Kingsholm C of E Primary School and Nursery – Mathematics Progression Ladder

	Nursery	Reception	End Goals	Year 1	End Goals	Year 2	End Goals	Year 3	End Goals	Year 4	End Goals	Year 5	End Goals	Year 6	End Goals
PLACE VALUE Counting	Says some counting words May engage in counting-like behaviour, making sounds and pointing or saying some numbers in sequence Uses number words, like one or two and sometimes responds accurately when asked to give one or two things Begins to say numbers in order, some of which are in the right order Beginning to count on their fingers.	May enjoy counting verbally as far as they can go Points or touches (tags) each item, saying one number for each item, using the stable order of 1,2,3,4,5 Uses some number names and number language within play, and may show fascination with large numbers Subitises one, two and three objects (without counting) Counts up to five items, recognising that the last number said represents the total counted so far (cardinal principle) Uses number names and symbols when comparing numbers, showing interest in large numbers Estimates of numbers of things, showing understanding of relative size Counts out up to 10 objects from a larger group	**Read and write numbers to 10 in numerals** **Have a deep understanding of number to 10, including the composition of each number;- Subitise (recognise quantities without counting) up to 5** **Verbally count beyond 20, recognising the pattern of the counting system**	count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number Count numbers to 100 in numerals; count in multiples of twos, fives and tens	Count within 100, forwards and backwards, starting with any number. Reason about the location of numbers to 20 within the linear number system, including comparing using < > and =	count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward		count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number		Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10; apply this to identify and work out how many 10s there are in other three digit multiples of 10	count in multiples of 6, 7, 9, 25 and 1000 count backwards through zero to include negative numbers		count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 count forwards and backwards with positive and negative whole numbers, including through zero			
PLACE VALUE Representation	Beginning to notice numerals (number symbols)	Begin to recognise numerals 0 to 10		identify and represent numbers using objects and pictorial representations read and write numbers to 100 in		read and write numbers to at least 100 in numerals and in words identify, represent and estimate		identify, represent and estimate numbers using different representations read and write		identify, represent and estimate numbers using different representations read Roman		read, write, (order and compare) numbers to at least 1 000 000 and determine the value of each digit read Roman		read, write, (order and compare) numbers up to 10 000 000 and determine the value of each digit	

Kingsholm C of E Primary School and Nursery – Mathematics Progression Ladder

		Links numerals with amounts up to 5 and maybe 5 beyond Explores using a range of their own marks and signs to which they ascribe mathematical meanings		numerals read and write numbers from 1 to 20 in numerals and words.		numbers using different representations, including the number line		numbers up to 1000 in numerals and in words		numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value		numerals to 1000 (M) and recognise years written in Roman numerals.			
PLACE VALUE **Use PLACE VALUE and compare**	Beginning to compare and recognise changes in numbers of things, using words like more, lots or 'same'	Compares two small groups of up to five objects, saying when there are the same number of objects in each group, e.g. You've got two, I've got two. Same! Enjoys reciting numbers from 0 to 10 (and beyond) and back from 10 to 0 Increasingly confident at putting numerals in order 0 to 10 (ordinality) Matches the numeral with a group of items to show how many there are (up to 10)	**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 within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally**	given a number, identify one more and one less		recognise the place value of each digit in a two - digit number (tens, ones) compare and order numbers from 0 up to 100; use <, > and = signs		recognise the place value of each digit in a three - digit number (hundreds, tens, ones) compare and order numbers up to 1000		find 1000 more or less than a given number recognise the place value of each digit in a four - digit number (thousands, hundreds, tens, and ones) order and compare numbers beyond 1000		(read, write) order and compare numbers to at least 1 000 000 and determine the value of each digit		(read, write), order and compare numbers up to 10 000 000 and determine the value of each digit	

Kingsholm C of E Primary School and Nursery – Mathematics Progression Ladder

PLACE VALUE Problems and rounding					use place value and number facts to solve problems.		solve number problems and practical problems involving these ideas		round any number to the nearest 10, 100 or 1000 solve number and practical problems that involve all of the above and with increasingly large positive numbers		interpret negative numbers in context round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 solve number problems and practical problems that involve all of the above		round any whole number to a required degree of accuracy use negative numbers in context, and calculate intervals across zero solve number and practical problems that involve all of the above	

