Maths Progression
Intent of the curriculum

At Woodeaves CE Academy School we follow the National Curriculum for mathematics. The National Curriculum aims to ensure that children:

1. become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately
2. reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
3. can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions

Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The programmes of study are, by necessity, organised into apparently distinct domains, but pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge to science and other subjects.
The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.

We will provide a maths curriculum which caters for the needs of all pupils that is both challenging and enjoyable, following the mastery approach. Our mastery approach to the curriculum is designed to progressively develop children's knowledge and understanding of mathematical concepts from the Early Years through to the end of Y6.   We incorporate sustained levels of challenge through varied and high-quality activities with a focus on fluency, reasoning and problem-solving. We provide a wide range of mathematical resources and teach pupils to show their workings in a concrete fashion before establishing ways of pictorially and formally representing their understanding.
We provide our children with a variety of mathematical opportunities, which will enable them to make the connections needed to enjoy greater depth in learning;

There is a strong emphasis on children articulating their understanding. Children explore maths in depth using mathematical vocabulary to reason and explain their thinking/workings. We teach pupils to explain their choice of methods and develop their mathematical reasoning skills.

We use frequent recap and recall strategies (Daily Practice, Flashback 4 etc) to ensure that knowledge sticks.

At each stage of learning, pupils should be able to demonstrate a deep, conceptual understanding of the given topic and be able to build on this over time.

Early Learning Goals and National Curriculum Links			
EYFS	Key Stage One	Lower Key Stage Two	Upper Key Stage Two
Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. By providing frequent and varied opportunities to build and apply this understanding - such as using manipulatives, including small pebbles and tens frames for organising counting - children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. It is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes.	The principal focus of mathematics teaching in key stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the four operations, including with practical resources [for example, concrete objects and measuring tools]. At this stage, pupils should develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money. By the end of year 2, pupils should know the number bonds to 20 and be precise in using and understanding place value. An emphasis on practice at this early stage will aid fluency. Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.	The principal focus of mathematics teaching in lower key stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value. This should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers. At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number. By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work. Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.	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. At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them. By the end of year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages. Pupils should read, spell and pronounce mathematical vocabulary correctly.

At Woodseaves children will:							
	EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six

Number 1 – Number & Place Value		1	2	3	4	5	6
	*Combine objects like stacking blocks and cups. *Put objects inside others and take them out again. *Take part in finger rhymes with numbers. *React to changes of amount in a group of up to three items. *Compare amounts, saying 'lots', 'more' or 'same'. *Develop counting-like behaviour, such as making sounds, pointing or saying some numbers in sequence. *Count in everyday contexts, sometimes skipping numbers '1-2-3-5'.	**1N2a** Count, read and write numbers to 100 in numerals	**2N2a** Read and write numbers to at least 100 in numerals and in words	**3N2a** Compare and order numbers up to 1000 Read and write numbers to 1000 in numerals and words	**4N2** Order and compare numbers beyond 1000	**5N2** Read, write, order and compare numbers to at least 1 000 000	**6N2** Read, write, order and compare numbers to at least 10 000 000
	*Develop fast recognition of up to 3 objects, without having to count them individually. *Recite numbers past 5. *Say one number for each item in order :1, 2, 3, 4, 5. *Know that the last number reached when counting a small set of objects tells you how many there are in total. *Show 'finger numbers' up to 5. *Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5. *Experiment with their own symbols and marks a swell as numerals.	**1N2b** Given a number, identify one more and one less	**2N2b** Compare and order numbers from 0 up to 100; use <, > and = signs	**3N2b** Find 10 or 100 more or less than a given number	**4N2b** Find 1000 more or less than a given number		
	*Count objects, actions and sounds. *Link the number symbol (numeral) with its cardinal number value. *Count beyond twenty. *Compare numbers. *Understand the 'one more than/one less than' relationship between consecutive numbers. *Explore the composition of numbers to 10. *Automatically recall number bonds for numbers up to 5 and some to 10. *Automatically recall some double facts. *Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity. *Explore and represent patterns with numbers up to 10, including evens and odds.	**1N2c** Read and write numbers from 1 to 20 in numerals and words					
			2N3 Recognise the place value of each digit in a two-digit number (tens, ones)	**3N3** Recognise the place value of each digit in a three-digit number (hundreds, tens, ones)	**4N3a** Recognise the place value of each digit in a four digit number (thousands, hundreds, tens and ones)	**5N3a** Determine the place value of each digit in numbers up to 1 000 000	**6N3** Determine the place value of each digit in numbers up to 10 000 000
					4N3b Read Roman numerals to 100 (I to C and know that over time the numeral system changed to include the concept of zero and place value	**5n3b** Read Roman numerals to 1000(M) and recognise years written in Roman numerals	
		1N4 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	**2N4** Identify, represent and estimate numbers using different representations, including the number line	**3N4** Identify, represent and estimate numbers using different representations	**3N4a** Identify, represent and estimate numbers using different representations		
					4N4b Round any number to the nearest 10, 100 or 1000	**5N4** Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000, and 100 000	**6N4** Round any whole number to a required degree of accuracy
				3N5 read and write numbers up to 1000 in numerals and in words	**4N5** Count backwards through zero to include negative numbers	**5N5** Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero	**6N5** Use negative numbers in context and calculate intervals across zero
			2N6 Use place value and number facts to solve problems	**3N6** Solve number problems and practical problems involving 3N1 - 3N5	**4N6** Solve number and practical problems that involve 4N1-4N5 and with increasingly large positive numbers.	**5N6** Solve number and practical problems that involve 5N1-5N5	**6N6** Solve number and practical problems that involve 6N1-6N5

