Mathematics

Intent

Maths at Hyde Park Schools is designed to be an inclusive subject where all children feel safe, empowered to learn, and suitably challenged. Our intention is to build upon the children's learning from EYFS through to Key Stage Two and prepare all our children for the next phase of their mathematical journey in secondary school.

We have designed our Maths curriculum to provide the best learning opportunities for all our children and allow them to expand their curiosity. The curriculum we deliver is aligned to the National Curriculum and incorporates the models and ideas of teaching Maths for mastery, whilst incorporating Programmes of Studies that meet the needs of our children as identified by staff. These include recognising barriers to learning for children who are disadvantaged or face adverse childhood experiences as well as developing skills that enable children to progress their knowledge and use maths to solve problems. Our Maths curriculum is ambitious and designed to give all learners the knowledge and cultural capital they need to succeed in life.

The Maths curriculum is coherently planned and sequenced to provide our learners with a steady progression of the knowledge and skills needed for future learning and the next phase in their education. We understand that a child's ability to learn is based on gaining knowledge and building on prior knowledge, as well as the ability to use and apply any embedded skills adeptly and competently.

Our Maths curriculum is designed to marry key components such as number facts and mathematical thinking to ensure progress and a greater depth of understanding that leads to mastery and fluency. We ensure that children receive a broad and balanced curriculum, and that learning is relevant, exciting, aspirational, and challenging. We know that numerical competency is vital in all learning and increases children's life chances. Which enables them to have more control over their future lives and use Maths in a real-life context.

The children are encouraged to believe in themselves as mathematicians. We have the same ambitions for all learners and believe that they can all attain a good level of mathematical fluency. The curriculum is designed to be inspiring across the school and this allows children to take control of their own learning journey. This is achieved through careful consideration of individual needs, and, in some cases, individual programmes of study based around the needs of the children.

All learners study the full Maths curriculum, which is broad and balanced, and which aims to provide our children with a wide range of experiences. We have further enhanced our programme using the school's core values which are 'lived' daily through our relationships and school ethos.

Implementation

High quality CPD based on research and learning from best practise gives all teachers and teaching assistants the ability to implement the curriculum fully. The Maths co-ordinators from both schools regularly run staff training and monitoring to ensure that the curriculum is skilfully delivered with the greatest impact. The Maths co-ordinator receives training from the NCETM CODE Maths Hub through regular work groups as well as engaging in additional NCETM training and research projects.

Vocabulary is taught explicitly and effectively in Maths and displayed in the classroom. Learning is made accessible to all, by clear coverage of prior knowledge and learning and, within each lesson, consistent scaffolding, clear presentation of new learning, opportunities to share ideas and strategies and timely feedback. Manipulatives and visual representations are used to expose the structure of the Mathematics being taught and identify patterns and links within different areas of Maths. Opportunities for depth are provided through questioning and reasoning when teaching. This can be during whole class teaching or as an additional task in a Maths lesson.

Formative assessment is used routinely within lessons, to address children's misconceptions. Summative assessments are used at the end of a block of work and termly to track how pupils are progressing against the curriculum. Lessons allow pupils to practise our core values within their learning being brave, curious, optimistic, kind, inclusive, enterprising, and confident learners.

The curriculum provides children with deep learning experiences that are successively built on across the years, providing children with a sequential understanding of how maths ideas develop with understanding. Repetition also plays an important role in securing knowledge and fluency. Therefore, knowledge is often revisited in successive years to allow knowledge to become sticky. There is also repetition within in year for the number facts and previously taught strategies. The curriculum provides diverse and rich opportunities from which children can learn and develop a range of transferable skills, such as in data handling and science. Opportunities are given to show Maths in a real-life context which enables the children to Maths as a skill for life.

Impact

Pupils leave Hyde Park Schools with a secure mastery of mathematical concepts and a fluency of number facts. Through the skills that they have learnt they can apply this knowledge to real life situations. Additionally, they can use Maths to aid their learning and make links in other curriculum subjects They enjoy Maths and are able to use it to improve their adult lives.

