MATHEMATICS PROGRESSION MAP

	Early Years	Year 1	Year 2	Year 3	Year 4
Number and Place Value	Nursery Develop fast recognition of upto 3 objects, without having tocount them individually (subitizing.) • Recite numbers past 5. Say one number for each item in order: 1,2,3,4,5. Know that the last number reached whencounting a small set of objectstells you how many there are in total ('cardinal principle'). Show 'finger numbers' up to 5.Link numerals and amounts: for example, showing the rightnumber of objects to match the numeral, up to 5. • Experiment with their own symbols and marks as well asnumerals. Solve real world mathematical problems with numbers up to 5. Compare quantities using language: 'more than', 'fewer than'. Select shapes appropriately:flat surfaces for building, a triangular prism for a roof, etc. Combine shapes to make new ones – an arch, a biggertriangle, etc. Reception • Count objects, actions andsounds. • Link the number symbol (numeral) with its cardinalnumber value. • Count beyond ten. • Compare numbers • Understand the 'one	• count to and across 100, forwardsand backwards, beginning with 0 or 1 • count, read and write numbers to100 in numerals • given a number, identify one moreand one less • identify and represent numbers using objects and pictorial representations including the number line, and use the languageof: equal to, more than, less than (fewer), most, • count to and across 100, forwardsand backwards, beginning with 0 or 1, or from anygiven number • count to and across 100, forwardsand backwards, beginning with 0 or 1, or from any given number • count, read and write numbers to100 in numerals; <u>count in multiples of twos and tens</u> • given a number, identify one moreand one less • identify and represent numbersusing objects and pictorial representations includingthe number line, and use the language of: equal to,more than, less than (fewer), most, least • count to and across 100, forwardsand backwards, beginning with 0 or 1, or from any given number • count, read and write numbers to100 in numerals, count in multiples of 2 /5/10 given a number, identify one more and one less	• count in steps of 2 and 5 from 0and in tens from any number, forward and backward • recognise the place value ofeach digit in a two-digit number (tens, ones) • identify, represent and estimatenumbers using different representations, including the number line • compare and order numbersfrom 0 up to 100 • Read and write numbers to atleast 100 in numerals • use place value and numberfacts to solve problems • 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 ofeach digit in a two-digit number (tens, ones) • identify, represent and estimatenumbers using different representations, including the number line • compare and order numbersfrom 0 up to 100; use <, > and = signs • read and write numbers to atleast 100 in numerals • use place value and numberfacts to solve problems	• Count from 0 in multiples of4,8,50 and 100 • Finding 10 or 100 more or lessthan a given number • Recognise the place value of each digit in a three-digit number (hundreds, tens, ones) • Identify, represent and estimatenumbers using different representations • Read and write numbers to 500in numerals and in words • Compare and order numbers upto 500 • Count from 0 in multiples of 4,50 and 100 • Recognise the place value of each digit in a three-digit number (hundreds, tens, ones) • Read and write numbers to 1000in numerals and in words • Compare and order numbers upto 1000 • Identify, represent and estimatenumbers using different representations • Solve number problems and practical problems involvingthese ideas. • Count from 0 in multiples of 4,8, 50 and 100 • Review and consolidate objectives from Autumn andSpring tem	• Find 1000 more or less thana given number • Recognise the place value ofeach digit in a four-digit number (thousands, hundreds, tens and ones) • Order and compare numbersbeyond 1000 • Identify, represent and estimate numbers using different representations • Count in multiples of 6, 9, 25and 100 • Count backwards throughzero to include negative numbers • Round any number to thenearest 10, 100 or 1000 • Solve number and practicalproblems that involve all ofthe above and with increasingly large positive numbers • Count in multiples of 6, 7, 9,25 and 100 • Read Roman numerals to 100 (I to C) and understandhow, over time, the numeralsystem changed to include the concept of zero and place value. • Solve number and practicalproblems that involve all ofthe above and with increasingly large positive numbers

