Southbury Primary School and Nursery Progression Map:

Maths

Number and Place Value

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Counting	count from 0-10 Beginning to represent numbers using fingers, marks on paper or pictures. Realises not only objects, but anything can be counted, including steps, claps or jumps.	count from 0-20 count an irregular arrangement of up to 10 objects (ELG) Children count reliably with numbers from one to 20 and place them in order	count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number count, read and write numbers to 100 in numerals count in multiples of twos, fives and tens given a number, identify one more and one less	count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward	count from 0 in multiples of 4, 8, 50 and 100 find 10 or 100 more or less than a given number	count backwards through zero to include negative numbers count in multiples of 6, 7, 9, 25 and 1000 find 1000 more or less than a given number	interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero count forwards or backwards in steps of powers of 10 for any given number up to 1000 000	use negative numbers in context, and calculate intervals across zero
Comparing Numbers	Compares two groups of objects, saying when they have the same number.	compare quantities of identical objects compare quantities of non-identical objects compare groups up to 10 Uses the language of 'more' and 'fewer' to compare two sets of objects	use the language of: equal to, more than, less than (fewer), most, least	compare and order numbers from 0 up to 100; use <, > and = signs	compare and order numbers up to 1000	order and compare numbers beyond 1 000 compare numbers with the same number of decimal places up to two decimal places	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
Identifying, representing and estimating numbers	Sometimes matches numeral and quantity correctly. Recognise some numerals of personal significance. Recognises numerals 1 to 5.	select the correct numeral to represent 1-5, then 1-10 objects Estimates how many objects they can see and checks by counting them (ELG+) Children estimate a number of objects and check quantities by counting up to 20.	identify and represent numbers using objects and pictorial representations including the number line	identify, represent and estimate numbers using different representations, including the number line	identify, represent and estimate numbers using different representations	identify, represent and estimate numbers using different representations		

Reading and writing numbers	show an interest in writing numbers Beginning to represent numbers using fingers, marks on paper or pictures.	write the correct numeral for a given number	read and write numbers from 1 to 20 in numerals and words.	read and write numbers to at least 100 in numerals and in words	read and write numbers up to 1000 in numerals and in words tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks	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.	read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit read Roman numerals to 1000 (M) and recognise years written in Roman numerals.	read, write, order and compare numbers up to 10 000 000 and determine the value of each digit
Understanding place value		Says the number that is one more than a given number. Finds one more or one less from a group of up to five objects, then ten objects. (ELG) Children count reliably with numbers from one to 20, place them in order and say which number is one more or one less than a given number.		recognise the place value of each digit in a two-digit number (tens, ones)	recognise the place value of each digit in a three-digit number (hundreds, tens, ones)	recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) 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 units, tenths and hundredths	read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	read, write, order and compare numbers up to 10 000 000 and determine the value of each digit identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places
Rounding						round any number to the nearest 10, 100 or 1 000 round decimals with one decimal place to the nearest whole number	round any number up to 1 000 000 to the nearest 10, 100, 1 000, 10 000 and 100 000 round decimals with two decimal places to the nearest whole number and to one decimal place	round any whole number to a required degree of accuracy solve problems which require answers to be rounded to specified degrees of accuracy
Problem Solving	Shows an interest in number problems			use place value and number facts to solve problems	solve number problems and practical problems involving these ideas.	solve number and practical problems that involve all of the above and with increasingly large positive numbers	solve number problems and practical problems that involve all of the above	solve number and practical problems that involve all of the above

Addition and Subtraction

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Number bonds		Bonds to 5 Number bonds 10 (tens frame) Number bonds to 10	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				
Mental Calculations		Find one more and one less Combine two groups to find the whole Adding by counting on Subtract by counting back Finds one more or one less from a group of up to five objects, then ten objects. In practical activities and discussion, beginning to use the vocabulary involved in adding and subtracting. (ELG) Using quantities and objects, they add and subtract two single-digit numbers and count on or back to find the answer.	add and subtract one-digit and two-digit numbers to 20, including zero read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Written Methods)	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 show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot	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 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
Written methods		Records, using marks that they can interpret and explain.	read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Mental Calculation)		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)	