We aim for all our children to leave Hyde Park Schools; brave, curious, optimistic, kind, enterprising, inclusive and confident Mathematicians, with the motivation and passion to continue to learn and empowered and enabled to make the most of their lives.

EYFS Progression

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Key facts	**Recognise make and find all numbers up to 5 including written as numbers**		**Recognise and find all numbers up to 10 written as numbers Know number bonds to 5**		**Recognise make and find all numbers up to 10 written as numbers Recall doubles up to 5+5**	
Strand	**Number (Getting to know you, baseline assessments & Just like me)**	**Number Measure, shape, and spatial thinking. (It's me 123 & Light and dark & Alive in 5)**	**Number Measure, shape, and spatial thinking. Time (Growing 6,7,8)**	**Number Measure, shape, and spatial thinking. pattern (Building 9 and 10 & To 20 and beyond)**	**Number Measure, shape, and spatial thinking. (To 20 and beyond & First then now)**	**Number Measure, shape, and spatial thinking. (Find my pattern & On the move)**
Vocabulary	**Number** Count, order, many, Amount, quantity, most, more, few, fewer, equal, repeat, first, second, third, fourth, fifth, add, take away, altogether, more than, fewer than, whole, part **Measure** heavy, light, heavier, lighter, full, empty, half full, nearly full, nearly empty, capacity. mass, holds, **Shape** pattern, sort, copy, continue, repeated pattern, mistake. position, under, over,	**Number** Represent, show, record, compare, more, most, few, fewer, part, whole, first, one less, one more, **Shape** circle, triangle, curved, straight, side, corner 2D **Measure** Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday, day, night, sort, group. sequence, day, night.	**Number** Zero, quantity, addition, subtraction, add, adding, subtracting, take away, compose, part, whole, altogether, **Measure** time, week, month January, February, March, April, May, June, July, August, September, October, November, December, height, tall, short, tallest, shortest, length, long, short, longest, shortest	**Number** Number bond, number pair, teens, Tens, 10s, ones, 1s, representation, predict, tens frame, match. **Shape** 2D, circle, square, rectangle, hexagon, 3D, sphere, pyramid, cylinder, cube, cuboid.	**Number** Add, adding, subtract, subtracting, take away, altogether, first, then, now, missing number, unknown, double, even, odd, group, share, equal, fair.	Review/consolidate understanding of and use of previously taught vocabulary.

	on top, above, next to, besides, in front of, behind, circle, triangle, curved, straight, side, corner 2D					
Skills and knowledge	**<u>Number</u>** • To know the stable order of counting (numbers always said in the same order). • To count one to one (one to one correspondence). • To know the ordinal principle (the last number said will be the total amount). • To know the abstraction principle (anything can be counted even things that you cannot touch). • To know that that counting order is irrelevant (the order you count objects in is irrelevant the amount will stay the same. • To represent numbers up to 3 • To compare numbers up to 3 • To subitise numbers up to 3. • To know different ways of composing numbers up to 3 • To begin to understand the concept of zero. • To compare numbers to 5. • To know different way to compose 4 and 5. • To match and sort amounts within 5. • To compare amounts within 5. • To count objects up to 5. • To recognise numbers up to 5. • To know one more and one less for numbers up to 5		**<u>Number</u>** • To count objects to 10. • To recognise numbers up to 10 • To subitise numbers up to 5 • To know one more and one less for numbers up to 10. • To begin to know bonds to 10. • To combine two groups and find out how many altogether. • To know different ways of composing 6, 7 and 8. • To find pairs within a number • To combine two groups and find out how many altogether. • To know that some numbers are odd, and some are even. • Count to and back from 20. • Start counting forwards and backwards from different points within 20. • Recognise different representations of numbers. • Build numbers up to 20 using manipulatives. **<u>Measure</u>** • To compare length. • To compare height. • To order the months of the year • To understand weeks are in a month • To understand months are in a year		**<u>Number</u>** • To add two groups together using First, then now structure. • To subtract one group from another using First then now structure. • How many did I subtract (this is the precursor to missing numbers) • To solve problems using addition and subtraction (based on first then now) • To find patterns and relationships between numbers • To use counting to solve problems. • To add two groups of objects together. • To subtract a number from a group of objects. • To double a number up to 5+5. • To work out how many have been added to a given number (the precursor to missing number sentences) • To quickly subitise numbers up to 5 • To independently count to 20 and back from 20. • To count to 20 and back from 20 starting in a different place. • To quickly recall number bonds up to 5. • To begin to recall number bonds to 10 **<u>Measure</u>** • To make maps of familiar places.	