	Nursery	Reception	End Goals	Year 1	End Goals	Year 2	End Goals	Year 3	End Goals	Year 4	End Goals	Year 5	End Goals	Year 6	End Goals
NUMBER: Addition and subtraction Recall, Represent, Use	Responds to words like lots or more In everyday situations, takes or gives two or three objects from a group	Through play and exploration, beginning to learn that numbers are made up (composed) of smaller numbers Beginning to recognise that each counting number is one more than the one before Separates a group of three or four objects in different ways, beginning to recognise that the total is still the same Shows awareness that numbers are made up (composed) of smaller numbers, exploring partitioning in different ways with a wide range of objects Begins to conceptually subitise larger numbers by subitising smaller groups within the number, e.g. sees six raisins on a plate as three and three In practical activities, adds one and subtracts one with numbers to 10	**Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts**	read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs • represent and use number bonds and related subtraction facts within 20		• recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 • show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot • recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems		• estimate the answer to a calculation and use inverse operations to check answers		estimate and use inverse operations to check answers to a calculation		use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy			

Kingsholm C of E Primary School and Nursery – Mathematics Progression Ladder

NUMBER: Addition and subtraction **Calculations**				add and subtract one-digit and two-digit numbers to 20, including zero		• add and subtract numbers using concrete objects, pictorial representations, and mentally, including: □□ a two-digit number and ones □□ a two-digit number and tens □□two two-digit numbers □□ adding three one-digit numbers		• add and subtract numbers mentally, including: □□ a three-digit number and ones □□ a three-digit number and tens □□ a three-digit number and hundreds • add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction		• add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate		• add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) • add and subtract numbers mentally with increasingly large numbers		perform mental calculations, including with mixed operations and large numbers • use their knowledge of the order of operations to carry out calculations involving the four operations	
NUMBER: Addition and subtraction **Solve problems**		Beginning to use understanding of number to solve practical problems in play and meaningful activities Begins to explore and work out mathematical problems, using signs and strategies of their own choice, including (when appropriate) standard numerals, tallies and "+" or "-"		solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ subtracts 9		solve problems with addition and subtraction: □□using concrete objects and pictorial representations, including those involving numbers, quantities and measures □□applying their increasing knowledge of mental and written methods		solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction		solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why		• solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why • solve problems involving addition, subtraction, multiplication and division and a combination of thes including understanding the meaning of the equals sign		solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	

Kingsholm C of E Primary School and Nursery – Mathematics Progression Ladder

	Nursery	Reception	End Goals	Year 1	End Goals	Year 2	End Goals	Year 3	End Goals	Year 4	End Goals	Year 5	End Goals	Year 6	End Goals
Multiplication & Division: Recall, Represent and Use						• recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers • show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot	Recall multiplication facts, and corresponding division facts, in the 10, 5, 2 multiplication tables, and recognise products in these multiplication tables as multiples of the corresponding number	• recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables	Recall multiplication facts, and corresponding division facts, in the 10, 5, 2, 4 and 8 multiplication tables, and recognise products in these multiplication tables as multiples of the corresponding number.	recall multiplication and division facts for multiplication tables up to 12 × 12 • use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers • recognise and use factor pairs and commutativity in mental calculations	Recall multiplication and division facts up to 12x12, and recognise products in multiplication tables as multiples of the corresponding number.	identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers • know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers • establish whether a number up to 100 is prime and recall prime numbers up to 19 • recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3})	Must be ongoing throughout the year to recall multiplication and division facts up to 12x12, and recognise products in multiplication tables as multiples of the corresponding number. Focus on this for children with low time stable test scores	• identify common factors, common multiples and prime numbers • use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.	Must be ongoing throughout the year to recall multiplication and division facts up to 12x12, and recognise products in multiplication tables as multiples of the corresponding number. Focus on this for children with low time stable test scores

