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	EYFS	Year 1	Year 1/2	Year 2	Year 3	Year 4	Year 5	Year 6
Number and Place Value	Early Learning Goals Have a deep understanding of number to 10, including the composition of each number Subitise (recognise quantities without counting) up to 5 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. Verbally count beyond 20, recognising the pattern of the counting system Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less	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 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 read and write numbers from 1 to 20 in numerals and words.	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 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 read and write numbers from 1 to 20 in numerals and words. count in steps of 2, 3, and 5 from 0,	count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward recognise the place value of each digit in a two-digit number (tens, ones) identify, represent and estimate numbers using different representations, including the number line compare and order numbers from 0 up to 100; use <, > and = signs read and write numbers to at least 100 in numerals and in words use place value and number facts to solve problems.	count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number recognise the place value of each digit in a three-digit number (hundreds, tens, ones) compare and order numbers up to 1000 identify, represent and estimate numbers using different representations read and write numbers up to 1000 in numerals and in words solve number problems and practical problems involving these ideas.	count in multiples of 6, 7, 9, 25 and 1000 find 1000 more or less than a given number count backwards through zero to include negative numbers recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) order and compare numbers beyond 1000 identify, represent and estimate numbers using different representations round any number to the nearest 10, 100 or 1000 solve number and practical problems that involve all of the above and with	read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero 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	read, write, order and compare numbers up to 10 000 000 and determine the value of each digit 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.

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	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. Development Matters Count objects, actions and sounds. Subitise. Link the number symbol (numeral) with its cardinal number value. Count beyond ten. Compare numbers. Understand the 'one more than/one less than' relationship between		and in tens from any number, forward and backward recognise the place value of each digit in a two-digit number (tens, ones) identify, represent and estimate numbers using different representations, including the number line compare and order numbers from 0 up to 100; use <, > and = signs read and write numbers to at least 100 in numerals and in words use place value and number facts to solve problems.			increasingly large positive numbers 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 Roman numerals to 1000 (M) and recognise years written in Roman numerals.	

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	consecutive numbers. Explore the composition of numbers to 10. Classroom Activities Numicon Number fans Number lines Number tracks Blank numberlines /tracks Number squares Number challenges Dominoes Numeral representations in all areas of provision Cardinal numbers Vocabulary Number, count, how many? One more. One less, same, different							
Addition and Subtraction	Early Learning Goals Have a deep understanding of number to 10, including the composition of each number	read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs	read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs	solve problems with addition and subtraction:using concrete objects and pictorial representations, including those involving numbers,	add and subtract numbers mentally, including: -a three-digit number and ones - a three-digit number and tens	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)	solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

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	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. 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. Development Matters	represent and use number bonds and related subtraction facts within 20 add and subtract one-digit and two-digit numbers to 20, including zero solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = – 9.	represent and use number bonds and related subtraction facts within 20 add and subtract one-digit and two-digit numbers to 20, including zero solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = – 9. 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	quantities and measures applying their increasing knowledge of mental and written methods recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 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	- a three-digit number and hundreds add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction estimate the answer to a calculation and use inverse operations to check answers solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.	estimate and use inverse operations to check answers to a calculation solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.	add and subtract numbers mentally with increasingly large number use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy 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 use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.

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	Understand the 'one more than/one less than' relationship between consecutive numbers. Automatically recall number bonds for numbers 0–5 and some to 10. <u>Classroom Activities</u> Counting Bears, Beads Sorting hoops Numberlines Number tracks Natural materials, Maths Kitchen outside Pegs/ washing lines <u>Vocabulary</u> How many altogether? Add Take away Make Total Greater		recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 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 recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing	recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.				

