week 10	Calculations: Word Problems LESSON BREAKDOWN	Geometry – Properties of Shapes: Geometry LESSON BREAKDOWN	Number and Place Value: Roman Numerals LESSON BREAKDOWN
Week 11	Statistics: Graphs LESSON BREAKDOWN		Review and Revision
Week 12			End-of-year (B) Tests and Remediation



Autumn Term – Textbook 5a Number and Place Value: Numbers to 1 000 000 Maths — No Problem! **Lesson Name Lesson Objective Book Reference** Lesson 1 – Reading and Writing Chapter 1 To read and represent numbers to 100 000. - Numbers to Numbers to 100 000 1 000 000 Lesson 2 – Reading and Writing To read and represent numbers to 1 000 000. Numbers to 1 000 000 Lesson 3 – Reading and Writing To read and represent numbers to 1 000 000 using number discs. Numbers to 1 000 000 Lesson 4 – Comparing Numbers To compare numbers to 1 000 000 using place value. to 1 000 000 Lesson 5 – Comparing Numbers To compare numbers to 1 000 000 using place value. to 1 000 000 Lesson 6 – Comparing Numbers To compare numbers to 1 000 000 using pictorial representations and proportionality. to 1 000 000 Lesson 7 – Comparing Numbers To compare numbers to 1 000 000 from pictorial representations, using lists and number lines. to 1 000 000 Lesson 8 – Making Number Patterns To make and identify patterns in numbers using knowledge of place value. Lesson 9 – Making Number Patterns To make number patterns that decrease in multiples of 10 000 or 100 000. Lesson 10 – Rounding Numbers to To round numbers to the nearest 10 000 using number lines and bar graphs. the Nearest 10 000 Lesson 11 – Rounding Numbers to To round numbers to the nearest 100 000 using number lines and bar graphs. the Nearest 100 000 Lesson 12 – Rounding Numbers To round numbers to the nearest 100, 1000, 10 000 and 100 000 using number lines. Chapter consolidation To practise various concepts covered in the chapter. 1 consolidation day To be used if lessons take longer than expected or a topic needs to be revisited.



Autumn Term – Textbook 5a		
Calculations: Addition and Subtraction		
Maths — No Problem! Book Reference	Lesson Name	Lesson Objective
Chapter 2 – Whole Numbers:	Lesson 1 – Counting On to Add	To add using the 'counting on' strategy with concrete materials and number lines.
Addition and Subtraction	Lesson 2 – Adding within 1 000 000	To add numbers within 1 000 000 using rounding.
	Lesson 3 – Adding within 1 000 000	To add numbers within 1 000 000 using the column method of addition.
	Lesson 4 – Adding within 1 000 000	To consolidate and refine addition skills and place-value knowledge to solve addition problems.
	Lesson 5 – Counting Backwards to Subtract	To subtract using the 'counting backwards' strategy with concrete materials.
	Lesson 6 – Subtracting within 1 000 000	To subtract using the column method and number discs using numbers to 1 000 000.
	Lesson 7 – Subtracting within 1 000 000	To subtract using the column method and number discs using numbers to 1 000 000.
	Lesson 8 – Subtracting within 1 000 000	To subtract numbers to 1 000 000 using the column method and number discs using numbers to 1 000 000.
	Lesson 9 – Adding and Subtracting within 1 000 000	To use addition and subtraction to solve comparison problems with numbers to 1 000 000.
	Lesson 10 – Adding and Subtracting within 1 000 000	To consolidate and refine addition and subtraction skills and place-value knowledge to solve problems.
	Chapter consolidation	To practise various concepts covered in the chapter.