Kingsholm C of E Primary School and Nursery – Mathematics Progression Ladder

Multiplication & Division: Calculations						• calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equal signs		• write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods Divide numbers going beyond 12 times the number using the tables that they know		• multiply two-digit and three-digit numbers by a one-digit numbe using formal written Layout Use known multiplication facts to calculate division with remainders		• multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication fo two-digit numbers • multiply and divide numbers mentally drawing upon known facts • divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context • multiply and divide whole numbers and those involving decimals by 10, 100 and 1000		• multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication • divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context • divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context • perform mental calculations, including with mixed operations and large numbers	
Multiplication & Division: Solve Problems				• 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		• solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts		• 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		• 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		• solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes • solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates		• solve problems involving addition, subtraction, multiplication and division	

Kingsholm C of E Primary School and Nursery – Mathematics Progression Ladder

Multiplication & Division: Combined Operations												• solve problems involving addition, subtraction, multiplication and division and a combination of these including understanding the meaning of the equals sign		• use their knowledge of the order of operations to carry out calculations involving the four operations	
Multiplication & Division: Recall, Represent and Use						• recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers • show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot		• recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables		recall multiplication and division facts for multiplication tables up to 12 × 12 • use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers • recognise and use factor pairs and commutativity in mental calculations		identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers • know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers • establish whether a number up to 100 is prime and recall prime numbers up to 19 • recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3})		• identify common factors, common multiples and prime numbers • use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.	

	Nursery	Reception	End Goals	Year 1	End Goals	Year 2	End Goals	Year 3	End Goals	Year 4	End Goals	Year 5	End Goals	Year 6	End Goals
Fractions: Recognise and write				•recognise, find and name a half as one of two equal parts of an object, shape or quantity •recognise, find and name a quarter as one of four equal parts of an object, shape or quantity		•recognise, find, name and write fractions $\frac{1}{3}$ $\frac{1}{4}$ $\frac{2}{4}$ $\frac{3}{4}$ and 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		•count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.		•identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths •recognise mixed numbers and improper fractions			

Kingsholm C of E Primary School and Nursery – Mathematics Progression Ladder

								•recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators •recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators				and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, $\frac{2}{5}+\frac{4}{5}=\frac{6}{5}=1\frac{1}{5}$			
Fractions: Compare						• Recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$		• recognise and show, using diagrams, equivalent fractions with small denominators •compare and order unit fractions, and fractions with the same denominators		•recognise and show, using diagrams, families of common equivalent fractions		•compare and order fractions whose denominators are all multiples of the same number		•use common factors to simplify fractions; use common multiples to express fractions in the same denomination •compare and order fractions, including fractions > 1	
Fractions : Calculations						•write simple fractions for example, $\frac{1}{2}$ of 6 = 3		•add and subtract fractions with the same denominator within one whole for example, $\frac{5}{7}+\frac{1}{7}=\frac{6}{7}$		•add and subtract fractions with the same denominator		•add and subtract fractions with the same denominator and denominators that are multiples of the same number •multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams		• add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions • multiply simple pairs of proper fractions, writing the answer in its simplest form [for example $\frac{1}{4}\times\frac{1}{2}=\frac{1}{8}$ •divide	

Kingsholm C of E Primary School and Nursery – Mathematics Progression Ladder

														proper fractions by whole numbers [for example, $\frac{1}{3} \div 2 = \frac{1}{6}$	
Fractions: Solve Problems								•solve problems that involve all of the above		•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					

	Nursery	Reception	End Goals	Year 1	End Goals	Year 2	End Goals	Year 3	End Goals	Year 4	End Goals	Year 5	End Goals	Year 6	End Goals
Decimals: Recognise and write										•recognise and write decimal equivalents of any number of tenths or hundredths •recognise and write decimal equivalents $\frac{1}{2}$ $\frac{1}{4}$ $\frac{3}{4}$		•read and write decimal numbers as fractions [for example, 0.71= $\frac{71}{100}$ • recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents		• identify the value of each digit in numbers given to three decimal places	
Decimals: Compare										•round decimals with one decimal place to the nearest whole number •compare numbers with the same number of decimal places up to two decimal places		•round decimals with two decimal places to the nearest whole number and to one decimal place •read, write, order and compare numbers with up to three decimal places			