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			number problems.					
Multiplication and Division	Early Learning Goals Have a deep understanding of number to 10, including the composition of each number 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. Explore and represent patterns within numbers up to 10, including	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 one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher. recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers calculate mathematical statements for multiplication and	recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs show that multiplication of two numbers can be done in any order	recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods solve problems, including missing number problems, involving	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 multiply two-digit and three-digit numbers by a one-digit 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 (nonprime) numbers establish whether a number up to 100 is prime and recall prime numbers up to 19 multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long	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,

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	evens and odds, double facts and how quantities can be distributed equally. Classroom Activities Minibeast patterns Fireflies in a jar Making equal pairs Vocabulary Share Double Half Equal Same		division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.	(commutative) and division of one number by another cannot solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.	multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.	using formal written layout 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.	multiplication for 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 recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) solve problems involving multiplication and division including using their knowledge of factors and	interpreting remainders according to the context perform mental calculations, including with mixed operations and large numbers • identify common factors, common multiples and prime numbers use their knowledge of the order of operations to carry out calculations involving the four operations

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							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.	

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Fractions, decimals and percentages	Early Learning Goals Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally. Classroom Activities Water play Sand play Vocabulary Parts of a whole Half Quarter	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 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. write simple fractions, for example 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2.	recognise, find, name and write fractions 1/3, 1/4, 2/4 and 3/4 of a length, shape, set of objects or quantity. write simple fractions, for example 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2.	count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10 recognise, find and write fractions of a discrete set of objects: unit fractions and nonunit fractions with small denominators recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators recognise and show, using diagrams, equivalent fractions with small denominators add and subtract fractions with the same denominator within one whole	recognise and show, using diagrams, families of common equivalent fractions count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. 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 add and subtract fractions with the same denominator recognise and write decimal equivalents of any number of tenths or hundredths	compare and order fractions whose denominators are all multiples of the same number identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number 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,	use common factors to simplify fractions; use common multiples to express fractions in the same denomination compare and order fractions, including fractions > 1 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, 1 quarter × 1 half = 1 eighth] divide proper fractions by whole numbers [for example, 1 third ÷ 2 = 1 sixth] associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3 eighths]

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					compare and order unit fractions, and fractions with the same denominators solve problems that involve all of the above.	recognise and write decimal equivalents to one quarter, one half and three quarters 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 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 solve simple measure and money problems involving fractions and decimals to two decimal places.	supported by materials and diagrams read and write decimal numbers as fractions [for example, 0.71 = 71 hundredths] recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents 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 solve problems involving number up to three decimal places recognise the per cent symbol (%) and understand that per cent relates to 'number of parts	• identify the value of each digit in numbers given to three decimal places and 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 recall and use equivalences

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							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 a half, a quarter, a fifth, 2 fifths, 4 fiths and those fractions with a denominator of a multiple of 10 or 25.	between simple fractions, decimals and percentages, including in different contexts.
Measurement	Early Learning Goals Have a deep understanding of number to 10, including the composition of each number Verbally count beyond 20, recognising the pattern of the counting system	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,	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,	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,	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	Convert between different units of measure [for example, kilometre to metre; hour to minute] measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres	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	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,

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	Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity; Development Matters Compare length, weight and capacity. Classroom Activities Measuring with non-standard measures – feet, hand Baking activities Scales Making playdough Vocabulary Guess Too many Too little Same Less than More than	heavier than, lighter than] -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 volume -time (hours, minutes, seconds) recognise and know the value of different denominations of coins and notes sequence events in chronological order using language [for example, before and after, next,	heavier than, lighter than] -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 volume -time (hours, minutes, seconds) recognise and know the value of different denominations of coins and notes sequence events in chronological order using language [for example, before and after, next,	thermometers and measuring vessels compare and order lengths, mass, volume/capacity and record the results using >, < and = recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular 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 compare and sequence intervals of time	both £ and p in practical contexts 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 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 calculate the time taken by	find the area of rectilinear shapes by counting squares estimate, compare and calculate different measures, including money in pounds and pence 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.	units and common imperial units such as inches, pounds and pints 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 (cm2) and square metres (m2) and estimate the area of irregular shapes estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)] and capacity [for example, using water] solve problems involving converting	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 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

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		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.	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. 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	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	particular events or tasks].		between units of time use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.	cubic metres (m3), and extending to other units [for example, mm3 and km3].