Inverse operations, estimating and checking answers				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	use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.
Problem Solving	Shows an interest in number problems.	Sorting into groups Begins to identify own mathematical problems based on own interests and fascinations	solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ - 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 simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change	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 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

Multiplication and Division

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Multiplication and division facts		Doubling Halving and sharing Odds and evens (ELG) They solve problems, including doubling, halving and sharing. (ELG+) They solve practical problems that involve combining groups of 2, 5 or 10, or sharing into equal groups.	count in multiples of twos, fives and tens	count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers	*count from 0 in multiples of 4, 8, 50 and 100* recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables	*count in multiples of 6, 7, 9, 25 and 1 000* recall multiplication and division facts for multiplication tables up to 12 × 12	count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000	
Mental calculations				show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot	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	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	multiply and divide numbers mentally drawing upon known facts multiply and divide whole numbers and those involving decimals by 10, 100 and 1000	perform mental calculations, including with mixed operations and large numbers associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $^{3}/_{8}$)
Written Calculation		Records, using marks that they can interpret and explain.		calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) 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	multiply two-digit and three-digit numbers by a one-digit number using formal written layout	multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers 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 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 short division where appropriate for the context 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 use written division methods in cases where the answer has up to two decimal places
Properties of numbers: multiples, factors, primes, square and cube 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 common factors to simplify fractions; use common multiples to express fractions in the same denomination calculate, estimate and compare volume of cubes and cuboids using standard units, including centimeter cubed (cm^3) and cubic meters (m^3), and extending to other units such as mm^3 and km^3
Order of operations								use their knowledge of the order of operations to carry out calculations involving the four operations

Inverse operations, estimating and checking answers					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 estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy
Problem Solving			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 addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates	solve problems involving addition, subtraction, multiplication and division solve problems involving similar shapes where the scale factor is known or can be found

Fractions, Decimals and Percentages

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Counting in fraction steps				Pupils should count in fractions up to 10, starting from any number and using the1/2 and 2/4 equivalence on the number line	count up and down in tenths	count up and down in hundredths		
Reasoning fractions		They solve problems, including doubling, halving and sharing.	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 $^1/_3$, $^1/_4$, $^2/_4$ and $^3/_4$ of a length, shape, set of objects or quantity	recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators recognise that tenths arise from dividing an object into 10 equal parts and in dividing one – digit numbers or quantities by 10. recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators	recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten	recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	
Comparing fractions	Talk about halves of everyday objects (fruit, shapes)				compare and order unit fractions, and fractions with the same denominators		compare and order fractions whose denominators are all multiples of the same number	compare and order fractions, including fractions >1
Comparing decimals						compare numbers with the same number of decimal places up to two decimal places	read, write, order and compare numbers with up to three decimal places	identify the value of each digit in numbers given to three decimal places
Rounding including decimals						round decimals with one decimal place to the nearest whole number	round decimals with two decimal places to the nearest whole number and to one decimal place	solve problems which require answers to be rounded to specified degrees of accuracy
Equivalence				write simple fractions e.g. $^1/_2$ of 6 = 3 and recognise the equivalence of $^2/_4$ and $^1/_2$.	recognise and show, using diagrams, equivalent fractions with small denominators	recognise and show, using diagrams, families of common equivalent fractions recognise and write	identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and	use common factors to simplify fractions; use common multiples to express fractions in the same denomination

						decimal equivalents of any number of tenths or hundredths recognise and write decimal equivalents to $^{1}/_{4}$; $^{1}/_{2}$; $^{3}/_{4}$	hundredths read and write decimal numbers as fractions (e.g. 0.71 = $^{71}/_{100}$) recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents 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 as a decimal fraction	associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $^{3}/_{8}$) recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.
Addition and subtraction of decimals					add and subtract fractions with the same denominator within one whole (e.g. $^{5}/_{7} + ^{1}/_{7} = ^{6}/_{7}$)	add and subtract fractions with the same denominator	add and subtract fractions with the same denominator and multiples of the same number recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number (e.g. $^{2}/_{5} + ^{4}/_{5} = ^{6}/_{5} = 1\,^{1}/_{5}$)	add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions
Multiplication and division of fractions							multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. $^{1}/_{4} \times ^{1}/_{2} = ^{1}/_{8}$) multiply one-digit numbers with up to two decimal places by whole numbers divide proper