Vocabulary	zero number one, two, three … to twenty and beyond teens numbers, eleven, twelve … twenty none how many …? count, count (up) to, count on (from, to), count back (from to) count in ones, twos, fives, tens is the same as more, less odd, even few pattern pair	numeral, forwards, backwards, equal to, equivalent to, most, least, many, multiple of, equal to, half-way	hundred, thousand, tally, sequence, continue, predict, greater than, less than, 1/2/3 digit number, place value, represents, exchange	factor of, relationship, Roman numerals, one hundred more/less, approximately, round, nearest	ten thousand, hundred thousand, million, consecutive, integer, positive, negative, minus, negative numbers	factor pair, greater than or equal to, less than or equal to, formula, divisibility, square numer, prime numer, ascending, descending,	factorise, prime factor, digit total,
Number 2 – Four Operations		1C1 Represent and use number bonds and related subtraction facts within 20	2C1a Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100	3C1 Add and subtract numbers mentally, including: • a three digit number and ones • a three digit number and tens a three digit number and hundreds		5C1 Add and subtract numbers mentally with increasingly large numbers	
			2C1b Add and subtract numbers mentally, including: •a two-digit number and ones • a two-digit number and tens •two two-digit numbers •adding three one-digit numbers				
		1C2a Add and subtract one-digit and two-digit numbers to 20, including zero ones	2C2 Add and subtract numbers using concrete objects and pictorial representations, including: •a two-digit number and •a two-digit number and tens •two two-digit numbers •adding three one-digit numbers	3C2 Add and subtract numbers with up to 3 digits, using formal written methods of columnar addition and subtraction.	4C2 Add and subtract numbers with up to 4 digits, using formal written methods of columnar addition and subtraction	5C2 Add and subtract numbers with up more than 4 digits, using formal written methods of columnar addition and subtraction	
		1C2b Read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) signs					
			2C3 recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems	3C3 Estimate the answer to a calculation and use inverse operations to check answers	4C3 Estimate and use inverse operations to check answers to a calculation	5C3 Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy	6C3 Use estimation to check answers to calculations, in the context of a problem, an appropriate degree of accuracy
		1C4 Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 10 + 7 = ☐ - 9	2C4 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 method	3C4 Solve problems. including missing number problems, using number facts, place value and more complex addition and subtraction	4C4 solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.	5C4 Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.	6C4 Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
						5C5a Identify multiples and factors, including finding all factor pairs of a number and common factors of two numbers	6C5 Identify common factors, common multiples and prime numbers
						5C5b Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers	
						5C5c Establish whether a number up to 100 is prime and recall prime numbers up to 19	
						5C5d Recognise and use square numbers and cube numbers and the notation for squared (^{2}) and cubed (^{3})	
			2C6 Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers	3C6 Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables	4C6a Recall multiplication and division facts for multiplication tables up to 12 × 12	5C6a Multiply and divide numbers mentally drawing upon known facts	6C6 Perform mental calculations, including with mixed operations and large numbers
					4C6b 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	5C6b Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000	
					4C6c Recognise and use factor pairs and commutativity in mental calculations		
			2C7 Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs	3C7 Write and calculate mathematical statements for multiplication and division using the multiplication tables that children know, including for two-digit numbers times one-digit	4C7 Multiply two-digit and three-digit numbers by a one-digit number using formal written layout	5C7a Multiply numbers up to 4 digits by a one or two-digit number using a formal written method, including long	6C7a Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long