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			compare and order lengths, mass, volume/capacity and record the results using >, < and = recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular 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 compare and sequence intervals of time tell and write the time to five minutes, including quarter past/to the hour and					

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			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					
Geometry – properties of shape	Development Matters Select, rotate and manipulate shapes to develop spatial reasoning skills. Compose and decompose shapes so that children recognise a shape can have other shapes	recognise and name common 2-D and 3-D shapes, including: -2-D shapes [for example, rectangles (including squares), circles and triangles] -3-D shapes [for example, cuboids (including cubes), pyramids and spheres].	recognise and name common 2-D and 3-D shapes, including: -2-D shapes [for example, rectangles (including squares), circles and triangles] -3-D shapes [for example, cuboids (including cubes), pyramids and spheres].	identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line identify and describe the properties of 3-D shapes, including the number of	draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them recognise angles as a property of shape or a	compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes identify acute and obtuse angles and compare and order angles up to two right angles by size	identify 3-D shapes, including cubes and other cuboids, from 2-D representations know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles draw given angles, and	draw 2-D shapes using given dimensions and angles recognise, describe and build simple 3-D shapes, including making nets compare and classify geometric shapes based on their properties and sizes and find

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	within it, just as numbers can. Classroom Activities Shape hunts Feely bags Pin boards Construction challenges Vocabulary Shape curved Straight Point pattern		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] compare and sort common 2-D and 3-D shapes and everyday objects.	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] compare and sort common 2-D and 3-D shapes and everyday objects.	description 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 lines of symmetry in 2-D shapes presented in different orientations complete a simple symmetric figure with respect to a specific line of symmetry.	measure them in degrees (o) identify: angles at a point and one whole turn (total 360o) angles at a point on a straight line and 2 1 a turn (total 180o) other multiples of 90o 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.	unknown angles in any triangles, quadrilaterals, and regular polygons illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.
Geometry – position and direction	Development Matters Continue, copy and create repeating patterns Classroom Activities PE sessions	describe position, direction and movement, including whole, half, quarter and threequarter turns.	describe position, direction and movement, including whole, half, quarter and threequarter turns. order and arrange combinations of mathematical	order and arrange combinations of mathematical objects in patterns and sequences use mathematical vocabulary to describe position, direction and		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	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.

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	Topic hooks Physical development Communication and Language activities Daily routines – lining up throughout the day <u>Vocabulary</u> On Under Over Forwards Backwards Up Down		objects in patterns and sequences use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anticlockwise).	movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anticlockwise).		left/right and up/down plot specified points and draw sides to complete a given polygon.		
Statistics			interpret and construct simple pictograms, tally charts, block diagrams and simple tables ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity	interpret and construct simple pictograms, tally charts, block diagrams and simple tables ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity	interpret and present data using bar charts, pictograms and tables solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in	interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. solve comparison, sum and difference problems using	solve comparison, sum and difference problems using information presented in a line graph complete, read and interpret information in tables, including timetables.	interpret and construct pie charts and line graphs and use these to solve problems calculate and interpret the mean as an average.

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			ask and answer questions about totalling and comparing categorical data.	ask and answer questions about totalling and comparing categorical data.	scaled bar charts and pictograms and tables.	information presented in bar charts, pictograms, tables and other graphs.		
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

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								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.
Algebra								use simple formulae generate and describe linear number sequences express missing number problems algebraically find pairs of numbers that satisfy an equation with two unknowns enumerate possibilities of combinations of two variables.