Autumn Term – Textbook 5a		
Calculations: Multiplication and Division		
Maths — No Problem! Book Reference	Lesson Name	Lesson Objective
Chapter 3 –	Lesson 1 – Finding Multiples	To consolidate and review multiplication; to find the result of multiplying by a number.
Whole Numbers: Multiplication	Lesson 2 – Finding Factors	To consolidate and review multiplication; to find the numbers we can multiply by to get a number.
and Division	Lesson 3 – Finding Common Factors	To define and find common factors of numbers to 100.
	Lesson 4 – Finding Prime Numbers	To identify and name the prime numbers; to recognise prime numbers as numbers that only have 2 factors.
	Lesson 5 – Prime Numbers and Composite Numbers	To define and determine prime numbers and composite numbers.
	Lesson 6 – Finding Square and Cube Numbers	To create and determine square and cubed numbers.
	Lesson 7 – Multiplying by 10, 100 and 1000	To multiply 1- and 2-digit numbers by 10, 100 and 1000.
	Lesson 8 – Multiplying 2-Digit or 3-Digit Numbers by a Single Digit	To multiply 2- and 3-digit numbers by a 1-digit number using multiple strategies.
	Lesson 9 – Multiplying 4-Digit Numbers	To multiply 4-digit numbers by 1-digit numbers.
	Lesson 10 – Multiplying 4-Digit Numbers	To multiply 4-digit numbers by 1-digit numbers with regrouping, using a variety of strategies.
	Lesson 11 – Multiplying 4-Digit Numbers	To multiply a 4-digit number by a 1-digit number, with regrouping from the ones, tens and hundreds, using multiple methods.
	Lesson 12 – Multiplying a 2-Digit Number by a 2-Digit Number	To multiply 2-digit numbers by 2-digit numbers using multiple methods.
	Lesson 13 – Multiplying a 2-Digit Number by a 2-Digit Number	To multiply a 2-digit number by a 2-digit number using multiple methods, including the grid method, number bonds and column method, with regrouping.
	Lesson 14 – Multiplying a 3-Digit Number by a 2-Digit Number	To multiply a 3-digit number by a 2-digit number, with the grid method and column method as key strategies.

Continued overleaf



Autumn Term – Textbook 5a		
Calculations: Multiplication and Division (continued)		
Maths — No Problem! Book Reference	Lesson Name	Lesson Objective
Chapter 3 – Whole Numbers:	Lesson 15 – Multiplying a 3-Digit Number by a 2-Digit Number	To multiply a 3-digit number by a 2-digit number with regrouping, using the column method as the key strategy.
Multiplication and Division	Lesson 16 – Dividing by 10, 100 and 1000	To find thousands, hundreds and tens in a 4-digit number using concrete materials.
	Lesson 17 – Dividing without Remainder	To divide 3- and 4-digit numbers by 1-digit numbers, using number bonds and long division as the key methods.
	Lesson 18 – Dividing without Remainder	To divide 4-digit numbers by 1-digit numbers, using number bonds and long division as the key methods.
	Lesson 19 – Dividing with Remainder	To divide 3-digit numbers by 1-digit numbers, using long division, short division and mental methods, that give rise to remainders.
	Chapter consolidation	To practise various concepts covered in the chapter.



Autumn Term – Textbook 5a		
Calculations: Word Problems		
Maths — No Problem! Book Reference	Lesson Name Lesson Objective	
Chapter 4 – Whole Numbers: Word Problems	Lesson 1 – Solving Word Problems using Multiplication and Division	To solve word problems involving multiple operations; to identify the operation needed to carry out the plan.
	Lesson 2 – Solving Word Problems Using Bar Models	To solve word problems involving multiplication and division using bar models as the main heuristic.
	Lesson 3 – Solving Multi-Step Word Problems	To solve word problems involving multiple operations, identifying key information and representing information using bar model diagrams.
	Lesson 4 – Solving Multi-Step Word Problems	To solve word problems involving multiple operations, using bar models as they key heuristic to represent key information.
	Chapter consolidation	To practise various concepts covered in the chapter.