		Year 1	Year 2	Year 3	Year 4
Addition and Subtraction	Nursery • Automatically recall number bonds for numbers 0–5 and some to 10. Reception • Understand the 'one morethan/one less than' relationship between consecutive numbers. • Explore the composition ofnumbers to 10. • Automatically recall number bonds for numbers 0–5 and some to 10	• represent and use number bonds and related subtraction facts within 20 • solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as such as 7 = ▢ –9 • 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 one-digit andtwo-digit numbers to 20, including zero • solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ☐ 9 • 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 one-digit andtwo-digit numbers to 20, including zero • solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7= –9	• using concrete objects and pictorial representations, including those involving numbers, quantities and measures • applying knowledge of mental methods • recall and use addition and subtraction facts to 20 • add and subtract numbers using concrete objects, pictorial reps, and mentally,including: • A two-digit number and tens / ones / adding three one-digit numbers • recall and use addition and subtraction facts to 20 fluently, and use related facts up to 100 • show that addition of two numbers are commutative • recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems • using concrete objects and pictorial representations, including those involving numbers, and measures • applying their increasing knowledge of mental methods and written • recall and use addition and subtraction facts to 20 fluently, and derive and userelated facts up to 100 • add and subtract numbers using concrete objects, pictorial representations, and mentally, including: • adding three one-digits • add and subtract numbers using concrete objects, • a two-digit number and ones/ • two two-digit numbers • adding 3 one-digit numbers	• Add and subtract numbers mentally, including: • A three-digit number andones • A three-digit number andtens • A three-digit number andhundreds • Add and subtract numbers with up to three digits, usingpartitioning or three digits using the efficient written methods of columnar addition and subtraction., • including: • A three-digit number andones • A three-digit number andtens • A three-digit number andhundreds • Add and subtract numbers with up to • three digits using theefficient written • methods of columnar addition and subtraction • Estimate the answer to a • calculation and use inverse operations to • Add and subtract numbers mentally including • A three-digit number andones / tens/ hundreds • Add and subtract numbers with three digits using the efficient written methods ofcolumnar addition and subtraction. • Estimate the answer to a calculation and use inverse operations to check answers • 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 + 5 digits • Estimate and use inverse operations to check answers to a calculation (HW this term). • Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why. • Estimate and use inverse operations to check answers to a calculation • Add and subtract decimal numbers with up to two decimal places (problem solving context) •

		Year 1	Year 2	Year 3	Year 4
Multiplication and Division		• recognise odd and even numbers • Solve one step problems involving multiplication anddivision, by calculating the answer using the concreteobjects, pictoral representations and arrays with the support of a practitioner • . 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, 5and 10 multiplication tables, *including recognising odd and even numbers* • calculate mathematical statements for multiplicationand 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) anddivision of one number by another cannot • solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplicationand division facts, including problems in contexts • recall and use multiplication and division facts for the 2, 5and 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) anddivision of one number by another cannot solve problems using materials, arrays, repeated addition, mental methods, and multiplication and division facts.	• Recall and use multiplication and division facts for the 3 and 4 multiplication tables • Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including two-digit numbers times one-digit numbers, using mental strategies. • Solve problems, including missing number problems, involving multiplication and division, including 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 two-digit numbers times one-digit numbers, using mental and progressing to efficient written methods • Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables • Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including two-digit numbers times one-digit numbers, using mental and progressing to efficient written methods • Multiples of 10, missing numbers and 2 step problems	• Recall multiplication and division facts for multiplication tables up to 12 x 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 • Solve problems involving multiplying and adding, including using the distributive law to multiplytwo digit numbers by onedigit, integer scaling problems and harder correspondence problems such as which n objects are connected to m objects. • Recall multiplication and division facts for multiplication tables up to12 x 12 + Friday mornings (puzzles) • Multiply two-digit and three-digit numbers by aone-digit number using formal written layout • Recognise and use factor pairs and commutatively in mental calculations • Divide two and three digitnumbers by a one digit number using short division, including finding remainders • Recognise and use factor pairs and commutatively in mental calculations

