

Maths Curriculum Coverage Document

Aims	Year 1	Year 2	Year 3	Year 4	Years 5	Year 6
The Primary Unit at Muntham House follows the White Rose Scheme of learning. Each year group follows a specific pattern, allowing pupils to work at their current level despite their chronological year groupings. An alternative programme for key skills within maths is delivered to pupils whom are unable to access the Year 1 programme. Pupils sit SATs in Yr 2 and Yr 6. This is completed within classes and marked externally. Pupils also sit a multiplication test in Yr 4. Alongside the White Rose Programme, pupils have access to continuous maths provisions within class, our outdoor space and R2L intervention space. Pupils	 Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least Count to and across 100, forwards and backwards, beginning with zero or 1, or from any given number Compare numbers using >, < and = signs Read and write numbers from 1 to 20 in numerals 	0 up to 100; use and = signs	Place Value Count from 0 in multiples of 4, 8 50 and 100; find 10 or 100 more or less than a given number Recognise the place value of each digit in a three-digit number (hundreds, tens, ones) Compare and order numbers up to 1000 Identify, represent and estimate numbers using different representations Read and write numbers up to 1000 in numerals and in words Solve number problems and practical problems involving these ideas.	 25 and 1000 Find 1000 more or less than a given number Count backwards through zero to include negative numbers Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) Order and compare numbers beyond 1000 Identify, represent and estimate numbers using different representations Round any number to the nearest 10, 100 or 1000 Solve number and practical problems that involve all of the above and with increasingly large positive numbers Read Roman numerals to 100 (I to C) and know that over 	Place Value read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 Solve number problems and practical problems that involve all of the above Read Roman numerals to 1000 (M) and recognise years written in Roman numerals	Place Value Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit Round any whole number to a required degree of accuracy Use negative numbers in context, and calculate intervals across zero Solve number and practical problems that involve all of the above.
Pupils also sit a multiplication test in Yr 4. Alongside the White Rose Programme, pupils have access to continuous maths provisions within class, our outdoor space and R2L	• Count in 2s, 5s and 10s			 Solve number and practical problems that involve all of the above and with increasingly large positive numbers Read Roman numerals to 100 	 Read Roman numerals to 1000 (M) and recognise years written 	

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• Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer) • Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs • Represent and use number bonds and related subtraction facts within 20 • Add and subtract 1-digit and 2-digit numbers to 20, including zero	 Solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures applying their increasing knowledge of mental and written methods Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: 	 Add and subtract numbers mentally, including: a three-digit number and ones a three-digit number and tens a three-digit number and hundreds Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction 	columnar addition and subtraction where appropriate	 Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) Add and subtract numbers mentally with increasingly large numbers Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why 	 Addition, Subtraction, Multiplication and Division Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context Perform mental calculations, including with mixed operations and large numbers Identify common factors, common multiples and prime numbers Use their knowledge of the order of operations to carry out calculations involving the four operations Solve addition and subtraction multistep problems in contexts, deciding which operations and methods to use and why Solve problems involving addition, subtraction, multiplication and division Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy

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Recognise and name common 2-D and 3-D shapes, including: 2-E shapes [for example, rectangles (including squares), circles and triangles]; 3-D shapes example, cuboids (inc cubes), pyramids and spheres]	 Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces Identify 2-D shapes on the surface 	 multiplication tables Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two- digit numbers times one-digit numbers, using mental and 	units of measure [for example, kilometre to metre] Estimate, compare and calculate different measures Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres Find the area of rectilinear shapes by counting squares	 Multiplication and Division Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers Know and use the vocabulary of prime numbers, prime factors and composite (nonprime) numbers Establish whether a number up to 100 is prime and recall prime numbers up to 19 Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers Multiply and divide numbers mentally drawing upon known facts Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 	 including fractions > 1 Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, 1/4 × 1/2 = 1/8] Divide proper fractions by whole numbers [for example, 1/3 ÷ 2 = 1/6] Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3/8] Identify the value of each digit in numbers given to three decimal