	Measure • To compare mass. • To compare capacity. • To sequence events into day and night. • To know the days of the week. **Shape** • To recognise shapes with 4 sides and name some (square and rectangle) • To know and recognise circles and triangles • To explore simple patterns (sequence of 2) • To use simple positional language.	**Shape** • To name simple 3D shapes (cube, cuboid, sphere, cylinder, pyramid) • To describe simple 3D shapes. • To sort simple 3D shapes • To recognise and make simple repeating patterns. (a sequence of 3) • Match and make different shapes using manipulatives (geoboards, numicon, 2D shapes, 3D shapes unifix cubes)	• To use words like longer, shorter, taller when describing measurement. **Shape** • To name and sort 2D shapes independently. • To name and sort 3D shapes independently. • To combine two shapes to make a new shape. • To predict what shapes can be made from a given shape. • To reason about making new shapes from existing shapes (how many different shapes can you make using two rectangles or two right angle triangles) • To find patterns and relationships between shapes.

Year 1 Progression

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Key facts	To rapidly recall number bonds for each number to 10. To know the number bonds to 20 (13+7=20). To read numbers to 20 in numbers and words.		To read and write numbers to 20 in numbers and words. To count on and back to 50. To read numbers to 50 in numerals and words.		To read and write numbers to 50 in numbers and words. To count on and back to 100. To read numbers to 100 in numerals and words. To rapidly recall the number bonds to 20.	
Strand	**Place Value**	**Subtraction within 10**	**Addition and subtraction within 20**	**Place Value to 50**	**Multiplication and Division**	**Time**

Vocabulary	Count, sort, group, number sentences, expression, fewer, greater, equal, less than, more than, equal, <, =, >, fewest, smallest, greatest, representation, prove, check.	subtract, take away equals, number sentence, expression, part-whole, less, difference.	Add, subtract, equals, number sentence, expression, part-whole, more, difference, commutative, tens frame, tens ones.	Count, sort, group, number sentences, expression, fewer, greater, equal, less than, more than, equal, <, =, >, fewest, smallest, greatest, representation, prove, check.	Multiply, pair, twice, equal, unequal, repeated addition, array, row, column.	Day, week, month, January, February, March, April, May, June, July, August, September, October, November, December, first, then, next, morning, evening.
Skills and knowledge	• To count, read and write, forwards and backwards numbers to 10 independently with the correct spelling and formation. • To know One more one less and write as a mathematical expression. • To compare numbers using < = > in an expression. • To know how to put numbers on a number line and use it to order numbers. • To compare and order number independently.	• To use a part whole model to explain mathematical expressions (number sentences). • To write and solve mathematical expressions using - and =. • To rapidly recall number bonds to 10 and begin to use this knowledge to solve calculations. • To using drawings to calculate subtraction problems (crossing out) • To use counting back to solve subtraction calculations (number line). • To know and use the subtraction fact	• To understand the commutative nature of addition (including greatest number first). • To solve worded problems using First then now structure for numbers to 20. • To add numbers together using drawings, tens frames, counting on and number line. • To find and make number bonds (number splits) to support addition. • To add by making ten. • To know that subtraction is not commutative. • To solve worded problems using First then now structure for numbers to 20.	• To count, read and write, forwards and backwards numbers to 50 independently with the correct spelling and formation. • To count in 2s to 30. • To count in tens to 50. • To understand and use tens and ones to explain the structure of 2-digit numbers for numbers to 50. • To place numbers up to 50 on a number line. • To know and use one more and one less than	• To count fluently in 2s, 5s, and tens. • To make and add equal groups. • To use repeated addition to solve problems. • To understand and use array to solve problems. • To use grouping and sharing to solve problems. • To know doubles up to 10+10.	• To sequence events across a day. • To know and order the days of the week. • To solve problems using their knowledge of the days of the week. • To know and sequence the months of the year. • To tell the time to the hour and half hour. • To understand hours minutes and seconds, including how these relate to each other.