			numbers, using mental and progressing to formal written methods		multiplication for two digit numbers	multiplication
					5C7b 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	6C7b 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
						6C7c Divide numbers up to 4 digits by a 2 digit number using the formal written method of short division where appropriate, interpreting remainders according to the context
	1C8 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	2C8 Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts	3C8 Solve problems, including missing number problems, involving X and division, including integer scaling problems and correspondence problems in which n objects are connected to m objects	4C8 Solve problems involving X and +, including using the distributive law to multiply 2 digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects	5C8a Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes	6C8 Solve problems involving addition, subtraction, multiplication and division
					5C8b Solve problems involving all 4 operations, combination of these, including understanding the meaning of the equals sign	
					5C8c Solve problems involving multiplication and division including scaling by simple fractions and problems involving simple rates	
		2C9a Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot				6C9 Use their knowledge of the order of operations to carry out calculations involving the four operations
		2C9b Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot				
Vocabulary	add, more, and make, sum, total altogether double one more, two more ... ten more how many more to make ...? how many more is ... than ...? how much more is ...? take away how many are left/left over? how many have gone? one less, two less, ten less ... how many fewer is ... than ...? how much less is ...? difference between, sharing doubling halving number patterns	addition, near double, half, halve, subtract, equals, is the same as, number bonds, missing number, multiplication, multiply, multiple, divide, division, dividing, array	groups of, times, repeated addition, divided by, share, share equally, groups, pairs, row, column, facts	hundreds boundary, factor, product, remainder	inverse, square, squared, cube, cubed,	tenths boundary,
Number 3 – Fractions, Decimals & Percentages	1F1a Recognise, find and name a half as one of two equal parts of a object, shape or quantity	2F1a Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity	3F1a 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	4F1 Count up and down in hundredths; recognise that hundredths arise when dividing an object by a hundred and dividing tenths by ten		
	1F1b Recognise, find and name a quarter as one of four equal parts of a object, shape or quantity	2F1b Write simple fractions [eg: $\frac{1}{2}$ of 6 = 3]	3F1b Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators			
			3F1c Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators			
		2F2 Recognise the equivalence of $\frac{1}{2}$ and $\frac{2}{4}$	3F2 Recognise and show, using diagrams, equivalent fractions with small denominators	4F2 Recognise and show, using diagrams, families of common equivalent fractions	5F2a Recognise mixed numbers and improper fractions and convert from one form to the other; write mathematical statements >1 as a mixed number eg: $\frac{2}{5} + \frac{4}{5} = 1\frac{1}{5}$	6F2 Use common factors to simplify fractions; use common multiples to express fractions in the same denomination
					5F2b Identify name and write	

