Maths

Colton Primary School

Progression map

Curriculum intent

At Colton Primary School, it is our intent to provide a high-quality maths education for all pupils, by teaching them the essential knowledge to develop an understanding of the world and to create a natural curiosity and love for maths. Throughout the school, the children engage in daily maths sessions to advance their learning. Maths at Colton Primary School is an enjoyable and rewarding experience for pupils and is designed to engage all learners. Lessons are planned and developed to equip the pupils with the necessary tools to become *real* mathematicians. Children are encouraged to consider and use different strategies and to learn from their independent mistakes. The school creates opportunities for both independent and collaborative work during lessons; through trying different strategies and approaches, they develop the skills of perseverance and resilience, as well as recognising the importance of working as a team.

As stated in the National Curriculum, all children must be able to access fluency, reasoning and problem-solving during lessons. It is therefore essential that we as teachers provide the support needed for every child to reason mathematically and this is often evidenced during their problem-solving activities.

At Colton Primary School, we use the White Rose Maths hub as a basis for our maths planning, which supports Teaching for Mastery. A mathematical concept or skill has been mastered when a pupil can represent it in multiple ways, has the mathematical vocabulary to communicate related ideas, and can independently apply the concept to new problems in unfamiliar situations.

Mastery is a journey and long-term goal, achieved through exploration, clarification, practise and application over time. At each stage of learning, pupils should be able to demonstrate a deep, conceptual understanding of the topic and be able to build on this over time.

Progression of Knowledge in Maths Colton Primary School 2022

Strand	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
Place Value **Counting**	Count up to three or four objects by saying a number name for each item Count actions or objects which cannot be moved Count objects to 10 and begin to count beyond 10 Count out up to six objects from a larger group Count an irregular arrangement of up to ten objects **ELG - count reliably with numbers from one to 20**	Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number			Count backwards through zero to include negative numbers	Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero	Use negative numbers in context, and calculate intervals across zero
Counting		Count, read and write numbers to 100 in numerals; 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	Count from 0 in multiples of 4, 8, 50 and 100	Count in multiples of 6, 7, 9, 25 and 1000	Count forwards or backwards in steps of powers of 10 for any given number up to 1000000	
Counting		Given a number, identify one more and one less		Find 10 or 100 more or less than a given number	Find 1000 more or less than a given number		

Comparing Numbers	Use the language of 'more' and 'fewer' to compare two sets of objects **ELG - with numbers from one to 20, place them in order** **ELG - with numbers from 1 to 20 say which number is one more or less than a given number "**	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 1000	Read, write, order and compare numbers to at least 1000000 and determine the value of each digit (appears also in Reading and Writing Numbers)	Read, write, order and compare numbers up to 10000000 and determine the value of each digit (appears also in Reading and Writing Numbers)
Identifying, Representing and Estimating Numbers	Select the correct numeral to represent 1 to 5, then 1 to 10 objects Estimate how many objects they can see and check by counting them	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	Recognise some numerals of personal significance Recognise numerals 1 to 5	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		Read, write, order and compare numbers to at least 1000000 and determine the value of each digit (appears also in Comparing Numbers)	Read, write, order and compare numbers up to 10000000 and determine the value of each digit (appears also in Understanding Place Value)
Understanding Place Value			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,	Read, write, order and compare numbers to at least 1000000 and	Read, write, order and compare numbers up to 10000000 and

					hundreds, tens, and ones)	determine the value of each digit	determine the value of each digit
Rounding					Round any number to the nearest 10, 100 or 1000	Round any number up to 1000000 to the nearest 10, 100, 1000, 10000 and 100000	Round any whole number to a required degree of accuracy
Problem Solving			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
Number - Addition and Subtraction **Number Bonds**		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 Calculation	Find the total number of items in two groups by counting all of them In practical activities and discussion, begin to use the vocabulary involved in adding and subtracting Record, using marks that they can interpret and explain **ELG - using quantities and objects, they add and subtract two**	Add and subtract one-digit and two-digit numbers to 20, including zero	Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: - a two-digit number and ones - a two-digit number and tens - two two-digit numbers - adding three one-digit numbers	Add and subtract numbers mentally, including: - a three-digit number and ones - a three-digit number and tens - a three-digit number and hundreds		Add and subtract numbers mentally with increasingly large numbers	Perform mental calculations, including with mixed operations and large numbers