		Year 1	Year 2	Year 3	Year 4
Fractions		• Recognise, find and name a half as one of two equal parts of a shape object or quantity. • recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.	• Recognise, find, name and write fractions 1/3, ¼, 2/4, and ¾ of a length, shape, set of objects or quantity. •	• 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 • Compare and order unit fractions with the same denominator • Add and subtract fractions with the same denominator within one whole (e.g. 5/7 + 1/7 = 6/7) • Solve problems that involve all of the above. • Recognise and use fractions as numbers; non-unit fractions with small denominators • Recognise and show, using diagrams, equivalent fractions with small denominators • Solve problems that involve all of the above • Recognise and use fractions as numbers; unit fractions and non-unit fractions with small denominators • Add and subtract fractions with the same denominator within one whole (e.g. 5/7 + 1/7 = 6/7	• Count up and down in hundredths; recognise that hundredths arise when dividing an object by a hundred and dividingtenths by ten • Solve problems involving increasingly harder fractions to calculate quantities, including non-unit fractions where the answer is a whole number • Add and subtract fractions with the samedenominator • Solve simple measures and money problems involving fractions and decimals to two decimal places. • Find the effect of dividing a one or two-digit numberby 10 and 100, identifyingthe value of the digits in the answer as ones, tenths and hundredths • Recognise and show, using diagrams, families of equivalent fractions • Recognise and write decimal equivalents to ¼;½; ¾ • Recognise and write decimal equivalents of any number of tenths orhundredths • Compare numbers with the same number of decimal places up to two decimal places • Round decimals with one decimal place to the nearest whole number • Solve simple measures and money problems involving fractions and decimals to two decimal places.

		Year 1	Year 2	Year 3	Year 4
Measures	• Compare length, weight and capacity	• compare, describe and solve practical problems for: • lengths and heights [for example, long/short, longer/ shorter, tall/short, double/half] • mass or weight [for example,heavy/light, heavier than, lighter than] • capacity/volume [for example,full/empty, more than, less than, half, half full, quarter • time [for example, quicker,slower, earlier, later] • recognise and use language relating to dates, including days of the week, weeks, months and years. • recognise and know the value of different denominations of coins and notes. • measure and begin to record the following: • capacity and volume • 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 • measure and begin to record the following: • lengths/heights/mass/weight • capacity and volume • time (hours, minutes, seconds) • recognise and know the value of different denominations of coins and notes • tell the time to the hour half past and draw the hands on a clock face	• compare and order lengths, mass, volume / capacity • compare and sequence intervals of time • solve simple problems in a practical context involving addition and subtraction ofmoney of the same unit, including giving change • ask and answer questions about totalling and comparing categorical data • compare and order lengths, mass, volume / capacity and record the results using >, <and = • compare and sequence intervals of time • choose and use appropriate standard units to estimate and measure length / heightin 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 = • compare and sequence intervals of time • *tell and write the time to fiveminutes*, including quarter past / to the hour and draw the hands on a clock face toshow these times • know the number of minutesin an hour and the number of hours in a day.	• Measure, compare, add and subtract lengths (m/cm/mm) and mass (kg/g) and volume/capacity (ml/l) • Measure the perimeter of simple 2-D shapes • Know 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. • Tell and write the time from an analogue clock and 12 hour and 24 hour clocks • Estimate and read time to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as am/pm, morning, afternoon, noon and midnight • Compare durations of events, for example to calculate the time taken by particular events or tasks. • Add and subtract amounts of money giving change, using both £ and p in practical contexts • Tell and write the time from an analogue clock, including using Roman numerals from 1 to X11, and 12 hour and 24 hour clocks • Estimate and read time to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as am/pm, morning, afternoon, noon/midnight. • Compare durations of events	• Convert between differentunits of measure (e.g. kilometre to metre; hour to minute) • Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres • Find the area of rectilinear shapes by counting • Estimate, compare and calculate different measures, including money in pounds and pence • Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days. • Convert between differentunits of measure (e.g. kilometre to metre; hour to minute) E.B. • Time Focus: • Read, write the time to the nearest minute using an analogue clock. • Read and write the time using a digital clock to 12 and 24 hours. • Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days • Estimate, compare and calculate different measures, including money in pounds and pence – linked to decimals