Autumn Term – Textbook 5a			
Statistics: Graphs	Statistics: Graphs		
Maths — No Problem! Book Reference	Lesson Name	Lesson Objective	
Chapter 5 – Graphs	Lesson 1 – Reading Tables	To read the information presented in a table and interpret its meaning.	
·	Lesson 2 – Reading Tables	To read and respond to information presented in a table.	
	Lesson 3 – Reading Tables	To read and respond to tables that have a variety of data sets.	
	Lesson 4 – Reading Line Graphs	To read and interpret information provided in a line graph where a single line represents the data.	
	Lesson 5 – Reading Line Graphs	To read and interpret information presented on a line graph where the data is represented by more than one line.	
	Lesson 6 – Reading Line Graphs	To read and interpret information presented on a line graph where the data is represented by more than one line.	
	Lesson 7 – Reading Line Graphs	To read and interpret information presented in a table and turn it into a line graph; to determine relationships between data sets.	
	Chapter consolidation	To practise various concepts covered in the chapter.	
	2 consolidation days	To be used if lessons take longer than expected or a topic needs to be revisited.	

Spring Term - Textbook 5a Fractions, Decimals and Percentages: Fractions Maths — No Problem! **Lesson Name Lesson Objective Book Reference** Chapter 6 Lesson 1 – Dividing to Make To divide whole numbers to create fractions; to create mixed numbers and improper fractions when dividing whole numbers. - Fractions Fractions Lesson 2 – Writing Improper To write improper fractions and mixed numbers using a number line and pictorial methods. Fractions and Mixed Numbers Lesson 3 – Finding To find equivalent fractions using pictorial methods. **Equivalent Fractions** Lesson 4 – Comparing To compare and order fractions using the pictorial method. and Ordering Fractions Lesson 5 – Comparing To compare and order improper fractions using the pictorial method. and Ordering Improper Fractions Lesson 6 – Comparing To compare mixed numbers using pictorial representations; to find common denominators where one fraction is already the and Ordering Mixed Numbers common denominator for all fractions in the question. Lesson 7 – Making Number Pairs To make number pairs (number bonds) with fractions with different denominators. Lesson 8 – Adding Fractions To add unlike fractions by finding a common denominator using pictorial methods. To add unlike fractions by finding a common denominator using pictorial methods. Lesson 9 – Adding Fractions Lesson 10 – Adding Fractions To add together unlike fractions where the sum is greater than 1, creating mixed numbers or improper fractions. Lesson 11 – Adding Fractions To add unlike fractions which create improper fractions and mixed numbers that give rise to simplification. Lesson 12 – Subtracting Fractions To subtract fractions with different denominators: to subtract fractions from whole numbers. Lesson 13 – Subtracting Fractions To subtract fractions where the denominators are not the same; to use bar models as a key strategy for subtracting fractions. Lesson 14 – Subtracting Fractions To subtract fractions and mixed numbers from mixed numbers with different denominators.

To multiply fractions by whole numbers creating other fractions, mixed numbers or improper fractions.



Lesson 15 – Multiplying Whole

Numbers by Proper Fractions

Spring Term - Textbook 5a Fractions, Decimals and Percentages: Fractions (continued) Maths — No Problem! **Lesson Name Lesson Objective Book Reference** Chapter 6 Lesson 16 – Multiplying Proper To multiply fractions by whole numbers where the product is an improper fraction or mixed number. - Fractions Fractions and Whole Numbers Lesson 17 – Multiplying Mixed To multiply mixed numbers by whole numbers, creating larger mixed numbers. Numbers and Whole Numbers Lesson 18 – Multiplying Mixed To multiply mixed numbers by whole numbers in multi-step word problems. Numbers and Whole Numbers Chapter consolidation To practise various concepts covered in the chapter. To be used if lessons take longer than expected or a topic needs to be revisited. 1 consolidation day Week 5 Mid-Year (A) Tests and Remediation