Kingsholm C of E Primary School and Nursery – Mathematics Progression Ladder

Decimals: Calculations & Problems										•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		•solve problems involving number Up to three decimal places		•multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places •multiply one-digit numbers with up to two decimal places by whole numbers •use written division methods in cases where the answer has Up to two decimal places •solve problems which require answers to be rounded to specified degrees of accuracy	
Fractions, decimals and percentages										•solve simple measure and money problems involving fractions and decimals to two decimal places		•recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal •solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$ $\frac{1}{4}$ $\frac{1}{5}$ $\frac{2}{5}$ $\frac{4}{5}$ and those fractions with		• associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{3}{8}$] • recall and use equivalences between simple fractions, decimals and percentages, including in different contexts	

Kingsholm C of E Primary School and Nursery – Mathematics Progression Ladder

												denominator of a multiple of 10 or 25			

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RATIO AND PROPORTION														solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison solve problems involving similar shapes where the scale factor is known or can be found solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.	

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ALGEBRA				solve one -step problems that involve addition and subtraction, using concrete objects and pictorial representations, and		recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve		solve problems, including missing number problems						use simple formulae generate and describe linear number sequences express missing number problems algebraically	

Kingsholm C of E Primary School and Nursery – Mathematics Progression Ladder

				missing number problems such as 7 = -9		missing number problems								find pairs of numbers that satisfy an equation with two unknowns enumerate possibilities of combinations of two variables.	

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Measurement: Length and height	Shows an interest in size and weight Explores differences in size, length, weight and capacity	In meaningful contexts, finds the longer or shorter, heavier or lighter and more/less full of two items Enjoys tackling problems involving prediction and discussion of comparisons of length, weight or capacity, paying attention to fairness and accuracy Becomes familiar with measuring tools in everyday experiences and play		compare, describe and solve practical problems for: •lengths and heights [for example, long/short, longer/shorter, tall/short, double/half] •mass/weight [for example, heavy/light, heavier than, lighter thank •capacity and volume [for example, full/empty, more than, less than, half, half full, quarter] •time [for example, quicker, slower, earlier, later] measure and begin to record the following: •lengths and heights •mass/weight •capacity and valume •time (hours, minutes, seconds)		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 >, and =		measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)		Convert between different units of measure [for example, kilometre to metre; hour to minute] estimate, compare and calculate different measures		convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling		solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate 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 to up to three decimal places convert between miles and kilometres	

Kingsholm C of E Primary School and Nursery – Mathematics Progression Ladder

Measurement: Money				recognise and know the value of different denominations of coins and notes		recognise and use symbols for pounds (E) and pence (p); combine amounts to make a particular value find different combinations (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		add and subtract amounts of money to give change, using both £ and p in practical contexts		estimate, compare and calculate different measures, including money in pounds and pence		use all four operations to solve problems involving measure [for example, money]			
Measurement: Time	Beginning to understand some talk about immediate past and future Beginning to anticipate times of the day such as mealtimes or home time	Is increasingly able to order and sequence events using everyday language related to time Beginning to experience measuring time with timers and calendars		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		compare and sequence intervals of time tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times know the number of minutes in an hour and the number of hours in a day		tell and write the time from an analogue clock, including using Roman numerals from to XII, and 12hour 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 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		read, write and convert time between analogue and digital 12 -and 24-hour clocks solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days		solve problems involving converting between units of time		use, read, write and convert between standard units, converting measurements of time from a smaller unit of measure to a larger unit, and vice versa	

Kingsholm C of E Primary School and Nursery – Mathematics Progression Ladder

								calculate the time taken by particular events or tasks							
Measurement: Capacity and Volume	Enjoys filling and emptying containers Investigates fitting themselves inside and moving through spaces Explores capacity by selecting, filling and emptying containers, e.g. fitting toys in a pram Explores differences in size, length, weight and capacity							measure the perimeter of simple 2-D shapes		measure and calculate the perimeter of rectilinear figure (including squares) in centimetres and metres find the area of rectilinear shapes by counting squares		measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm?) and square metres (m2) and estimate the area of irregular shapes estimate volume [for example, using 1 cm3 blocks to build cuboid (including cubes)] and capacity [for example, using water]		recognise that shapes with the same areas can have different perimeters and vice versa recognise when it is possible to use formulae for area and volume of shapes calculate the area of parallelograms and triangles calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m*), and extending to other units [for example, mm3 and km3]	