Category							
						equivalent fractions of a given fraction, represented visually, including tenths and hundredths	
				3F3 Compare and order unit fractions and fractions with the same denominators		**5F3** Compare and order fractions whose denominators are all multiples of the same number	**6F3** Compare and order fractions, including fractions >1
				3F4 Add and subtract fractions with the same denominator within one whole eg $\frac{5}{7}+\frac{1}{7}=\frac{6}{7}$	**4F4** Add and subtract fractions with the same denominator	**5F4** Add and subtract fractions with the same denominator and denominators that are multiples of the same number	**6F4** Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions
						5F5 Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	**6F5a** Multiply simple pairs of proper fractions, writing the answer in its simplest form eg $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$
							6F5b Divide proper fractions by whole numbers eg $\frac{1}{3} \div 2 = \frac{1}{6}$
					4F6a Recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$	**5F6a** Read and write decimal numbers as fractions [eg: $0.71 = \frac{71}{100}$]	**6F6** Associate a fraction with division to calculate decimal fraction equivalents (eg: 0.375) for a simple fraction [eg: 3/8]
					4F6b Recognise and write decimal equivalents of any number of tenths or hundredths	**5F6b** Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	
					4F7 Round decimals with one decimal place to the nearest whole number	**5F7** Round decimals with two decimal places to the nearest whole number and to one decimal place	
					4F8 Compare numbers with the same number of decimal places up to two decimal places	**5F8** Read, write, order and compare numbers with up to three decimal places	
					4F9 Find the effect of dividing a 1- or 2 digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths		**6F9a** Identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places
							6F9b Multiply one-digit numbers with up to two decimal places by whole numbers
							6F9c Use written division methods in cases where the answer has up to 2-decimal places
				3F10 Solve problems that involve 3F1–3F4	**4F10a** 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	**5F10** Solve problems involving numbers up to three decimal places	**6F10** Solve problems which require answers to be rounded to specified degrees of accuracy
					4F10b Solve simple measure and money problems involving fractions and decimals to two decimal places		
						5F11 Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred'; write percentages as a fraction with denominator hundred, and as a decimal	**6F11** Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts
						5F12 Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$ and $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25	
Vocabulary	**parts of a whole half quarter**	**fraction equal part equal grouping equal sharing, one of two equal parts**	equivalent fractions, mixed number, numerator, denominator, one third	sixths, sevenths, eighths, tenths	hundredths, decimals, proportion,	proper fraction, improper fraction, reduced to, thousandths, percentage,	ratio,
Ratio							**6R1** Solve problems involving the relative sizes of two quantities, where missing values can be found by using integer multiplication and division facts
							6R2 Solve problems involving the calculation of percentages [eg: of measures such as 15% of 360] and the use of percentages for comparison

							6R3 Solve problem involving similar shapes where the scale factor is known or can be found
							6R4 Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples
Vocabulary							
Algebra							6A1 Express missing number problems algebraically
							6A2 Use simple formulae
							6A3 Generate and describe linear number sequences
							6A4 Find pairs of numbers that satisfy an equation with two unknowns
							6A5 Enumerate possibilities of combinations of two variables
Vocabulary							formulae, equation, unknown, variable,
Measurement	*Make comparisons between objects relating to size, length, weight and capacity. *Compare length, weight and capacity.			3M1b Compare mass (kg/g)			
				3M1c Compare volume / capacity (l/ml)			
		1M2 Measure and begin to record the following: • lengths and heights • mass/weight • capacity and volume • time (hours, minutes, seconds	2M2 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	3M2a Measure lengths (m/cm/mm)	4M2 Estimate different measures, including money in pounds and pence		
				3M2b Measure mass (kg/g)			
				3M2c Measure volume / capacity (l/ml)			
		1M3 Recognise and know the value of different denominations of coins and notes	2M3a Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value				
			2M3b Find different combinations of coins that equal the same amounts of money				
		1M4a Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times	2M4a 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	3M4a Tell and write the time from an analogue clock; 12-hour clocks	4M4a Read, write and convert time between analogue and digital 12-hour clocks		
		1M4b Sequence events in chronological order using language [eg: before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]	2M4b Compare and sequence intervals of time	3M4b Tell and write the time from an analogue clock; 24-hour clocks	4M4b Read, write and convert time between analogue and digital 24-hour clocks		
		1M4c Recognise and use language relating to dates, including days of the week, weeks, months and years	2M4c Know the number of minutes in an hour and the number of hours in a day	3M4c Tell and write the time from an analogue clock, including using Roman numerals from I to XII	4M4c Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days	5M4c Solve problems involving converting between units of time	