		Year 1	Year 2	Year 3	Year 4
Geometry – Properties of shapes	Nursery • Talk about and explore 2D and3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners'; 'straight', 'flat', 'round'. • Talk about and identify the patterns around them. For example: stripes on clothes, designs on rugs and wallpaper. Use informal language like 'pointy', 'spotty','blobs', etc. Extend and create ABAB patterns – stick, leaf, stick, leaf. Notice and correct an error in a repeating pattern. Begin to describe a sequence of events, real / fictional, using words such as 'first', 'then.'.. • Select, rotate and manipulateshapes to develop spatial reasoning skills. • Compose and decompose shapes so that children recognise a shape can have other shapes within it, just asnumbers can. • Continue, copy and createrepeating patterns	• recognise and name common 2-D and 3-D shapes, including: - 2-D shapes [for example, rectangles • (including - squares), circles and triangles] - 3D shapes [for example, cuboids • (including cubes), • pyramids and spheres] • Geometry: position and direction • describe position, direction and movement • recognise and name common 2-D and 3-D shapes, including: • 2-D shapes [for example, rectangles (including squares), circles and triangles] • 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]	• identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line • identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces • identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on apyramid] • compare and sort common 2-D and 3-D shapes and everyday objects • Geometry: position and direction • order and arrange combinations of mathematical objects in patterns and sequences • identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line • identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces • identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on apyramid] • compare and sort common 2-D and 3-D shapes and everyday objects	• Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations; and describe them with increasing accuracy • Recognise angles as a property of shape and associate angles with turning • Identify horizontal, vertical lines in relation to other lines. • Recognise angles as a property of shape and associate angles with turning • 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 • Identify horizontal, vertical, perpendicular and parallel lines in relation to other lines. • Review and consolidate objectives from Autumn and Spring term – specifically the properties of 2D and 3D shape.	• Compare and classify geometric shapes, including triangles, based on their properties and sizes. • 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. • Compare and classify geometric shapes, including quadrilaterals, based on their properties and sizes • Identify lines of symmetry in 2-D shapes presented in different orientations + oblique • Complete a simple symmetric figure with respect to a specific line of symmetry + oblique • Identify acute and obtuse angles and compare and order angles up to two right angles by size

		Year 1	Year 2	Year 3	• Year 4
Geometry – Position and Direction		• describe position, direction and movement, including whole, half, quarter and threequarter turns	• 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).	• Although there are no statutory requirements in the National Curriculum for this domain in Y3, as a school it has been decided that it would be good practice to revisit Y2 objectives or begin to introduce Y4 objectives where appropriate in other subjects or in other areas of maths.	• Describe positions on a 2-D gridas coordinates in quadrant • Plot specified points and draw sides to complete given polygon. • Describe positions on a 2-D grid as coordinates in the first quadrant • Plot specified points and draw sides to complete a given polygon. • Describe movement between positions as translations of a to the left/right and up/down
		Year 1	Year 2	Year 3	• Year 4
Statistics		No requirement in year 1	• ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity • interpret and construct simple pictograms, tally charts, block diagrams and simple tables • interpret and construct simple pictograms, tally charts, block diagrams and simple tables • ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity	• Interpret and present data using pictograms and tables • Solve one-step and two-step questions such as 'How many more?' and 'How many fewer?' using information presented in scaled pictograms and tables. • Interpret and present data using bar charts and tables • Solve one-step and two-step questions such as 'How many more?' and 'How many fewer?' using information presented in scaled bar charts and tables. • Interpret and present data using bar charts, pictograms and tables – Maths Investigation (First Names) • Solve one-step and two-step questions such as 'How many more?' and 'How many fewer?' using information presented in scaled bar charts and pictograms and tables.	• 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. • Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs – focus on 'time' and constructing own graphs. • Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs. • Interpret and present grouped data using appropriate graphical methods, including bar charts.

					• Statistical Investigation (First name length) • Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs. • Interpret data from a line graph (children are not required to draw their own line graphs at this stage