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Geometry: 2D Shapes	Recognises that two objects have the same shape	Responds to both informal language and common shape names Shows awareness of shape similarities and differences between objects		•recognise and name common 2-D shapes [for example, rectangles (including squares), circles and triangles]		•identify and describe the properties of 2-D shapes, including the number sides and line symmetry in a vertical line •identify 2-D shapes on the surface of 3-D shapes, [for example,		•draw 2-D shapes		•compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes •identify lines of symmetry in 2-D shapes presented in different orientations		•distinguish between regular and irregular polygons based on reasoning about equal sides and angles. •use the properties of rectangles to deduce related facts and find		•draw 2-D shapes using given dimensions and angles •compare and classify geometric shapes based on their properties and sizes •illustrate and name parts of circles, including radius, diameter and	

Kingsholm C of E Primary School and Nursery – Mathematics Progression Ladder

		Enjoys partitioning and combining shapes to make new shapes with 2D and 3D shapes Uses informal language and analogies, (e.g. heart-shaped and hand-shaped leaves), as well as mathematical terms to describe shapes Enjoys composing and decomposing shapes, learning which shapes combine to make other shapes				a circle on a cylinder and a triangle on a pyramid] •compare and sort common 2-D shapes and everyday objects						missing lengths and angles		circumference and know that the diameter is twice the radius	
Geometry: 3D Shapes	Pushes objects through different shaped holes, and attempts to fit shapes into spaces on inset boards or puzzles	Attempts to create arches and enclosures when building, using trial and improvement to select blocks Uses own ideas to		•recognise and name common 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]		•recognise and name common 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]. •compare and sort common 3-D shapes and everyday objects		•make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them				•identify 3-D shapes, including cubes and other cuboids, from 2-D representations		•recognise, describe and build simple 3-D shapes, including making nets	

Kingsholm C of E Primary School and Nursery – Mathematics Progression Ladder

	Beginning to select a shape for a specific space Enjoys using blocks to create their own simple structures and arrangements Makes simple constructions	make models of increasing complexity, selecting blocks needed, solving problems and visualising what they will build													
Geometry: Angles and Lines								•recognise angles as a property of shape or a description a 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 •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 •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		•know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles •draw given angles, and measure them in degrees identify: •angles at a point and one whole turn (total 360°) •angles at a point on a straight line and turn (total 180°) •other multiples of 90°		•find unknown angles in any triangles, quadrilaterals, and regular polygons •recognise angles where they meet at a point, are on straight line, or are vertically opposite, and find missing angles	
Geometry: Position and direction	Responds to some spatial and positional language	Responds to and uses language of position and direction		• describe position, direction and movement, including whole, half, quarter and three-quarter turns		• order and arrange combinations of mathematical objects in patterns and sequences				•describe positions on a 2-D grid as coordinates in the first quadrant •describe movements		•identify, describe and represent the position of a shape following a reflection or translation, using the		•describe positions on the full coordinate grid (all four quadrants) •draw and translate	

Kingsholm C of E Primary School and Nursery – Mathematics Progression Ladder

		Predicts, moves and rotates objects to fit the space or create the shape they would like Uses spatial language, including following and Positive Relationships: what adults might do				•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)				between positions as translations of given unit to the left/right and up/down •plot specified points and draw sides to complete a given polygon		appropriate language, and know that the shape has not changed		simple shapes on the coordinate plane, and reflect them in the axes	

	Nursery	Reception	End Goals	Year 1	End Goals	Year 2	End Goals	Year 3	End Goals	Year 4	End Goals	Year 5	End Goals	Year 6	End Goals
Statistics: Present and interpret						•interpret and construct simple pictograms, tally charts, block diagrams and simple tables		•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 time graphs		•complete, read and interpret information in tables, including timetables		•interpret and construct pie charts and line graphs and use these to solve problems	
Statistics: Solve Problems						•ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity •ask and answer questions about totalling and comparing categorical data		•solve one- step and two-step questions [for example, 'How many more?' and How many fewer?'] using information presented in scaled bar charts and pictograms and tables		•solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs		•solve comparison, sum and difference problems using information presented in a line graph		•calculate and interpret the mean as an average	