

Mathematics

Portfolio



Maths at Hove Junior School



Maths is a life long skill.

Maths is calculating, reasoning and problem solving to make sense of the world we live in.

Maths is understanding and appreciating the patterns in both number and space in their everyday lives in and out of school.

Maths is the universal language of our world and my future.

Maths is for everyone.

At Hove Juniors we... .ook after each other Everyone does their best Alm high Respect New day new challenge

Question Collaborate Reflect Take Risks Independence Perseverance

Our LEARNING CHARACTERISTICS support and define how the children become successful learners.







The children at Hove Junior School are passionate about Maths. Their curiosity and enthusiasm shines through during their lessons.

Mathematics is a creative discipline that has been central in the development of human civilisation and is essential to everyday life and most forms of employment.

Mathematics is an interconnected subject and our curriculum enables the children to move fluently between representations of mathematical ideas. They make rich connections across mathematical ideas and apply mathematical knowledge to science and other subjects. Mathematics education at Hove Junior School provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

We are committed to ensuring that all pupils become fluent in the fundamentals, whilst ensuring that most pupils develop a comprehensive understanding of the subject.

Through varied and frequent practice with increasingly complex problems pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.

They are able to reason mathematically by following a line of enquiry, using mathematical language and can solve problems by applying their mathematics to a variety of problems with increasing sophistication.

Through following a mastery approach to mathematics, children will develop a deep understanding of the curriculum through whole class teaching where the focus is on all pupils working together on the same lesson objective at the same time

Curriculum – Maths No Problem

Mathematical reasoning is provided through plenty of opportunities for pupils to investigate planned open questions that require them to sort and compare, seek patterns and look for rules.

Teaching of maths emphasises the importance of using <u>Multiple representations</u>; concrete, pictorial and abstract approaches to the teaching of mathematics throughout a pupil's school career and that pupils will need to go back and forth between them, rather than seeing these as separate stages of learning. NIOR SCA

Depth of understanding is developed through pupils' being able to <u>communicate</u> using the correct mathematical language. We ask pupils to explain, justify and prove their ideas so that they are deepening their understanding of a concept.

Problem solving is at the heart of the mastery approach, so we make sure we dedicate sufficient time to each new concept or skill, so every pupil can gain the reasoning they need to solve new problems in unfamiliar contexts. Our pupils are expected to all solve investigations by the end of the lesson, meaning the key concepts and objectives are met by all pupils. Instead of accelerating higher attainers onto new content, teachers differentiate through depth, to develop pupils' conceptual understanding.

Curriculum – Maths No Problem

We have <u>high expectations</u> for every child, spend more time on fewer topics and focus teaching on using mathematical principles to problem-solve. We promote a growth mindset and believe that all children can get better at maths when they put in the effort and work at it.

We strongly promote the principle that no child is left behind and that interventions, based on the teacher's expert knowledge about what pupils know and can do, help youngsters to <u>"keep up, not catch up".</u>

We use end of unit reviews and continuous opportunities for children to apply their skills so that teachers can <u>assess for mastery</u>.

Teachers track pupils' gains in progress over the course of a topic, and tailor learning to suit individual pupils' needs. Equal opportunities are promoted through our belief that all children can succeed in mathematics. Links are made wherever possible to real-life opportunities so that mathematics is seen as "real".



Curriculum Overview

PRIMARY MATHS SERIES – YEAR 3 AT A GLANCE

Our Curriculum Maps detail all of the opportunities for the teaching and learning of **Maths** throughout each year.





Standards

Maths:

- Overall attainment for maths is 84.4% with 29% greater depth. Average scaled score 105.5 with progress increasing Overall attainment has been since 2018 with a 1% rise in greater depth.
- Overall attainment for disadvantaged pupils was 79%. Maths progress has increased significantly since 2018.



Assessment in Maths

- Maths is assessed throughout every part of the lesson, teachers using their subject knowledge to quickly identify misconceptions and address these within the lesson.
- We use Formative Assessment Booster sessions after most lessons as a same day intervention to support children who have not fully grasped a concept.
- We assess children's understanding at the end of each unit and at the end of each term through assessments designed to examine pupils understanding of the cognitive and content domains from the national curriculum tests allowing teachers to test pupils' thinking skills and intellectual processes.

Formative Assessment Boosters (FAB)

If a pupil fails to grasp a concept or procedure, this is quickly identified through formative assessment e.g. live marking, self assessment...

Formative Assessment Boosters ensure the pupils are ready to move forward with the rest of the class in the next session!

Purposeful Learning Environments



Learning Environments are used as tools to learning. Resources are provided to be used in order to support mathematical concepts in the concrete, pictorial and abstract approach







Stem Sentences and Generalisations

Stem sentences and generalisations support children's fluency and mathematical thinking.