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Vocabulary	Use and understanding of vocabulary is crucial to our maths curriculum and we strive to ensure children can use and explain a range of vocabulary. Maths vocabulary is detailed within Red Rose Maths. Staff are advised to begin each unit by gathering Vocabulary from the unit, discussing and putting onto the maths working wall. This can then be added to throughout the unit. Additionally, there is an EYFS vocabulary list below and a list of mathematical vocabulary to be learned by the end of Y6.
Why Red Rose Maths ?	**Red Rose Maths** The school has chosen the Red Rose Maths scheme due to its core mastery approaches than run through every lesson, its exploratory approach to learning, and the pedagogical and mathematical foundations that underpin its creation. The scheme aligns with the 2014 National Curriculum in England and provides detailed progression documents, diagnostic assessment materials, and resources for teaching and learning across all year groups from EYFS to Year 6. Red Rose Maths promotes a deep and broad understanding of mathematical concepts by fostering exploration, reasoning, and problem-solving skills. The scheme's emphasis on concrete, pictorial, and abstract representations supports the development of a secure foundation in mathematics for all students and is one that is consistent throughout every year group. The Scheme provides: **Progression Documents:** Details the progression of key mathematical concepts from EYFS to Year 6. **Assessment Materials:** Assessments to identify strengths and areas for development that align with the units covered at points throughout the year. **Teaching Resources:** Manipulatives, visual aids, and technology resources to support teaching. **Problem-Solving Focus:** Encourages students to solve problems independently and collaboratively. **Contextual Learning:** Provides real-world contexts for mathematical concepts, enhancing relevance and understanding.
How has the maths curriculum taken into account the needs of our children?	Our curriculum is accessible to all through the use of the core mastery concepts. Throughout year groups we use the path of practical-pictorial-abstract to tackle concepts. As such this enables children to access the lesson in a way that fits them. At no point do we insist that the practical equipment needs to be taken away and this is beneficial to children who are struggling learners of those with SEND as we can tailor learning to them. In addition to this, one of the core concepts of mastery is 'variation'- in particular 'procedural variation.' This means that questions are written to slowly build knowledge, building to greater depth questioning throughout. As such, for struggling/SEND learners, we can ask them to complete the first few questions and then move onto additional work based on these questions to ensure that they has mastered this element. We aspire that all of our learners will achieve in each lesson and we use daily intervention to ensure any gaps or misconceptions are plugged on the day meaning that every child can access the whole lesson. In some cases, children will not be able to access the curriculum at the same level of the peers. The children will have an individualised action plan to ensure that the curriculum is adapted to their needed. This action plan will be evaluated and updated termly. For children who are more able, we want them to be able to deepen their knowledge and understanding of the day's learning. One way of ensuring the more able are demonstration their greater understanding is through explanation. This can be through explanation to their peers in different parts of the lesson and can also be part of their challenge work at the end of the lesson. An ability to clearly articulate their own understanding of what they have learnt shows a mastery. Additionally, each classroom has a challenge area where children can find tailored questions that relate to their current topic. These questions present the same learning in different contexts so that children have to be able to manipulate their learning to answer these questions.

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Early Years Foundation Stage Mathematics Vocabulary

Rote Counting number zero, one, two, three… to twenty and beyond zero, ten, twenty… one hundred none count, count (up) to count on (from, to) count back (from, to) count forwards count backwards count down count in ones, twos… tens… pattern before, after, between	**Counting and Subitising** number zero, one, two, three… to twenty and beyond zero, ten, twenty… one hundred none count, count (up) to count on (from, to) count back (from, to) count forwards count backwards count down count in ones, twos… tens… how many…? pattern, arrangement sensible guess estimate
Comparing Amounts number zero, one, two, three… to twenty and beyond compare order equal to the same as more, most less, fewer, least, fewest greater amount, greatest amount smaller amount, smallest amount before, after lots, many few nearly, close to, about the same as just over, just under too many, too few, enough, not enough	**Number Sense and Place Value** number zero, one, two, three… to twenty and beyond part – part – whole group of ten pattern more, less greater, lesser/smaller amount
Number Recognition read identify, match order	**Number Graphics** represent show, draw, make, write own way explain thinking
Calculation – Addition part – part – whole add, and, combine make, sum, total, altogether equals, equal to, is the same as score double one more, two more, ten more … more than … is …	**Calculation – Subtraction** part – part – whole take (away), leave, left (over) how many have gone? how many more to make…? how many more is … than …? equals, equal to, is the same as one less/fewer, two less/fewer, ten less/fewer