	single-digit numbers and count on or back to find the answer						
Mental Calculation		Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Written Methods)	Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot				Use their knowledge of the order of operations to carry out calculations involving the four operations
Written Methods		Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs		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 and Estimating			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, an appropriate degree of accuracy
Problem Solving	Begin to identify their 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	Solve problems with addition and subtraction: - using concrete objects and pictorial representations, including those involving numbers, quantities and measures	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

		number problems such as 7 = ? - 9	- applying their increasing knowledge of mental and written methods				
Number- Multiplication, Division and Ratio **Multiplication and Division Facts**			Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers	Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables	Recall multiplication and division facts for multiplication tables up to 12x12		
Mental Calculation				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 (appears also in 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	Multiply and divide numbers mentally drawing upon known facts	Perform mental calculations, including with mixed operations and large numbers
Mental Calculation			Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot		Recognise and use factor pairs and commutativity in mental calculations Multiply and divide whole numbers and those involving		

					decimals by 10, 100 and 1000		
Written Calculations			Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), 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 (appears also in Mental 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
Properties of Numbers: Multiples, Factors, Primes, Square					Recognise and use factor pairs and commutativity in mental calculations (appears also in Mental Calculation)	Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers	Identify common factors, common multiples and prime numbers

and Cubed 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})	
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			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, an appropriate degree of accuracy
Problem Solving	**ELG - they solve problems, including doubling, halving and sharing**	Solve one-step problems involving multiplication and division, by calculating the answer using	Solve problems involving multiplication and division, using materials, arrays, repeated addition,	Solve problems, including missing number problems, involving multiplication and division, including	Solve problems involving multiplying and adding, including using the distributive law to	Solve problems involving multiplication and division including using their knowledge of	Solve problems involving addition, subtraction, multiplication and division

		concrete objects, pictorial representations and arrays with the support of the teacher	mental methods, and multiplication and division facts, including problems in contexts	positive integer scaling problems and correspondence problems in which n objects are connected to m objects	multiply two-digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects	factors and multiples, squares and cubes	
<u>Number – Fractions, Decimals and Percentages</u> **Counting in Fractional Steps**				Count up and down in tenths	Count up and down in hundredths		
Recognising Fractions		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 ⅓, ¼, $^{2}/_{4}$ and ¾ 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	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 (appears also in Equivalence)	

				fractions and non-unit fractions with small denominators			
Comparing Fractions				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 including Fractions, Decimals and Percentages			Write simple fractions e.g. ½ of 6 = 3 and recognise the equivalence of $^{2}/_{4}$ and ½	Recognise and show, using diagrams, equivalent fractions with small denominators	Recognise and show, using diagrams, families of common equivalent fractions Recognise and write decimal equivalents of any number of tenths or hundredths Recognise and write decimal equivalents to ¼; ½; ¾	Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and 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	Use common factors to simplify fractions; use common multiples to express fractions in the same denomination Associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. ⅜) Recall and use equivalences between simple fractions, decimals and percentages,

						Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal	including in different contexts
Addition and Subtraction of Fractions				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 denominators that are 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			Write simple fractions e.g. 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2			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 x 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 ÷ 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 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 Use written division methods in cases where the answer has up to two decimal places
Problem Solving				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 problems involving numbers up to three decimal places	Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison
<u>Algebra –</u> Equations							Express missing number problems algebraically Find pairs of numbers that satisfy

							number sentences involving two unknowns Enumerate all possibilities of combinations of two variables
Formulae							Use simple formulae
Sequences							Generate and describe linear number sequences
Measurement – Comparing and Estimating	Order two or three items by length or height Order two items by weight or capacity	Compare, describe and solve practical problems for: - lengths & heights [e.g. long/short, longer/shorter, tall/short, double/half] - mass/weight [e.g. heavy/light, heavier than, lighter than] - capacity & volume [e.g. full/empty, more than, less than, half, half full, quarter] - time [e.g. quicker, slower, earlier, later]	Compare and order lengths, mass, volume/capacity and record the results using >, < and =		Estimate, compare and calculate different measures, including money in pounds and pence (appears also 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 (appears also in Measuring) Estimate volume (e.g. using $1cm^3$ 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 cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units such as mm^3 and km^3
Comparing and Estimating	Order and sequence familiar events Measure short periods of time in simple ways **ELG - children use**	Sequence events in chronological order using language [e.g. before and after, next, first, today, yesterday, tomorrow,	Compare and sequence intervals of time	Compare durations of events, for example to calculate the time taken by particular events or tasks			

	everyday language to talk about time	morning, afternoon and evening]		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 (appears also in Telling the Time)			
Measuring and Calculating		Measure and begin to record the following: - lengths and heights - mass/weight - capacity and volume - time (hours, minutes, seconds)	Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels	Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)	Estimate, compare and calculate different measures, including money in pounds and pence (appears also in Comparing)	Use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling	Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate (appears also in Converting)
Measuring and Calculating				Measure the perimeter of simple 2D shapes	Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres	Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres	Recognise that shapes with the same areas can have different perimeters and vice versa
Measuring and Calculating		Recognise and know the value of different	Find different combinations of coins that equal the	Add and subtract amounts of money to give change, using			