		families for numbers up to 10. • To be able to write the addition and subtraction fact families for numbers up to 10. • To be able to work out how many more.	• To subtract numbers using drawings, tens frames, counting on and number line. • To find and make number bonds to help subtraction (number splits). • To know when to use addition or subtraction to solve a worded problem.	numbers up to 50. • To compare numbers using < = > in an expression. • To order numbers to 50 independently.	• To use knowledge of doubles to solve problems. • To use a number line to solve problems.	
Strand	**Addition within 10.**	**Place Value to 20**	**Place Value to 50**	**Measurement (Length and height)**	**Fractions**	**Place Value to 100**
Vocabulary	Add, equals, number sentence, expression, part-whole, more,	Count, sort, group, number sentences, expression, fewer, greater, equal, less than, more than, equal, <, =, >, fewest, smallest, greatest, representation, prove, check	Count, sort, group, number sentences, expression, fewer, greater, equal, less than, more than, equal, <, =, >, fewest, smallest, greatest, representation, prove, check	Compare, long, length, tall, height, measure, centimetre, cm, accurate	Whole, half, quarter, fraction, equal	Count, sort, group, number sentences, expression, fewer, greater, equal, less than, more than, equal, <, =, >, fewest, smallest, greatest, representation, prove, check
Skills and Knowledge	• To use a part whole model to explain mathematical expressions (number sentences). • To write and solve mathematical expressions using + and =. • To know and use addition fact families for	• To count, read and write, forwards and backwards numbers to 20 independently with the correct spelling and formation. • To count in 2s to 20. • To understand and use tens and ones to explain the structure of 2-digit numbers.	• To count, read and write, forwards and backwards numbers to 50 independently with the correct spelling and formation. • To count in 2s to 30. • To count in tens to 50. • To understand and use tens and ones to explain the structure of 2-digit numbers for numbers to 50.	• To compare heights and lengths of 3 objects. • To measure objects using non-standard measurements. • To measure objects using standard measurements (cm). • To solve simple practical	• To understand that a half is one of two equal parts. • To understand that a quarter is one of four equal parts.	• To count forwards and backwards to 100. • To count forwards and backwards starting at different points within 100. • To know one more and one less for numbers within 100. • To put numbers up to 100 on a blank number

	numbers up to 10. • To rapidly recall number bonds to 10 and begin to use this knowledge to solve calculations. • To use drawings to support addition calculations. • To add to numbers together. • To be able to work out how many more.	• To place numbers up to 20 on a number line. • To know and use one more and one less than numbers up to 20. • To compare numbers using < = > in an expression. • To order numbers to 20 independently.	• To place numbers up to 50 on a number line. • To know and use one more and one less than numbers up to 50. • To compare numbers using < = > in an expression. • To order numbers to 50 independently.	problems for measurement (order heights and lengths) • To solve simple worded problems for measurement.	• To find a fraction of a shape. • To find a fraction of an amount. • To find a quarter of a shape. • To find a quarter of an amount. • To solve simple reasoning problems using their knowledge of half and quarter.	line, relative to each other and 100. • To use tens and ones as well as a place value grid to expose the structure of numbers up to 100. • To partition numbers using a variety of representations. • To compare numbers. • To order 3 numbers.
Strand		**Shape**		**Measurement (mass and volume)**	**Time**	**Money**
Vocabulary		Cube, cuboid, cylinder, pyramid, cone, sphere, triangular prism, rectangle, circle, square, triangle, 2D, 2D, curved, flat, face		Compare, weight, mass, heavy, heavier, light lighter, full, half-full, nearly full, empty, measure, capacity, volume	Day, week, month, January, February, March, April, May, June, July, August, September, October, November, December, first, then, next, morning, evening	Pence, pound, coin, note
Skills and knowledge		• Recognise, name and sort 3D shapes. • Describe the faces 3D shapes using	•	• To compare mass and capacity of 3 objects. • To measure objects using	• To sequence events across a day.	• To recognise and order coins. • To recognise and order notes.