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Number Fractions share (sharing) equally equal parts half, halving double, doubling, adding same number	
2-D Shape circle, triangle, square, rectangle, oblong flat, side, straight, curved sharp, pointed, corner, vertex different size, position same, different pattern, repeating, symmetrical recognise, identify, match	**3-D Shape** sphere, cube, cuboid, cone solid, face, flat, surface, curved edge sharp, pointed, corner, vertex different size, position same, different recognise, identify, match roll build
Space on top, under(neath) in front of, behind, next to, between above, below first, last second, third, fourth... forwards, backwards up, down, turn pattern, repeating next, after, before	
Statistics – Matching and Sorting same, different sort, match features in common	
Measurement – Distance measure size compare, order guess, estimate nearly, close to, about the same as just over, just under length, width, height long, short, wide, narrow, tall longer, longest wider, widest narrower, narrowest taller, tallest	**Measurement – Weight/Mass** measure size compare, order guess, estimate nearly, close to, about the same as just over, just under weigh, balance heavy, light heavier, heaviest lighter, lightest

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This vocabulary list of 142 words and phrases details the words and definitions that children need to know and use by the end of Key Stage 2. It is adapted from the *'Ultimate Maths Vocabulary List'* from Third Space Learning.

Term	Definition	Notes
Acute	Describes angles between 0 and 90 degrees.	
Addition	One of the four calculation operations. It involves combining two or more numbers to create a sum/total. The inverse of subtraction.	
Adjacent	Adjoining (as used to describe lines and angles).	
Alternate	Every other one in a sequence.	
Angle	A measure of turn - the number of degrees rotated around a point.	
Area	The measure of surface within a perimeter expressed in square units.	
Array (rectangular)	A set of items arranged in rows and columns in the shape of a rectangle. Each row has the same number of items in it. Each column has the same number of items in it.	
Ascending order	The arrangement of numbers from least to greatest.	
Average	A number representing a greater set of numbers. Can have three interpretations:	

	mean - dividing the total of the numbers by the numbers itself; median – the middle value when the numbers are in ascending or descending order; mode – the value that occurs most often in the set.	
Axis of symmetry	A line dividing a shape into two symmetrical parts.	
Term	**Definition**	**Notes**
Bar chart/graph	A graphical representation of data in which values are represented by bars or columns and interpreted using the scales on the axes.	
Bar model	A way of representing relationships in a structured diagram in which numbers are shown using bars (rectangles).	
Base	The line or face on which a shape is standing.	
Base angles	Those angles adjacent to the base of a shape.	
Bisect	To divide into two equal parts.	
Block graph	A way of representing discrete data in which each item is represented by one block/square arranged in columns. The frequency of a particular set is how many blocks or squares are in it.	

Breadth	Breadth is another name for width. It is the distance across from side to side or the shorter measurement with the longer one described as length.	
Term	**Definition**	**Notes**
Capacity	The amount of space in an object (the maximum amount of liquid or air it can contain).	
Cardinal number	A number that shows quantity but not order.	
Carroll diagram	A diagram used for classification identifying whether members of the set possess a given property or not.	
Circumference	The distance around a circle (its perimeter).	
Circle	A 2-D shape in which all of the points on the edge are of equal distance from the centre of the shape.	
Composite number	A number with more than two factors.	
Cone	A 3-D shape made of one circular face and a curved surface tapering to a point (apex) directly above the centre of the circular face.	
Congruent	Congruent shapes are the same shape and size (equal).	