Children's focus is maintained through reduction of cognitive load. Correct language is provided for children to think about and communicate mathematical ideas. High quality shared language is used to discuss, connect and share ideas. All children are enabled to recognise what is important and what needs to be remembered for later learning Children to return to ideas and make connections

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PRIMARY MATHS SERIES – YEAR 3 AT A GLANCE





PRIMARY MATHS SERIES - YEAR 3 LESSON BREAKDOWN

AUTUMN TERM - TEXTBOOK 3A

Number and Place Value: Numbers to 1000			
Maths — No Problem! Book Reference	Lesson Name	Lesson Objective	
Chapter 1 - Numbers to 1000	Lesson 1 – Counting in Hundreds	To learn to count in hundreds and understand the place value. Pupils will also understand how many hundreds are needed to make 1000.	
	Lesson 2 – Counting In Hundreds, Tens and Ones	To compose and decompose numbers consisting of hundreds, tens and ones.	
	Lesson 3 - Place Value	To understand the value of each digit in a 3-digit number.	
	Lesson 4 – Comparing and Ordering Numbers	To be able to compare and order numbers.	
	Lesson 5 – Counting in Fiftles	To be able to count In fiftles.	
	Lesson 6 – Number Patterns	To recognise, describe and continue a number pattern.	
	Lesson 7 – Number Patterns	To be able to recognise, describe and complete more complicated number patterns.	
	Lesson 8 – Counting In Fours and Eights	To be able to count in fours and eights.	
	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.	









PRIMARY MATHS SERIES – YEAR 4 AT A GLANCE





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PRIMARY MATHS SERIES – YEAR 4 LESSON BREAKDOWN

AUTUMN TERM - TEXTBOOK 4A			
Number and Place Value: Numbers to 10 000			
Maths — No Problem! Book Reference	Lesson Name	Lesson Objective	
Chapter 1 - Numbers to 10 000	Lesson 1 – Counting in Hundreds and Twenty-Fives	To count in hundreds and twenty-fives.	
	Lesson 2 – Counting in Thousands	To count in thousands.	
	Lesson 3 – Counting In Thousands, Hundreds, Tens and Ones	To count In thousands, hundreds, tens and ones.	
	Lesson 4 – Using Place Value	To use an understanding of place value to count.	
	Lesson 5 – Using Place Value	To understand place value in a 4-digit number.	
	Lesson 6 - Comparing and Ordering Numbers	To compare and order numbers.	
	Lesson 7 – Comparing and Ordering Numbers	To compare and order 4-digit numbers.	
	Lesson 8 – Making Number Patterns	To make number patterns (100, 10, 1 more and less).	
	Lesson 9 – Making Number Patterns	To make number patterns (4-digit numbers).	
	Lesson 10 – Counting in Sixes, Sevens and Nines	To count in stres, sevens and nines.	
	Lesson 11 - Rounding Numbers	To round numbers to the nearest 1000.	
	Lesson 12 - Rounding Numbers	To round numbers to the nearest 10, 100 and 1000.	
	Lesson 13 – Rounding Numbers to Estimate	To round numbers to estimate.	
	Lesson 14 - Rounding Numbers to Estimate	To round numbers to estimate.	
	Chapter consolidation	To practise various concepts covered in the chapter.	







PRIMARY MATHS SERIES – YEAR 5 AT A GLANCE





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PRIMARY MATHS SERIES - YEAR 5 LESSON BREAKDOWN

AUTUMN TERM – TEXTBOOK 5A			
Number and Place Value: Numbers to 1 000 000			
Maths — No Problem! Book Reference	Lesson Name	Lesson Objective	
Chapter 1 - Numbers to	Lesson 1 – Reading and Writing Numbers to 100 000	To read and represent numbers to 100 000.	
1000000	Lesson 2 – Reading and Writing Numbers to 1 000 000	To read and represent numbers to 1 000 000.	
	Lesson 3 – Reading and Writing Numbers to 1 000 000	To read and represent numbers to 1 000 000 using number discs.	
	Lesson 4 – Comparing Numbers to 1 000 000	To compare numbers to 1 000 000 using place value.	
	Lesson 5 – Comparing Numbers to 1 000 000	To compare numbers to 1 000 000 using place value.	
	Lesson 6 – Comparing Numbers to 1 000 000	To compare numbers to 1 000 000 using pictorial representations and proportionality.	
	Lesson 7 – Comparing Numbers to 1 000 000	To compare numbers to 1 000 000 from pictorial representations, using lists and number lines.	
	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 round numbers to the nearest 10 000 using number lines and bar graphs.	
	Lesson 11 - Rounding Numbers	To round numbers to the nearest 100 000 using number lines and bar graphs.	
	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.	
	2 consolidation days	To be used if lessons take longer than expected or a topic needs to be revisited.	