Category	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
				3M4d 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			
				3M4e Know the number of seconds in a minute and the number of days in each month, year and leap year			
				3M4f Compare durations of events, [eg: to calculate the time taken by particular events or tasks]			
					4M5 Convert between different units of measurement [eg: kilometre to metre; hour to minute]	5M5 Convert between different units of metric measure [eg: kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre]	6M5 Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation of up to three decimal places
						5M6 Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints	6M6 Convert between miles and kilometres
				3M7 Measure the perimeter of simple 2–D shapes	4M7a Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres	5M7a Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres	6M7a Recognise that shapes with the same areas can have different perimeters and vice versa
					4M7b Find the area of rectilinear shapes by counting squares	5M7b 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	6M7b Calculate the area of parallelograms and triangles
							6M7c Recognise when it is possible to use the formulae for the area of shapes
						5M8 Estimate volume [eg: using 1cm³ blocks to build cuboids (including cubes)] and capacity [eg: using water]	6M8a Calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm³) and cubic metres (m³), and extending to other units [eg: mm³ and km³]
							6M8b Recognise when it is possible to use the formulae for the volume of shapes
			2M9 Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change	3M9a Add and subtract amounts of money to give change, using both £ and p in practical contexts	4M9 Calculate different measures, including money in pounds and pence	5M9a Use all four operations to solve problems involving measure [money] using decimal notation, including scaling	6M9 Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate
				3M9b Add and subtract lengths (m/cm/mm)		5M9b Use all four operations to solve problems involving measure [eg: length] using decimal notation, including scaling	
				3M9c Add and subtract mass (kg/g)		5M9c Use all four operations to solve problems involving measure [eg: mass] using decimal notation, including scaling	
				3M9d Add and subtract volume / capacity (l/ml)		5M9d Use all four operations to solve problems involving measure [eg: volume] using decimal notation, including scaling	
Vocabulary	measure size compare guess, estimate enough, not enough too much, too little too many, too few nearly, close to, about the same as just over, just under metre length, height, width, depth long, short, tall high, low wide, narrow thick, thin longer, shorter, taller … and so on longest, shortest, tallest, highest … and so on far, near, close weigh, weighs, balances heavy, light heavier than, lighter than heaviest, lightest scales	measurement, roughly, centimetre, ruler, metre stick, kilogram, litre, capacity, volume, more than, less than, quarter full, months, seasons, weekend, earlier, later, change dear, costs more cheap, costs less, cheaper costs the same as how much …? how many …? total	measuring scale, further, furthest, tape measure, gram, millilitre, temperature, degree, contains, fortnight, minutes past, seconds, digital, analogue,	division, approximately, millimetre, kilometre, mile, distance apart, perimeter, centigrade, century, calendar, earliest, latest, am, pm, 12-hour/24hour	unit, standard unit, metric unit, breadth, mass, weights, measuring cylinder, leap year, millennium, noon, timetable, arrive, depart	imperial unit, square metre, square millimetre, pint, gallon, currency,	yard, foot, feet, inch, inches, circumference, tonne, pound, ounce, GMT, BST, profit, loss,
Geometry 1-Shape	*Build with a range of resources. *Compare sizes, weights etc using gesture and language'bigger/little/smaller', 'high/low', 'tall', 'heavy'. *Notice patterns and arrange things in patterns. *Climb and squeeze themselves into different types of spaces.	1G1a Recognise and name common 2-D shapes [eg: rectangles (including squares), circles and triangles	2G1a Compare and sort common 2-D shapes and everyday objects				