		names of 2D shapes. • Solve simple reasoning problems involving shape.		non-standard measurements. • To solve simple practical problems for measurement (order objects by mass/capacity) • To solve simple reasoning problems for measurement.	• To know and order the days of the week. • To solve problems using their knowledge of the days of the week. • To know and sequence the months of the year. • To tell the time to the hour and half hour. • To understand hours minutes and seconds, including how these relate to each other.	• To make given amounts of money. • To make the same amount of money in different ways.
Strand						**Position and Direction**
Vocabulary						Left, right, forwards, backwards, half turn, quarter turn, full turn, top, in between, bottom,

						above, below, position, direction
Skills and knowledge						• To know and use left and right, up and down. • To describe the position of an object relative to another object. • To understand and use half turn, quarter turn and whole turn to solve problems.

Year 2 Progression

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Key facts	**To independently count in 2s, 5s, and 10s. To rapidly recall and use multiplication and division facts for 2, 5 and 10.**					
Strand	**Place Value**	**Money**	**Statistics**	**Fractions**	**Worded problems (Addition and subtraction)**	**Position and direction**
Vocabulary	Count, sort, group, number sentences, expression, fewer, greater, equal, less than,	Coins, notes, pounds, pence, £, change, total, amount, difference	Tally, pictogram, block diagram, total, altogether, more, less, difference	Fraction, part, whole, whole, half, quarter, three-quarter, equal	Add, addition, more, total, altogether, remaining, difference	Left, right, half turn, quarter turn, full turn, clockwise anti-clockwise, rotate

	more than, equal, <, =, >, fewest, smallest, greatest, representation, prove, check					
Skills and knowledge	• To count, read and write, forwards and backwards numbers to 100 independently with the correct spelling and formation. • To reliable count objects up to 100 by grouping in tens and ones. • To use a variety of representations to illustrate numbers up to 100 (part-whole, base ten tens frames, straws, bead string, bead bar, numicon) • To quickly partition numbers.	• To recognise coins and notes and understand the value relative to each other. • To make amounts in coins, notes and mixed coins and notes. • To compare amounts including mixed coins and notes. • To add amounts including adding mixed amounts. • To find the difference between amounts. • To calculate change.	• To recognise use and interpret a tally chart. • To recognise use and interpret a pictogram. • To use a scale on a pictogram (where one picture represents either, 2, 5 or 10). • To recognise use and interpret a block diagram. • To use a scale on a block diagram (where one block represents either, 2, 5 or 10).	• To identify equal parts of a shape. • To recognise and find half of a shape or number (including 2-digit numbers). • To recognise and find a quarter of a shape or number (including 2-digit numbers). • To recognise and find a third of a shape or number (including 2-digit numbers). • To recognise and find three quarters of a	• To use knowledge of addition to solve worded problems including 2 step worded problems. • To use knowledge of subtraction to solve worded problems including 2 step worded problems.	• To describe the position of an object. • To describe the movement of an object (a route). • To understand and use quarter turn, half turn, whole turn clockwise and anti-clockwise. • To solve problems involving turns.