								fractions by whole numbers (e.g. $^{1}/_{3} \div 2 = {}^{1}/_{6}$)
Multiplication and division of decimals						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		multiply one-digit numbers with up to two decimal places by whole numbers multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $^{3}/_{8}$) use written division methods in cases where the answer has up to two decimal placed
Problem Solving		They solve problems, including doubling, halving and sharing.			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 solve simple measure and money problems involving fractions and decimals to two decimal places.	solve problems involving numbers up to three decimal places solve problems which require knowing percentage and decimal equivalents of $^{1}/_{2}$, $^{1}/_{4}$, $^{1}/_{5}$, $^{2}/_{5}$, $^{4}/_{5}$ and those with a denominator of a multiple of 10 or 25.	

Ratio and Proportion

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
								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.

Measurement

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Comparing and estimating	Beginning to categorise objects according to properties such as shape or size. Begins to use the language of size. Using everyday language to talk about big, small, long, short, tall	Orders two or three items by length or height. Orders two items by weight or capacity. (ELG+) Children estimate, measure, weigh and compare and order objects	compare, describe and solve practical problems for: * lengths and heights [e.g. long/short, longer/shorter, tall/short, double/half] * mass/weight [e.g. heavy/light, heavier than, lighter than] * capacity and volume [e.g. full/empty, more than, less than, half, half full, quarter] * time [e.g. quicker, slower, earlier, later] * sequence events in chronological order using language [e.g. before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]		compare durations of events, for example to calculate the time taken by particular events or tasks estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight (appears also in Telling the Time)	estimate, compare and calculate different measures, including money in pounds and pence (also included in Measuring)	calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes (also included in measuring) estimate volume (e.g. using 1 cm^3 blocks to build cubes and cuboids) and capacity (e.g. using water)	calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm^3) and cubic metres (m^3), and extending to other units such as mm^3 and km^3.
Measuring and calculating		Recognise length, height and distance Understand the difference between weight and capacity	measure and begin to record the following: * **lengths and heights** * **mass/weight** * **capacity and volume** * **time** (hours, minutes, seconds**)** recognise and know the value of different denominations of **coins and notes**	choose and use appropriate standard units to estimate and measure **length/height** in any direction (m/cm); **mass** (kg/g); **temperature** (°C); **capacity** (liters/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels recognise and use symbols for pounds **(£) and pence (p)**; combine amounts to make a particular	measure, compare, add and subtract: **lengths** (m/cm/mm); **mass** (kg/g); **volume/capacity** (l/ml) measure the **perimeter** of simple 2-D shapes 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** measure and calculate the **perimeter** of a rectilinear figure find the area of rectilinear shapes by counting squares	measure, compare, add and subtract: **lengths** (m/cm/mm); **mass** (kg/g); **volume/capacity** (l/ml) measure the **perimeter** of simple 2-D shapes calculate and compare the area of squares and rectangles including using standard units, square centimeters (cm^2) and square	estimate, compare and calculate **different measures,** including **money in pounds and pence** measure and calculate the **perimeter** of a rectilinear figure calculate the area of parallelograms and triangles calculate, estimate and compare volume of cubes and cuboids using standard units,

				value find different combinations of coins that equal the same amounts of money **solve simple problems** in a practical context involving addition and subtraction of money of the same unit, including giving change			meters (m^2) and estimate the area of irregular shapes recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3})	including cubic centimeters (cm^3) and cubic meters (m^3), and extending to other units [e.g. mm^3 and km^3]. recognise when it is possible to use formulae for area and volume of shapes
Telling the time	Understands some talk about immediate past and future, e.g. 'before', 'later' or 'soon'. Anticipates specific time-based events such as mealtimes or home time	Daily routine Orders and sequences familiar events. Measures short periods of time in simple ways.	tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. recognise and use language relating to dates, including days of the week, weeks, months and years	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 I to XII, and 12-hour and 24-hour clocks estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight	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 (appears also in Converting)	solve problems involving converting between units of time	
Converting				know the number of minutes in an hour and the number of hours in a day. (appears also in Telling the Time)	know the number of seconds in a minute and the number of days in each month, year and leap year	convert between different units of measure (e.g. kilometer to meter; hour to minute) 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	convert between different units of metric measure (e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) solve problems involving converting between units of time understand and use equivalences	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 solve problems involving the calculation and conversion of units

						days	between metric units and common imperial units such as inches, pounds and pints	of measure, using decimal notation up to three decimal places where appropriate convert between miles and kilometers

