Intent for Maths

At The Mary Bassett Lower School, Mathematics is taught from Reception to Year 4 through the DFE approved Power Maths scheme. Mathematics is taught in discrete lessons as well as, interwoven through the whole curriculum. It is essential to everyday life, science, technology and engineering, and we teach children the importance of secure maths knowledge for future success in the wider, modern world. At The Mary Bassett Lower School we provide a high-quality mathematics education, which through the application of Power Maths, provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the power of mathematics, and a sense of enjoyment and curiosity about the subject. Whenever possible, we encourage pupils to apply their mathematical skills and knowledge for purpose in cross-curricular projects and problem solving opportunities.

In Key Stage 1, we aim for pupils to develop their confidence and mental fluency with whole numbers, counting and place value. Children are confident in working with numerals, words and the four operations, including the use of PCA resources. Pupils are confident in their understanding and application of number bonds to 20 and be precise in using and understanding place value. Pupils engage in regular opportunities to develop their fluency using Numbots online games in the classroom and at home.

By the end of Key Stage 2 study at our school, children will be fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time. Children will have a strong conceptual understanding and ability to recall and apply knowledge rapidly and accurately, including developing efficient written and mental methods, performing calculations accurately with increasingly large whole numbers. By the end of year 4, pupils will have memorised their multiplication tables up to and including the 12 multiplication tables and they will show precision and fluency in their work and through confident recall. Pupils engage in regular opportunities to develop their fluency using Times Table Rockstar online games in the classroom and at home.

Throughout the maths curriculum, pupils are introduced to a progressive understanding of key vocabulary so that by the end of year 4, pupils will read and spell mathematical vocabulary correctly and confidently both when analysing and understanding problems and when presenting reasoning and explanation of their thinking in maths lessons and the broader curriculum.

Maths Progression Map

Strand	Year 1	Year 2	Year 3	Year 4
Number - number and place value	• 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 0 or 1, or from any given number • given a number, identify one more and one less • 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, read and write numbers to 100 in	• count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number (Year 1) • count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens (Year 1) • recognise the place value of each digit in a two-digit number (tens, ones) • identify, represent and estimate numbers using different representations, including the number line • compare and order numbers from 0 up to 100; use <, > and = signs • count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward	• recognise the place value of each digit in a two-digit number (tens, ones) (Year 2) • compare and order numbers up to 1,000 • count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number • identify, represent and estimate numbers using different representations • recognise the place value of each digit in a three-digit number (100s, 10s, 1s),	• recognise the place value of each digit in a four-digit number (1,000s, 100s, 10s, and 1s) • count in multiples of 6, 7, 9, 25 and 1,000 • identify, represent and estimate numbers using different representations • find 1,000 more or less than a given number • order and compare numbers beyond 1,000 • round any number to the nearest 10, 100 or 1,000

	numerals; count in multiples of twos, fives and tens			
Number - addition and subtraction	• 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 • represent and use number bonds and related subtraction facts within 20 • read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs • solve one-step problems that involve addition and subtraction, using concrete objects and pictorial	• 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: a two-digit number and ones • count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward • solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures • use place value and number facts to solve problems	• Recognise the place value of each digit in a two-digit number (10s, 1s) (Year 2) • add and subtract numbers mentally, including: a three-digit number and ones, a three-digit number and tens, a three-digit number and hundreds • solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.	• add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate • estimate and use inverse operations to check answers to a calculation • solve addition and subtraction two- step problems in contexts, deciding which operations and methods to use and why

	representations, and missing number problems such as 7 = – 9. • add and subtract one-digit and two-digit numbers to 20, including zero	• recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.		
Geometry - properties of shape	• recognise and name common 2D and 3D shapes, including: 3D shapes [for example, cuboids (including cubes), pyramids and spheres].	• compare and sort common 2D and 3D shapes and everyday objects • identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line • order and arrange combinations of mathematical objects in patterns and sequences	• recognise angles as a property of shape or a description of a turn • identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle • draw 2D shapes and make 3D shapes using modelling materials; recognise 3D shapes in different orientations and describe them • identify horizontal and vertical lines and pairs of perpendicular and parallel lines	• identify acute and obtuse angles and compare and order angles up to two right angles by size • compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes • identify lines of symmetry in 2D shapes presented in different orientations • complete a simple symmetric figure with respect to a specific line of symmetry