	• To know One more one less of numbers up to 100. • To compare up to 4 numbers using < = > in an expression. • To know how to put numbers up to 100 on a blank number line and use it to order numbers. • To compare and order number independently. • To count in 2s, 5s and 10s independently. • To begin to count in 3s.	• To calculate change as part of a two-step problem.	• To record data using statistics. •	shape or number (including 2-digit numbers). • To understand and write unit fractions. • To understand and write non-unit fractions (2/3, 3/4). • To count in fractions • To know that 2/4 is equivalent to 1/2.		
Strand	**Addition and subtraction.**	**Multiplication and Division**	**Shape**	**Measurement (Length and height)**	**Worded problems (Multiplication and Division)**	**Fractions**
Vocabulary	Add, equals, number sentence, expression, part-whole, more,	Multiply, multiple, divide, pair, twice, equal, unequal, array, row, column	2D, 3D, circle, square, rectangle, quadrilateral, pentagon, octagon, cone, cylinder, cube,	Compare, long, length, tall, height, measure, centimetre, cm, metre, m, accurate	Multiply, divide, groups of, lots of, altogether, remaining, difference	Whole, half, quarter, three-quarter, third, equal.

			cuboid, sphere, triangular prism, sides, vertices, edges, line of symmetry, faces, curved, flat			
Skills and Knowledge	• To know and use the number bonds to 100 for the multiples of ten. • To rapidly identify and use number splits to support efficient addition and subtraction. • To add a multiple of 10 to a 2-digit number efficiently. • To use a place value grid to add and subtract 2-digit numbers, exchanging where necessary. • To use a number line to efficiently add and subtract 2-digit numbers (jumping to the nearest 10 etc). • To solve reasoning and worded	• To independently count in 2s, 5s, and 10s. • To count in 3s. • To know multiplication facts for 2, 5 and 10. • To understand and use the x and ÷ symbols. • To understand arrays and use them to solve problems. • To know that the 2 times table is equivalent to doubling. • To understand the relationship between the 2 times table and odd and even numbers. • To using sharing and grouping to	• To recognise common 2D and 3D shapes (see vocabulary). • To know the properties of commons 2D and 3D shapes. • To recognise a line of symmetry and be able to draw one. • To sort shapes by their properties. • To make extended repeating patterns including symmetrical ones.	• To compare heights and lengths of 3 objects using metres and centimetres. • To accurately measure objects using standard measurements (m, cm). • To solve problems for measurement (which may use any of the four number operations)	• To use knowledge of multiplication to solve worded problems. • To use knowledge of division to solve worded problems.	• To find a half, quarter, three-quarters or a third of numbers up to 50. • To solve worded problems for fractions.

	problems for addition and subtraction.	solve multiplication and division problems.				
Strand				**Measurement (mass, and temperature)**	**Time**	**Place Value to 100 (consolidation)**
Vocabulary				Compare, weight, mass, heavy, heavier, light lighter, temperature, hot cold, Centigrade, ˚C, degree, scale	Second, minute, hour, 24 hours, am, pm, half past, o'clock, quarter past	Count, sort, group, number sentences, expression, fewer, greater, equal, less than, more than, equal, <, =, >, fewest, smallest, greatest, representation, prove, check
Skills and knowledge				• To measure mass in kilograms and grams. • To compare measurements of mass and order them using standard units. • To choose sensible units to measure the mass of an object. • To solve worded problems using mass (which may use any of the four	• To tell the time to the hour, half hour and quarter past. • To solve problems relating to time in minutes or hours. • To know that there are 24 hours in a day and read a 24hour time. • To write time in minutes and ours with an awareness of am and pm.	• To quickly partition numbers up to 100 using different representations. • To use partitioning numbers to support addition and subtraction of 2-digit to 2-digit numbers. • To recall number facts quickly and efficiently. • To add numbers onto a blank number line bridging through 100.

				number operations). • To read a scale which may be calibrated in 1s, 2s, 5s, 10s or 100s.	• To tell time to 5 minutes.	
Strand					**Measurement** **Volume and capacity**	
Vocabulary					Compare, volume, capacity, full, half-full, nearly full, empty, measure, millilitres, ml litres, l, scale	
Skills and knowledge					• To compare the volume of 3 objects using millilitres and litres. • To read a scale which may be calibrated in 1s, 2s, 5s, 10s or 100s. • To choose sensible units to measure the volume of a fluid. • To accurately measure objects using standard measurements (ml, l).	

					• To solve problems for measurement (which may use any of the four number operations)	