Spring Term – Textbook 5b

Fractions, Decimals and Percentages: Decimals

Maths — No Problem! Book Reference	Lesson Name	Lesson Objective
Chapter 7 – Decimals	Lesson 1 – Writing Decimals	To write decimal numbers.
	Lesson 2 – Reading and Writing Decimals	To read and write decimals.
	Lesson 3 – Reading and Writing Decimals	To read and write decimals.
	Lesson 4 – Comparing Decimals	To compare tenths and hundredths written as decimals.
	Lesson 5 – Comparing Decimals	To order and compare decimals.
	Lesson 6 – Comparing Decimals	To compare and order decimals of amounts.
	Lesson 7 – Writing Fractions as Decimals	To write fractions as decimals.
	Lesson 8 – Adding and Subtracting Decimals	To add and subtract amounts in decimals.
	Lesson 9 – Adding and Subtracting Decimals	To add and subtract decimals; to add and subtract amounts in pounds and pence.
	Lesson 10 – Adding and Subtracting Decimals	To add and subtract amounts in pounds and pence.
	Lesson 11 – Adding and Subtracting Decimals	To add and subtract decimals; to add and subtract amounts in pounds and pence.
	Lesson 12 – Adding and Subtracting Decimals	To add and subtract decimals to find the smallest possible sum and difference.
	Lesson 13 – Adding and Subtracting Decimals	To add and subtract decimals; to find number pairs that add up to 1.
	Lesson 14 – Adding and Subtracting Decimals	To add and subtract the perimeter of an object using decimals.
	Lesson 15 – Rounding Decimals	To round decimals to the nearest whole number; to round numbers to nearest tenth.
	Chapter consolidation	To practise various concepts covered in the chapter.



Spring Term – Textbook 5b

Fractions, Decimals and Percentages: Percentage

Maths — No Problem! Book Reference	Lesson Name	Lesson Objective
Chapter 8	Lesson 1 – Comparing Quantities	To compare quantities; to compare fractions, decimals and percentages; to convert fractions to decimals and percentages.
- Percentage	Lesson 2 – Finding Percentages	To convert values of an amount into percentages; to convert fractions into percentages.
	Lesson 3 – Finding Percentages	To convert values of an amount into percentages; to convert fractions into percentages.
	Chapter consolidation	To practise various concepts covered in the chapter.
	1 consolidation day	To be used if lessons take longer than expected or a topic needs to be revisited.



Spring Term - Textbook 5b **Geometry – Properties of Shapes: Geometry** Maths — No Problem! Lesson Name **Lesson Objective Book Reference** Chapter 9 Lesson 1 – Knowing Types of Angles To know the names and qualities of acute, right, obtuse and reflex angles. - Geometry Lesson 2 – Measuring Angles To measure angles using a protractor. Lesson 3 – Measuring Angles To draw, measure and add angles using a protractor. Lesson 4 – Investigating Angles To measure angles using a protractor; to identify two angles which add up to 180 degrees on a straight line. on a Line Lesson 5 – Investigating Angles To investigate angles that, when combined, make 360 degrees. at a Point Lesson 6 – Drawing Angles To draw angles using a protractor. Lesson 7 – Drawing Lines and Angles To draw lines and angles with a high level of accuracy. Lesson 8 – Describing Squares To describe the sides and angles of both rectangles and squares. and Rectangles Lesson 9 – Investigating Angles To investigate the angles of various quadrilaterals, including squares and rectangles. in Squares and Rectangles Lesson 10 – Solving Problems To solve problems involving angles in rectangles. Involving Angles in Rectangles Lesson 11 – Solving Problems To solve problems involving angles. **Involving Angles** Lesson 12 – Solving Problems To use our understanding of angles to solve problems. Involving Angles Lesson 13 – Investigating To investigate regular polygons. Regular Polygons Chapter consolidation To practise various concepts covered in the chapter. To be used if lessons take longer than expected or a topic needs to be revisited. 1 consolidation day



Summer Term - Textbook 5b Geometry - Position and Direction: Position and Movement Maths — No Problem! **Lesson Name Lesson Objective Book Reference** Lesson 1 – Naming and Chapter 10 To name and plot points. - Position and Plotting Points Movement Lesson 2 – Describing Translations To describe the position of a shape following a translation. Lesson 3 – Describing Movements To describe movements and reflecting shapes. Lesson 4 – Describing Movements To describe the movement of a 2-D shape when reflected. Lesson 5 – Successive Reflections To reflect a shape more than once. Chapter consolidation To practise various concepts covered in the chapter.