Geometry: Properties of shape

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Identifying shapes and their properties	Uses shapes appropriately for tasks. Beginning to talk about the shapes of everyday objects, e.g. 'round' and 'tall' Beginning to use mathematical names for 'flat' 2D shapes	recognise 2-D and 3-D shapes; using mathematical terms selects a particular named shape (ELG) They explore characteristics of everyday objects and shapes and use mathematical language to describe them.	recognise and name common 2-D and 3-D shapes, including: * 2-D shapes [e.g. rectangles (including squares), circles and triangles] * 3-D shapes [e.g. 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 a pyramid]		identify lines of symmetry in 2-D shapes presented in different orientations	identify 3-D shapes, including cubes and other cuboids, from 2-D representations	recognise, describe and build simple 3-D shapes, including making nets illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius
Drawing and constructing	show an interest in shape by playing with shapes	Uses familiar objects and common shapes to create and recreate patterns and build models. Explore more complex patterns			draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them	complete a simple symmetric figure with respect to a specific line of symmetry	draw given angles, and measure them in degrees (^{o})	draw 2-D shapes using given dimensions and angles recognise, describe and build simple 3-D shapes, including making nets
Comparing and classifying	identify similarities of shapes in the environment	order two or three items by length and height order two items by weigh or capacity		compare and sort common 2-D and 3-D shapes and everyday objects		compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes	use the properties of rectangles to deduce related facts and find missing lengths and angles distinguish between regular and irregular polygons based on reasoning about equal sides and angles	compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons
Angles					recognise angles as a property of shape or a description of a turn identify right angles, recognise that two right angles make a half-turn, three make	identify acute and obtuse angles and compare and order angles up to two right angles by size	know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles identify: * angles at a point	recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles

					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		and one whole turn (total 360°) * angles at a point on a straight line and ½ a turn (total 180°) * other multiples of 90°	

Geometry: Position and direction

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Position, direction and movement	use positional language	describe the position of an object	describe position, direction and movement, including half, quarter and three-quarter turns.	use mathematical vocabulary to describe position, direction and movement including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)		describe positions on a 2-D grid as coordinates in the first quadrant describe movements between positions as translations of a given unit to the left/right and up/down plot specified points and draw sides to complete a given polygon	identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed	describe positions on the full coordinate grid (all four quadrants) draw and translate simple shapes on the coordinate plane, and reflect them in the axes.
Pattern	Notices simple shapes and patterns in pictures.	Use common shapes to create patterns and build models		order and arrange combinations of mathematical objects in patterns and sequences				

Statistics

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Interpreting, constructing and presenting data				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 ask and answer questions about totalling and comparing categorical data	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
Solving problems					solve one-step and two-step questions [e.g. '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

Algebra

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Equations			solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and **missing number problems** such as 7 = □ - 9 represent and use number bonds and related subtraction facts within 20	recognise and use the inverse relationship between addition and subtraction and use this to check calculations and **missing number** problems. recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100	solve problems, including **missing number** problems, using number facts, place value, and more complex addition and subtraction. solve problems, including **missing number** problems, involving multiplication and division, including integer scaling		use the properties of rectangles to deduce related facts and find **missing lengths and angles**	express missing number problems algebraically find pairs of numbers that satisfy number sentences involving two unknowns enumerate all possibilities of combinations of two variables
Foemulae						Perimeter can be expressed algebraically as 2(a + b) where a and b are the dimensions in the same unit.		use simple formulae recognise when it is possible to use **formulae** for area and volume of shapes
Sequences			sequence events in chronological order using language such as: before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening	compare and sequence intervals of time order and arrange combinations of mathematical objects in patterns				Perimeter can be expressed algebraically as 2(a + b) where a and b are the dimensions in the same unit.