PRIMARY MATHS SERIES – YEAR 6 AT A GLANCE

	AUTUMN TERM	SPRING TERM	SUMMER TERM	
Week 1	Number and Place Value: Numbers to 10 Million LESSON BREAKDOWN	Measurement: Measurements LESSON BREAKDOWN	Statistics: Graphs and Averages	
Week 2		Word Problems LESSON BREAKDOWN	LESSON BREAKDOWN	
Week 3	Calculations: Four Operations	Mid-year (A) Tests and Remediation	Number and Place Value: Negative Numbers LESSON BREAKDOWN	
Week 4	LESSON BREAKDOWN	Fractions, Decimals and Percentages: Percentage LESSON BREAKDOWN	SATs	
Week 5		Ratio and Proportion: Ratio	Measurement: Volume	
Week 6		LESSON BREAKDOWN	Geometry – Properties and Shapes: Geometry	
Week 7	Fractions, Decimals and Percentages: Fractions LESSON BREAKDOWN	Algebra: Algebra	LESSON BREAKDOWN	
Week 8		LESSON BREAKDOWN	Geometry – Position and Direction: Position and Movement LESSON BREAKDOWN	
Week 9		Measurement: Area and Perimeter	Statistics: Graphs and Averages LESSON BREAKDOWN	
Week 10	Fractions, Decimals and Percentages: Decimals	LESSON BREAKDOWN	Revisit Topics	
Week 11		Geometry - Properties and Shapes: Geometry LESSON BREAKDOWN	Revision and End-of-year (B) Tests	
Week 12	Measurement: Measurements LESSON BREAKDOWN	Geometry – Position and Direction: Position and Movement LESSON BREAKDOWN	Revisit Topics	



Maths — No Pr Book Reference Chapter 1 - Numbers to 10 Million

PRIMARY MATHS SERIES – YEAR 6 LESSON BREAKDOWN

JTUMN TERM – TEXTBOOK 6

umber and Place Value: Numbers to 10 Million

blemi	Lesson Name	Lesson Objective
	Lesson 1 – Reading and Writing Numbers to 10 Million	To create and identify numbers to 10 000 000 ; to write in numerals and words numbers to 10 000 000.
	Lesson 2 – Reading and Writing Numbers to 10 Million	To construct and record numbers to 10 000 000; to recognise the value of digits to 10 000 000.
	Lesson 3 – Reading and Writing Numbers to 10 Million	To recognise and construct numbers to 10 000 000 using an abacus; to recognise the value of digits in numbers to 10 000 000 and write numbers using numerals and words.
	Lesson 4 – Comparing Numbers to 10 Million	To compare numbers to 10 000 000 using place value.
	Lesson 5 – Comparing and Ordering Numbers to 10 Million	To compare and order numbers to 10 000 000; to create combinations of numbers using a fixed number of digits.
	Lesson 6 - Rounding Numbers	To round numbers to 10 000 000 to the nearest million, hundred thousand and ten thousand.
	Lesson 7 - Rounding Numbers	To round numbers to the nearest appropriate number up to and including millions; to determine when rounding is appropriate and to which value.
	Chapter consolidation	To practise various concepts covered in the chapter.









Challenge in Maths



Challenge Question (A)

What number is halfway between 1.4 and 2.1?

Challenge Question (B)

Here is a number pyramid.

The number in a box is the product of the two numbers below it.

Write the missing numbers.



<u>Challenge Question (C)</u>

0.9

Circle the two decimals which are closest in value to each other.

0.09 0.99 0.1



Challeng	e Question (A

What number is halfway between 1.4 and 2.1?



0.01

<u>Challenge Question (C)</u>
Circle the two decimals which are $\ensuremath{\textbf{closest}}$ in $\ensuremath{\textbf{value}}$ to each other.

0.99

0.1

0.01

Challenge Question (B)

0.9

Here is a number pyramid.

The number in a box is the **product** of the two numbers below it. Write the missing numbers.

0.09





Maths Journaling

Using your maths books, can you find an example where journaling would deepen the child's understanding?

	Descriptive	Evaluative	
		Method 1: 7 + 3 + 2 = 10 + 2	
	Write a note to explain how to find the	= 12	
	value of 7 + 3 + 2	Method 2: 7 + 3 + 2 = 4 + 4 + 4	
		= 12	
is the learn focus and how could	nat ning d l it	Which method is better? Why?	
be deepend	Creative	Investigative	
	Write a number story for $7 + 3 + 2$	$\Box + \Delta + O = 22$	
		\Box , Δ and O are 1-digit numbers and are all different.	
		Investigate the possible solutions.	

Journaling our way through maths



Journaling

Why is $1\frac{1}{11}$ a fraction that can be easily divided by 3?

Explain your answer using a diagram.

THINKING....



THINKING...

3 _

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Journaling

Mr Kelsey is unsure about how to compare fractions. Write him step by step instructions on how you would compare these fractions:

2	
—	
3	



6