Mathematics is a creative and highly inter-connected discipline . . . It is essential to everyday life. A high-quality mathematics education 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.

Burrough Green C of E Primary School Curriculum Map - Mathematics.

Mathematics		Number	Calculation		Fractions
		Number & Place Value	Addition & Subtraction	Multiplication & Division	Fractions
KS1 The principle focus of mathematics teaching in KS1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value	Y1	Count, read, and write nos. from 0 to 100 in numerals, and numbers 0 to 20 in words. Recognise patterns. Order numbers. Count in 2s, 5s and 10s. One more/less	Use and understand + - = signs. Number bonds (and subtraction facts) to 20.Add/subtract numbers to 20.Count forwards/ backwards. Solve addition/subtraction problems using objects/pictures. Missing numbers	Solve one step problems involving multiplication and division- use objects / pictorial representations and arrays. Group,share and double quantities. Connections between counting in 2's , 5's etc. and arrays/number patterns	Find half and quarter of objects, lengths, shapes and quantities. Understand 2 or 4 equal parts of a whole.- sharing objects equally and recombining to make whole
	Y2	Read/ write numbers from 0 to 100. Begin to read/write 3-digit nos. Recognise place value of digits in a 2-digit number, & some 3 digit nos.Begin to read, write and recognise 3-digit nos. Use ≥ ≤ = signs. Count in steps of 2,3, Partition numbers	Solve addition and subtraction problems with number, quantities and measures.Recall addition and subtraction facts to 20 and derive those to 100. Apply knowledge of bonds to 10 to calculate 70+30 etc. Understand inverse for addition	Know multiplication and division facts for 2,5,10 tables. Begin to use other multiplication and division for written/mental calculations.Use symbols x ÷ = Understand inverse with multiplication	Recognise, find , name ½ ¼ 1/3 2/4 ¾ of lengths, shapes, objects or quantities. Connect to equal sharing or grouping. Record simple fractions. Understand that ½ 2/4 are equivalent. Count to 10 in fractions and their equivalents.
		Measure	**Geometry**		**Data**
		Measurement	Properties of Shapes	Position & Direction	Statistics
	Y1	Measure, compare, describe Lengths /heights, mass/weight/capacity/volume and time. Know value of coins and notes. Sequence events in chronological order. Know names of days of the week, months of year. Tell times *to* hour and half past.	Recognise and name 2-D and 3-D shapes including: rectangles, circles, triangles, cubes, cuboids, pyramids and spheres.	Describe position and direction inc. whole half, quarter and three quarter turns. Use language to describe position: left, right, top, bottom, forwards backwards etc.	
	Y2	Measure, compare and order length height, mass, temperature and capacity using standard measures. Use symbols ≤≥ = £ p. Find combinations of coins that equal same amounts of money. Solve problems with addition and subtraction of money & giving change. Compare/ sequence time intervals. Tell/write the time to 5 minute intervals. Know minutes in an hour and hours in a day	Identify/describe the properties of 2-D & 3-D shapes.Identify 2-D shapes on the surface of 3-D shapes. Compare and sort common 2-D and 3-D shapes and everyday objects.	Order/arrange mathematical objects in patterns and sequences .Use mathematical vocabulary to describe position, direction and movement. Distinguish between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise).	Interpret / construct simple pictograms, tally charts, block diagrams and simple tables.Ask/ answer questions by counting the number of objects in each category and sorting the categories by quantity

Fluency in manipulating numbers, Reasoning, and Problem Solving underpin all learning in mathematics

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Mathematics		Number	Calculation		Fractions
		Number & Place Value	Addition & Subtraction	Multiplication & Division	Fractions
Lower KS2 The principle focus of mathematics teaching in lower KS2 is to ensure that pupils become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value	Y3	Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a number.Recognise value of each digit in a three-digit number (hundreds, tens, ones) Compare /order/read/write numbers up to 1000. Solve number problems.	Add/subtract 3 digit numbers mentally and with a formal written method. Estimate answers and use inverse operations to check answers Solve problems.	Use multiplication facts x3, x4 and x8 and division facts. Use these to calculate 2-digit by 1-digit numbers (mental & formal written methods.) Solve problems, inc. missing number and scaling.	Count in tenths.Find unit and non-unit fractions of objects and numbers. Compare and order fractions. Show equivalent fractions and add/subtract fractions with same denominator.
	Y4	Count in multiples of 6, 7, 9, 25 and 1000 and backwards beyond zero into negatives. Find 1000 more or less than a given number. Know place value in four-digit numbers. Order and compare numbers beyond 1000.Round to the nearest 10, 100 or 1000.Read Roman numerals to 100 (I to C).	Add /subtract numbers with up to 4 digits using written methods where appropriate. Check by estimating and using inverse. Solve problems using appropriate methods	Recall multiplication and division facts up to 12 × 12.Use place value, known and derived facts to multiply together three numbers. Recognise and use factor pairs/ commutativity. Multiply 2-digit and 3-digit numbers by a 1-digit number using formal written layout. Solve problems..	recognise and show common equivalent fractions. Count up/down in hundredths and that this is 'a whole' divided by 100.Identify 1/10 & 1/100 in decimal numbers. Round to 1 decimal place. Know decimals for 1/10 ¼ ½ 3/4. Calculate quantities & use fractions to divide quantities. Add/subtract fractions with the same denominator.
		Measure	**Geometry**		**Data**
		Measurement	Properties of Shapes	Position & Direction	Statistics
	Y3	Estimate/read time to nearest minute. Develop awareness of time durations. Measure, compare, add/subtract lengths, mass, volume / capacity Measure perimeter of simple shapes	Draw/make/describe 2-D & 3-D shapes. Recognise angles as properties of shape or turns. Identify right angles and those that are greater/less than. Understand that 2 right angles= half turn etc. Identify perpendicular and parallel lines.		Interpret /present data using bar charts, pictograms and tables. Solve one-step and two-step questions using scaled bar charts, pictograms and tables.
	Y4	Read, write, convert time using analogue & digital clocks, with 12 hour and 24 hour systems. Estimate, compare & calculate measures including money. Measure and calculate perimeter in cm and m. Find area of shapes by counting squares.	Compare/ classify geometric shapes, inc. quadrilaterals and triangles .Identify acute/ obtuse angles and compare /order angles up to two right angle Identify lines of symmetry in 2-D shapes	Describe and plot positions on a 2-D grid as coordinates in the first quadrant and draw sides to complete shapes.Describe movements between positions as translations left/right and up/down .	Interpret/present discrete and continuous data in bar charts and time graphs.Solve problems using information presented in bar charts, pictograms, tables and other graphs.