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Measure and begin to record the following: > lengths and heights > mass/weight > capacity and volum compare, describe and solv practical problems for: > lengths and heights [forexample, long/short, longer/shorter, tall/short, double/half] > mass/weight [forexample, heavy/light, heavier than, lighter than] > capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]	value Find different combinations of coins that equal the same amounts of money Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change	mass (kg/g); volume/capacity (I/mI) Measure the perimeter of simple 2-D shapes	Multiplication and Division Recall multiplication and division facts for multiplication tables up to 12 × 12 Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers Recognise and use factor pairs and commutativity in mental calculations Multiply two-digit and three-digit numbers by a one-digit number using formal written layout Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.	 with 1 as a mixed number [for example, 2/5 + 4/5 = 6/5 = 1 1/5] Add and subtract fractions with the same denominator and denominators that are multiples of the same number Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams 	measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places Convert between miles and kilometres Recognise that shapes with the same areas can have different perimeters and vice versa Recognise when it is possible to use formulae for area and volume of shapes Calculate the area of parallelograms and triangles Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm³) and cubic metres (m³), and extending to other units [for example, mm³ and km³].

Aims	Year 1	Year 2	Year 3	Year 4		Year 6
	Multiplication and Division	Multiplication and Division	Fractions	Decimals and Fractions	Measure Measure	Ratio and Proportion
	Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.	 Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts 	 Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10 Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators Recognise and use fractions as numbers: unit fractions and non- 	 Recognise and show, using diagrams, families of common equivalent fractions Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number Add and subtract fractions with the same denominator Recognise and write decimal equivalents of any number of tenths or hundredths Recognise and write decimal equivalents to 1/4, 1/2, 3/4 Find the effect of dividing a 	 Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm²) and square metres (m²) and estimate the area of irregular shapes Estimate volume [for example, using 1 cm³ blocks to build cuboids (including cubes)] and capacity [for example, using water] Solve problems involving converting between units of time Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling. 	 Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison Solve problems involving similar shapes where the scale factor is known or can be found

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	 Fractions Recognise, find and name a half as one of two equal parts of an object, shape or quantity Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity. Position and Direction Describe position, direction 	standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels Compare and order lengths, mass, volume/capacity and record the results using >, < and = Fractions Recognise, find, name and write	Time Tell and write the time from an	Money Estimate, compare and calculate different measures, including money in pounds and pence Complete money word problems using both £ and p in practical contexts. Time Convert between different	 Statistics Solve comparison, sum and difference problems using information presented in a line graph Complete, read and interpret information in tables, including timetables Shape Identify 3-D shapes, including 	 Algebra Use simple formulae Generate and describe linear number sequences Express missing number problems algebraically Find pairs of numbers that satisfy an equation with two unknowns Enumerate possibilities of combinations of two variables. Statistics Interpret and construct pie charts
	and movement, including whole, half, quarter and three quarter turns.	fractions 1/3, 1/4, 2/4 and 3/4 of a length, shape, set of objects or quantity Write simple fractions for example 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2.	analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks	units of measure [for example, hour to minute] Complete time word problems using both hours and minutes in practical contexts.	cubes and other cuboids, from 2: D representations Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles Draw given angles, and measure them in degrees (°) Use the properties of rectangles to deduce related facts and find missing lengths and angles Distinguish between regular and irregular polygons based on reasoning about equal sides and angles. Identify:	 and line graphs and use these to solve problems Calculate and interpret the mean as an average.
	 Money Recognise and know the value of different denominations of coins and notes 	 Compare and sequence intervals of time Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times Know the number of minutes in an hour and the number of hours in a day. 	2-D shapes	 Shape Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes Identify acute and obtuse angles and compare and order angles up to two right angles by size Identify lines of symmetry in 2-D shapes presented in different orientations Complete a simple symmetric figure with respect to a specific line of symmetry. 	Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.	· ·

Aims Ye		Year 2	Year 3	Year 4	Years 5	Year 6
	Sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] Recognise and use language relating to dates, including days of the week, weeks, months and years Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.	by counting the number of objects in each category and sorting the categories by quantity	 Interpret and present data using bar charts, pictograms and tables Solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts 	 Statistics Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs. 		 Describe positions on the full coordinate grid (all four quadrants) Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.
		 Position and Direction Order and arrange combinations of mathematical objects in patterns and sequences Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anticlockwise). 		 Position and Direction Describe positions on a 2-D grid as coordinates in the first quadrant Describe movements between positions as translations of a given unit to the left/right and up/down Plot specified points and draw sides to complete a given polygon 		