	*Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners'; 'straight', 'flat', 'round'. *Select shapes appropriately: flat surfaces for building, a triangular prism for a roof, etc. *Combine shapes to make new ones-an arch, a bigger triangle etc. *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 a pattern-stick, leaf, stick, leaf. *Notice and correct an error in a repeating pattern. *Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then…'	**1G1b** Recognise and name common 3-D shapes [eg: cuboids (including cubes), pyramids and spheres]	**2G1b** Compare and sort common 3-D shapes and everyday objects				
	*Select, rotate and manipulate shapes to develop spatial reasoning skills. *Compose and decompose shapes so that children recognise a shape can have other shapes within it. *Continue, copy and create repeating patterns.		**2G2a** Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line	**3G2** Identify horizontal, vertical lines and pairs of perpendicular and parallel lines	**4G2a** Compare and classify geometric shapes, including quadrilaterals and triangles based on their properties and sizes	**5G2a** Use the properties of rectangles to deduce related facts and find missing lengths and angles	**6G2a** Compare and classify geometric shapes based on their properties and sizes
	*Understand position through words alone-for example, "The bag is under the table,"-with no pointing. *Describe a familiar route. *Discuss routes and locations, using words like 'in front of' and 'behind.'		**2G2b** Identify and describe the properties of 3-D shapes including the number of edges, vertices and faces		**4G2b** Identify lines of symmetry in 2-D shapes presented in different orientations	**5G2b** Distinguish between regular and irregular polygons based on reasoning about equal sides and angles	**6G2b** Describe simple 3-D shapes
					4G2c Complete a simple symmetric figure with respect to a specific line of symmetry		
			2G3 Identify 2-D shapes on the surface of 3-D shapes,	**3G3a** Draw 2-D shapes			**6G3a** Draw 2-D shapes using given dimensions and angles
				3G3b Make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them		**5G3b** Identify 3-D shapes including cubes and other cuboids, from 2-D representations	**6G3b** Recognise and build simple 3D shapes, including making nets
				3G4a Recognise that angles are a property of shape or a description of a tur	**4G4** Identify acute and obtuse angles and compare and order angles up to two right angles by size	**5G4a** Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles	**6G4a** Find unknown angles in any triangles, quadrilaterals and regular polygons
				3G4b 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		**5G4b** Identify: • angles at a point and one whole turn (total 360º) • angles at a point on a straight line and a ½ turn (total 180º) • other multiples of 90º	**6G4b** Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles
						5G4c Draw given angles and measure them in degrees	**6G5** Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius
Vocabulary	**shape, pattern flat curved, straight round hollow, solid sort make, build, draw size**	**symmetry, cuboid, cylinder,**	**surface, line symmetry, circular, triangular, pentagon, hexagon, octagon**	**perimeter, pentagonal, hexagonal, octoagonal, quafrilateral, right-angled, parallel, perpendicular, hemisphere, prism**	**line, construct, sketch, centre, angle, square based, reflect, regular irregular, 2D, blong, equuilater, isosceles, scalene, heptagon, parallelogram, polygon, 3D, spherical, polyhedron**	**radius, diameter, congruent, axis of symmetry, quadrant, octagedron,**	**circumference, concentric, arc, net, open, closed, intersecting, intersection, plane, kite,**
Geometry 2 – Position & Direction			**2P1** Order and arrange combinations of mathematical objects in patterns and sequences				
		1P2 Describe position, directions and movement, including half, quarter and three-quarter turns	**2P2** 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 (clock-wise and anti-clockwise)		**4P2** Describe movements between positions as translations of a given unit to the left/right and up/down	**5P2** Identify, describe and represent the position of a shape following a refection or translation, using the appropriate language, and know that the shape has not changed	**6P2** Draw and translate simple shapes on the co-ordinate plane, and reflect them in the axes
					4P3a Describe positions on a 2-D grid as co-ordinates in the first quadrant		**6P3** Describe positions on the full co-ordinate grid (all four quadrants)

					4P3b Plot specified points and draw sides to complete a given polygon		
Vocabulary	position over, under above, below top, bottom, side on, in outside, inside around in front, behind front, back beside, next to opposite apart between middle, edge corner direction left, right up, down forwards, backwards, sideways	underneath, centre, journey, quarter turn, three-quarter turn,	route, higher, lower, clockwise, anticolockwise, right angle, straight line,	compass point, northm south, east, west, vertical, horizontal, diagonal, angle, acute, obtuse,	north-east, north-west, south-east, south-west, translate, translation, rotate, degree, reflection, ruler, compass,	coordinate, protractor,	reflex angle,
Statistics			2S1 Interpret and construct simple pictograms, tally charts, block diagrams and simple tables	3S1 Interpret and present data using bar charts, pictograms and tables	4S1 Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs	5S1 Complete, read and interpret information in tables, including timetables	6S1 Interpret and construct pie charts and line graphs and use these to solve problems
			2S2a Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity	3S2 Solve one-step and two- step questions [eg: 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts, pictograms and tables	4S2 Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs	5S2 Solve comparison, sum and difference problems using information presented in a line graph	
			2S2b Ask and answer questions about totalling and comparing categorical data				6S3 Calculate and interpret the mean as an average
Vocabulary	count, sort group, set list	vote, table	tally, graph, block graph, pictogram, represent, label, title, most popular, most common, least.	chart, bar chart, frequency, carroll diagram, venn diaram, axis, axes, diagram	survey, questionnaire, data,	database, bar line chart, line grapgh, maximum, minimum, outcome	pie chart, mean, statistics, distribution
Diversity	Focus on diversity through leading mathematicians, such as: Euphemia L Haynes, Alan Turing, Nancy Grace Roman, Benjamin Manneker, John Nash Jr, Mary Cartwright, Johanna Lucht, Al-Khwarizmi, Katherine Johnson, Shakuntala Devi						
Christian Values links	Friendship, thankfulness, trust, peace, compassion, forgiveness, courage, hope, generosity, wisdom, koinonia						
Cultural Capital Links Possibilities	Opportunities in the local area, museum trips, Maths Days, local/national competitions, discussion of mathematicians, numbers in the real world, opportunities to participate in real-life number situations (money in shops etc)						