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Mathematics		Number	Calculation		Fractions
		Number & Place Value	Addition & Subtraction	Multiplication & Division	Fractions/decimals/percentages
Upper Ks2 The principal focus of mathematics teaching in upper key stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio.	Y5	Read, write, order and compare numbers to 1 000 000 and know value of digits.Count forwards/backwards in steps of powers of 10 up to 1 000 000. Count forwards/backwards with positive and negative whole numbers.Round to nearest 10, 100, 1000, 10 000 and 100 000. Read Roman numerals to 1000 (M) and recognise years.	Add/subtract whole numbers with more than 4 digits. Use formal written methods. Add/subtract large numbers mentally. Use rounding to check answers.Solve addition/ subtraction multi-step problems deciding which operations and methods to use.	Identify multiples, factors, prime numbers, prime factors , squared & cubed numbers. Multiply/Divide numbers up to 4 digits by a 1- or 2-digits using a formal written method. Multiply/divide numbers mentally. Multiply /divide numbers inc. decimals by 10, 100 and 1000. Solve problems inc. scaling /simple rates	Compare/order fraction, decimals, percentages and their equivalents. Recognise mixed/improper fractions.. Add/subtract fractions. Multiply proper fractions and mixed numbers by whole numbers. Read/write decimal numbers as fractions. Read, write, order and round decimals. Understand that per cent is'number of parts per hundred'.
	Y6	Read, write, order, round and compare numbers up to 10 000 000 & values of digits. Use negative numbers in context, and calculate intervals across zero.	Mental calculations, including with mixed operations and large numbers Use knowledge of the order of operations to carry out calculations and problems involving the four operations Use estimation to check answers to calculations.	Multiply & divide multi-digit numbers up to 4 digits by a 2-digit number using formal written methods. Interpret remainders as whole numbers, fractions, or by rounding Identify common factors, multiples and prime numbers Use knowledge of the order of operations to carry out calculations and problems involving the four operations Use estimation to check answers to calculations.	Simplify fractions and show fractions that are equivalent. Compare, order, add and subtract fractions. Multiply /divide simple proper fractions. Link fractions with division and calculate decimal/ fraction equivalents. Identify value of digits up to thousandths. Multiply numbers with two decimal places by whole numbers. Calculate with numbers that give decimal answers.
		Measure	**Geometry**		**Data**
		Measurement	Properties of Shapes	Position & Direction	Statistics
	Y5	Know conversions of metric units (e.g kilometre and metre; centimetre and metre) Understand/use approximate equivalences between metric/ imperial units. Measure/ calculate perimeter & area of shapes in cm/m. Estimate volume & capacity. Solve problems inc. converting between units of time	Identify 3-D shapes, from 2-D representations & distinguish between regular/irregular .Estimate/measure/ compare/draw acute, obtuse and reflex angles. Identify angles at a point, whole turn, straight line and 1/ 2 turn & other multiples of 90o Find missing lengths and angles.	Identify, describe and represent the position of a shape following a reflection or translation.	Solve problems using information presented in a line graph. Complete, read and interpret information in tables, including timetables.
	Y6	Solve problems involving the calculation and conversion of units of metric measure, using decimal notation to up to three decimal places Use formulae for area and volume of shapes. Find area of parallelograms and triangles. Calculate, estimate and compare volume of cubes/cuboids.	draw 2-D shapes using given dimensions and angles .Recognise, describe and build simple 3-D shapes. Compare /classify geometric shapes .Find unknown angles in triangles, quadrilaterals, and regular polygons Name parts of circles, including radius, diameter .Recognise angles where they meet at a point, on a straight line, or vertically opposite. Find missing angles.	Describe positions on the all four quadrants. Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.	Interpret and construct pie charts and line graphs and use these to solve problems .Calculate and interpret the mean as an average.

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Year 6 only	Ratio and Proportion	Algebra
	Solve problems involving the calculation of percentages e.g in pie charts, and the use of percentages for comparison. Solve problems involving finding scale factors of shapes. Solve problems involving ratio and proportion using knowledge of fractions and multiples.	Use simple formulae. Generate/describe linear number sequence. Record missing number problems algebraically Find pairs of numbers that satisfy an equation with two unknowns. Find all the possibilities of combinations that will agree with an equation

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