Measurement	• compare, describe and solve practical problems for: lengths and heights [for example, long/short, longer/shorter, tall/short, double/half] • measure and begin to record the following: lengths and heights • recognise and know the value of different denominations of coins and notes • 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	• recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular 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 • choose and use appropriate 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	• measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) • measure the perimeter of simple 2D shapes • measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) • add and subtract amounts of money to give change, using both £ and p in practical contexts • tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks • estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight	• find the area of rectilinear shapes by counting squares • stimate, compare and calculate different measures, including money in pounds and pence • convert between different units of measure [for example, kilometre to metre; hour to minute] • measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres • estimate, compare and calculate different measures, including money in pounds and pence • convert between different units of measure [for example, kilometre to metre; hour to minute]

		>, < and = • results using >, < and = 2 2B Measurement 8 Length and height 5 Four operations with lengths and heights solve problems with addition and subtraction:using concrete objects and pictorial representations, including those involving numbers, quantities and measures • tell the time to the hour and half past the hour and draw the hands on a clock face to show these times (Year 1) • know the number of minutes in an hour and the number of hours in a day	• now the number of seconds in a minute and the number of days in each month, year and leap year • compare durations of events [for example to calculate the time taken by particular events or tasks].	
Number - multiplication and division	• count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens • solve one-step	• solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and	• write and calculate mathematical statements for multiplication and division using the multiplication tables	• recall multiplication and division facts for multiplication tables up to 12 × 12 • use place value, known and derived facts to

	problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.	multiplication and division facts, including problems in contexts. • calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs • recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers	that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods • Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables • solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects • 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,	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 • 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 • multiply two-digit and three-digit numbers by a one-digit number using formal written layout

			using mental and progressing to formal written methods	
Number - fractions	• recognise, find and name a half as one of two equal parts of an object, shape or quantity	• recognise, find and name a half as one of two equal parts of an object, shape or quantity (Year 1) • recognise, find, name and write 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. • s recognise, find, name and write fractions 1/3, 1/4, 2/4 and 3/4 of a length, shape, set of objects or quantity 2 2C Number – fractions 11 Fractions 12 Count in fractions up to a whole Non-statutory guidance: Pupils should count in fractions up to 10, starting from any	• recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators • compare and order unit fractions, and fractions with the same denominators • add and subtract fractions with the same denominator within one whole [for example, 5/7 + 1/7 = 6/7] • solve problems that involve all of the above	• non-statutory guidance: They practise counting using simple fractions and decimals, both forwards and backwards • ready to progress criteria (4F–1): Reason about the location of mixed numbers in the linear number system • recognise and show, using diagrams, families of common equivalent fractions • add and subtract fractions with the same denominator • 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

		number and using the 1/2 and 2/4 equivalence on the number line (for example, 1 1/4 , 1 2/4 (or 1 1/2), 1 3/4 , 2).		
Geometry - position and direction	• describe position, direction and movement, including whole, half, quarter and three-quarter turns • Non statutory guidance: Pupils use the language of position, direction and motion, including: left and right, top, middle and bottom, on top of, in front of, above, between, around, near, close and far, up and down, forwards and backwards, inside and outside	• 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 anti-clockwise).		• describe positions on a 2D grid as coordinates in the first quadrant • plot specified points and draw sides to complete a given polygon • describe movements between positions as translations of a given unit to the left/right and up/down
Statistics		• interpret and construct simple pictograms, tally charts, block diagrams and simple tables • ask and answer simple	• interpret and present data using bar charts, pictograms and tables	• interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and

		questions by counting the number of objects in each category and sorting the categories by quantity		time graphs • solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs. •
Decimals				• recognise and write decimal equivalents of any number of tenths or hundredths • find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths • compare numbers with the same number of decimal places up to two decimal places • recognise and write decimal equivalents to 1/4, 1/2, 3/4