Consecutive	Consecutive numbers follow in order without interruption (e.g. 2,3,4,5).	
Continuous data	Data that can take any value along a continuum, e.g. as a child's foot grows, it will go through all the values of 18.1cm, 18.2cm, 18.3cm etc.	
Coordinates	Numbers used to describe position of a point on a grid.	
Cube	A regular six-sided polyhedron in which the faces are all congruent squares.	
Cuboid	A six-sided polyhedron in which all the faces are rectangles. Otherwise known as a rectangular prism.	
Cylinder	A 3-D shape made of two congruent circular faces that are opposite each other and a curved surface joining them.	
Term	**Definition**	**Notes**
Decagon	A polygon with ten sides and angles.	
Decimal	A way of expressing fractions in the Base 10 number system. Fractional parts are expressed in tenths, hundredths, thousandths etc.	

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Denominator	The number below the line in a fraction which shows how many equal parts the whole has been split into.	
Descending order	The arrangement of numbers from the greatest to least.	
Diagonal	A straight line connecting two non-adjacent vertices (corners) of a polygon.	
Diameter	A line across a circle that passes through the centre and touches the circumference at each end.	
Difference	The answer to a subtraction calculation. A form of subtraction in which two amounts/numbers are compared. By how much a number is greater or less than another.	
Digit	The numerical symbols from 0 to 9 (inclusive). Digits can be arranged to numerically represent numbers.	
Digital root	The digital root of 58 is 4 because 5 + 8 = 13 and 1 + 3 = 4	
Dimensions	The measurements of a shape (i.e. length, width, height).	
Discrete data	Data that can only take specific values, e.g. as a child's foot grows, the shoe sizes needed can only have given sizes.	

Division	One of the four calculation operations. It can be interpreted as: repeated subtraction (grouping) – finding how many groups of a given equal size can be made from a number; sharing a number into equal parts. It is the inverse of multiplication.	
Dodecagon	A twelve sided polygon.	
Term	**Definition**	**Notes**
Edge	The intersection of two faces/curved surfaces of a three-dimensional object.	
Equation	A statement of equality between two expressions (e.g. 3 x 4 = 6 + 6).	
Equilateral triangle	A triangle with congruent (equal) sides and angles. It also has three axes (lines) of symmetry.	
Even number	A positive or negative number exactly divisible by 2.	
Exterior	Outside.	
Term	**Definition**	**Notes**
Face	A plane (flat) surface of a three-dimensional object.	
Factor	A number which will divide exactly into another number.	
Fraction	A number in its own right that can be positioned on a number line.	

	A way of expressing a proportion (part of a whole). The outcome when you divide an integer by another integer (e.g. 3 ÷ 4 = ¾)	
Frequency	The number of times something occurs within a study.	
Term	**Definition**	**Notes**
Greater than	An inequality between numbers. The symbol used to represent greater than is an arrow pointing towards the smallest number.	
Term	**Definition**	**Notes**
Hemisphere	A 3-D shape made up of a circular face and a curved surface. It is half of a sphere.	
Hendecagon	A polygon with eleven sides and eleven angles: also called an undecagon.	
Heptagon	A polygon with seven sides and seven angles: also called a septagon.	
Hexagon	A polygon with six sides.	
Horizontal	Describes a line or plane parallel to the horizon.	
Term	**Definition**	**Notes**
Improper fraction	A fraction whose numerator is equal to or greater than its denominator.	