Summer Term – Textbook 5b		
Measurement: Measurements		
Maths — No Problem! Book Reference	Lesson Name	Lesson Objective
Chapter 11 – Measurements	Lesson 1 – Converting Units of Length	To convert units of length.
	Lesson 2 – Converting Units of Length	To convert units of length, including centimetres and metres.
	Lesson 3 – Converting Units of Length	To convert units of length.
	Lesson 4 – Converting Units of Length	To solve problems by converting units of length.
	Lesson 5 – Converting Units of Mass	To convert units of mass.
	Lesson 6 – Converting Units of Mass	To convert units of mass, including grams into kilograms.
	Lesson 7 – Converting Units of Mass	To convert units of mass.
	Lesson 8 – Converting Units of Mass	To convert units of mass, including kilograms and pounds.
	Lesson 9 – Converting Units of Time	To convert units of time.
	Lesson 10 – Converting Units of Time	To convert units of time from days into weeks and months.
	Lesson 11 – Converting Units of Time	To convert units of time.
	Lesson 12 – Converting Units of Time	To solve problems by converting units of time.
	Lesson 13 – Converting Units of Time	To convert units of time.
	Lesson 14 – Telling the Temperature	To read the temperature on a thermometer.
	Chapter consolidation	To practise various concepts covered in the chapter.



Summer Term – Textbook 5b Measurement: Area and Perimeter Maths — No Problem! **Lesson Name Lesson Objective Book Reference** Lesson 1 – Finding the Perimeter To find the perimeter of shapes. Chapter 12 - Area and Perimeter Lesson 2 – Finding the Perimeter To find shapes with a specific perimeter. Lesson 3 – Finding the Perimeter To find the perimeter of different shapes. Lesson 4 – Using Scale Diagrams To use scale diagrams to find the perimeter of a shape. to Find the Perimeter Lesson 5 – Measuring the Area To measure the area of shapes by counting squares. To measure the area of squares. Lesson 6 – Measuring the Area Lesson 7 – Measuring the Area To measure the area of a shape. Lesson 8 – Measuring the Area To measure area in square metres. Lesson 9 – Measuring the Area To measure area in square metres. Lesson 10 – Measuring the Area To find the area of shapes in square metres. To make an estimation of area in kilometres. Lesson 11 – Estimating the Area Chapter consolidation To practise various concepts covered in the chapter. 3 consolidation days To be used if lessons take longer than expected or a topic needs to be revisited.



Summer Term – Textbook 5b			
Measurement: Vol	Measurement: Volume		
Maths — No Problem! Book Reference	Lesson Name	Lesson Objective	
Chapter 13 - Volume	Lesson 1 – Understanding the Volume of Solids	To understand the volume of solids.	
	Lesson 2 – Finding the Volume of Solids	To find the volume of 3-D shapes.	
	Lesson 3 – Finding the Volume of Solids	To find the volume of solids.	
	Lesson 4 – Finding the Capacity of Rectangular Boxes	To find the capacity of a cuboid.	
	Lesson 5 – Finding the Capacity of Rectangular Boxes	To find the capacity of rectangular boxes.	
	Lesson 6 – Converting Units of Volume	To compare and convert units of volume.	
	Lesson 7 – Converting Units of Volume	To convert units of volume (metric and imperial).	
	Lesson 8 – Converting Units of Volume	To convert units of volume (metric and imperial).	
	Lesson 9 – Solving Word Problems Involving Volume	To solve word problems involving volume.	
	Lesson 10 – Solving Word Problems Involving Volume	To solve word problems involving volume.	
	Chapter consolidation	To practise various concepts covered in the chapter.	



Summer Term - Textbook 5b Number and Place Value: Roman Numerals Maths — No Problem! **Lesson Name Lesson Objective Book Reference** Chapter 14 Lesson 1 – Writing Roman To write Roman numerals to 1000. - Roman Numerals Numerals to 1000 Lesson 2 – Writing Years To write numbers in their thousands in Roman numerals. in Roman Numerals To practise various concepts covered in the chapter. Chapter consolidation 2 consolidation days To be used if lessons take longer than expected or a topic needs to be revisited. Week 11 **Review And Revision** Week 12 End-Of-Year (B) Tests and Remediation



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Eligibility

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- To allow prospective users to assessment the suitability of the Maths — No Problem! Programme, or
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