Integer	A negative or positive whole number.	
Interior	Inside.	
Intersection	The point or line where two lines or two faces meet.	
Irregular shapes	Polygons which do not have all equal sides and angles or polyhedrons which do not have all congruent faces and angles.	
Isosceles triangle	A triangle which has two sides of equal length and two equal angles. It also has one axis (line) of symmetry.	
Term	**Definition**	**Notes**
Kite	A quadrilateral that has two adjacent pairs of sides that are equal in length, and at least one pair of opposite angles are equal.	
Term	**Definition**	**Notes**
Less than	An inequality between numbers. The symbol used to represent less than is an arrow pointing towards the smallest number.	
Line of symmetry	(See axis of symmetry).	
Line graph	A representation of data collected over time. Each point along the line has a meaningful value.	
Term	**Definition**	**Notes**

Mass	The measurement of the quantity of matter in an object, measured in grams and kilograms.	
Mean	An average of a set of numbers. The sum of the values in a set of data divided by the total number of items in that set.	
Median	An average of a set of numbers. The middle value when the numbers are in ascending or descending order.	
Mode	An average of a set of numbers. The value that occurs the most often in a set of data.	
Multiple	The product of a given number with another factor.	
Multiplication	One of the four calculation operations. It can be interpreted as: repeated addition – adding the same number to itself a number of times; scaling – making a number so many times greater (or smaller) It is the inverse of division.	
Term	**Definition**	**Notes**
Negative number	A number less than 0. Indicated by a - sign before the numeral and read	

	as ‘negative 4’ for -4. Colloquially said as ‘minus 4’, especially when referring to temperature.	
Nonagon	A polygon with nine sides and angles.	
Number	A quantity, measurement or label indicating a value.	
Numeral	The written symbol used to represent an amount, value or label. For example the number three hundred can be represented by the numeral 300 or CCC using Roman numerals.	
Numerator	The number above the line in a fraction which shows the number of denominator parts considered in a fraction.	
Term	**Definition**	**Notes**
Oblique	Oblique means sloping or slanting.	
Oblong	A polygon with two pairs of straight, unequal sides and four right angles. An irregular rectangle.	
Obtuse angle	An angle between 90 and 180 degrees.	
Octagon	A polygon with eight sides and eight angles.	
Octahedron	A polyhedron with eight faces.	

Odd number	A number that when divided by two leaves a remainder of one.	
Ordinal number	Describes a position in a sequence e.g. first, second, third etc.	
Term	**Definition**	**Notes**
Parallel lines	Lines with no common points and always the same distance apart.	
Parallelogram	A four-sided polygon with opposite sides equal and parallel and the opposite angles are equal in size.	
Part-part-whole	The understanding of how a number (whole) can be shown to be the sum of two parts. It can be used to represent the relationship between the four operations.	
Partition	The action of splitting a number into parts.	
Pentagon	A polygon with five sides and angles.	
Percentage	A way of describing a proportion of an amount by expressing it out of (every) 100.	
Perimeter	The distance around the boundary of a shape.	
Perpendicular line	A line at right angles to another line or plane. *NB The lines do not have to be touching.*	
Pictogram	A way of representing discrete data in which a picture or icon is	

	used to represent each item or a given number of items.	
Pie chart	A way of representing data where the total is represented by a circle (pie) and each category shown by a sector of the circle which indicates the frequency of the category.	
Polygon	A plane (flat) shape with straight sides.	
Polyhedron	A three dimensional shape with plane (flat) faces.	
Place value	Indicates the position of a numeral (e.g. the place value of the 3 in 738 is 30) and how numbers relate to other numbers within the Base 10 number system.	
Prime number	A number with only two factors, 1 and itself (e.g. 2,3,5,7,11, 13, 17, 19, 23…)	
Prism	A polyhedron (3-D shape with faces and no curved surfaces) in which opposite ends are congruent and these are joined by rectangular faces.	
Product	The result when two or more numbers are multiplied.	
Pyramid	A polyhedron made of a polygon base with straight edges coming	

	from each vertex of the base meeting at a single point (apex). All the other faces are therefore triangular.	
Term	**Definition**	**Notes**
Quadrant	The sectors of a coordinate grid are called quadrants. They are named first (+,+), second (-,+), third (-,-) and fourth (+,-) A quarter of the area of a circle which also contains a right angle.	
Quadrilateral	A polygon with four sides and angles.	
Quotient	The result when one number is divided by another number.	
Term	**Definition**	**Notes**
Radius	A line in a circle from the centre to the edge. It is half the diameter.	
Ratio	An expression of the comparison between two or more quantities found by dividing one quantity by the other.	
Rectangle	A quadrilateral with opposite sides equal and parallel and containing four right angles.	
Rectilinear	A polygon made of lines meeting at right angles.	

Reflection	The image of a shape in a 'mirror line'. Corresponding points of the shape and its reflection are equidistant from the 'mirror line'.	
Reflex angle	An angle greater than 180 degrees.	
Regular	In geometry when a polygon has sides of equal length and angles of equal size or when a polyhedron has congruent faces and internal angles where faces meet. The only regular polyhedrons are tetrahedron, cube, octahedron, dodecahedron and icosahedron.	
Rhombus	A parallelogram with equal length sides. Opposite sides are parallel and opposite sides are equal in size.	
Roman numerals	Seven letters are used in combination to write numbers: I = 1 V = 5 X = 10 L = 50 C = 100 D = 500 M = 1000	
Rotation	Turning around a given point – the centre of rotation.	
Rotational symmetry	A shape is said to have rotational symmetry if it looks the same in different positions when rotated about its centre.	

Rounding	An approximation used to express a number in a more convenient way.	
Term	**Definition**	**Notes**
Scalene triangle	A triangle that has three sides of different length and no equal angles.	
Semi-circle	A 2-D shape with one straight side and one curved edge. It is one half of a circle.	
Sphere	A 3-D shape with one curved surface in which every point on the surface is equidistant from the centre of the shape.	
Squared	A number squared is a number multiplied by itself.	
Square number	The product of a number multiplied by itself. A number whose units can be arranged into a square (e.g. 1, 4, 9, 16, 25, 36, 49, 64…).	
Subtraction	One of the four calculation operations. It can be interpreted as: - take away, in which one number is removed from another; - difference, in which two numbers are compared.	

Sum	The result when two or more numbers are added together.	
Symmetrical	A shape is symmetrical if it is identical on either side of a line dividing it into two parts.	
Term	**Definition**	**Notes**
Tally	A system of collecting data when the final total for each category cannot be determined immediately. Items are recorded using vertical lines for numbers less than 5 and an oblique line across the vertical lines to show a group of 5.	
Temperature	The measure of hot and cold.	
Tessellation	Shapes fitted together with a number of exact copies and with no overlaps or gaps.	
Tetrahedron	A polyhedron with four faces.	
Translation	This takes place when a shape is moved from one place to another just by sliding it (without rotating, reflecting or enlarging).	
Trapezium	A quadrilateral with only one pair of parallel sides.	
Triangle	A polygon with three sides and angles. They can be scalene, isosceles or equilateral, and also described as right angled.	

Triangular number	A number created by adding consecutive numbers from starting from 1). A number whose units can be arranged into a triangle (e.g. 1, 3, 6, 10, 15, 21…)	
Term	**Definition**	**Notes**
Venn diagram	A diagram used for classification identifying whether members of the set possess given properties.	
Vertex	The point at which two sides of a 2-D shape meet or two or more edges of a polyhedron meet.	
Vertical line	A line which is at right angles to a horizontal line.	
Volume	The amount of liquid in a container or the amount of three-dimensional space taken up by an object, measured in cubic units.	
Term	**Definition**	**Notes**
Weight	The force of gravity on an object, measured in newtons.	
Term	**Definition**	**Notes**
x axis	The horizontal line on a graph or coordinate grid.	
Term	**Definition**	**Notes**
y axis	The vertical line on a graph or coordinate grid.	