Measuring and Calculating		denominations of coins and notes	same amounts of money Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change	both £ and p in practical contexts			
Measuring and Calculating					Find the area of rectilinear shapes by counting squares	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	Calculate the area of parallelograms and triangles Calculate the area of parallelograms and triangles; calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (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		Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times	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	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, write and convert time between analogue and digital 12- and 24-hour clocks		
Telling the Time		Recognise and use language relating to dates, including days of the week, weeks, months and years	Know the number of minutes in an hour and the number of hours in a day	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			
Telling the Time					Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days	Solve problems involving converting between units of time	
Converting			Know the number of minutes in an hour and the number of hours in a day	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. kilometre to metre; hour to minute)	Convert between different units of metric measure (e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)	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
Converting					Read, write and convert time between analogue and digital 12- and 24-hour clocks	Solve problems involving converting between units of time	Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate
Converting					Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days	Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints	Convert between miles and kilometres
<u>Statistics –</u> Interpretating, Representing and Construction of 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

Problem Solving				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
<u>Geometry –</u> Identifying Shapes and their Properties	Use familiar objects and common shapes to create and recreate patterns **ELG - They recognise, create and describe patterns**	Recognise and name common 2D and 3D shapes, including: - 2D shapes [e.g. rectangles (including squares), circles and triangles] - 3D shapes [e.g. cuboids (including cubes), pyramids and spheres]	Identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line		Identify lines of symmetry in 2D shapes presented in different orientations	Identify 3D shapes, including cubes and other cuboids, from 2D representations	Recognise, describe and build simple 3D shapes, including making nets
Identifying Shapes and their Properties	Begin to use mathematical names for "solid" 3D shapes and "flat" 2D shapes, and mathematical terms to describe shapes		Identify and describe the properties of 3D shapes, including the number of edges, vertices and faces				Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.
Identifying Shapes and their Properties	**ELG - They explore characteristics of everyday objects and shapes and use mathematical language to describe them**		Identify 2D shapes on the surface of 3D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]				

Drawing and Constructing	Use familiar objects and common shapes to create and recreate patterns and build models			Draw 2D shapes and make 3D shapes using modelling materials; recognise 3D 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 (°)	Draw 2D shapes using given dimensions and angles Recognise, describe and build simple 3D shapes, including making nets (appears also in Identifying Shapes and Their Properties)
Comparing and Classifying	Begin to use mathematical names for 'solid' 3D shapes and 'flat' 2D shapes, and mathematical terms to describe shapes		Compare and sort common 2D and 3D shapes and everyday objects		Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes	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	Describe their relative position such as 'behind' or 'next to'			Recognise angles as a property of shape or a description of a turn		Know angles are measured in degrees; estimate and compare acute, obtuse and reflex angles	
Angles				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 acute and obtuse angles and compare and order angles up to two right angles by size	Identify: - angles at a point and one whole turn (total 360°) - angles at a point on a straight line and ½ a turn (total 180°) - other multiples of 90°	Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles

Angles				Identify horizontal and vertical lines and pairs of perpendicular and parallel lines		Use the properties of rectangles to deduce related facts and find missing lengths and angles	
Position, Direction and Movement		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 movements between positions as translations of a given unit to the left/right and up/down		
Position, Direction and Movement					Describe positions on a 2D grid as coordinates in the first quadrant	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)
Position, Direction and Movement					Plot specified points and draw sides to complete a given polygon		Draw and translate simple shapes on the coordinate plane, and reflect them in the axes
Pattern			Order and arrange combinations of mathematical				

			objects in patterns and sequences				

Key vocabulary

EYFS Maths Vocabulary							
Number and Place Value	Addition and Subtraction	Multiplication and Division	Measure	Geometry – Position and Direction	Geometry – Properties of Shapes	Fractions	Problem Solving
Number Zero Numbers up to 20 Count, forwards, backwards How many, more, fewer Equal, group, order, largest, smallest, less Even, odd	One more, one less Altogether How many are left? Same, different, number bond Part-whole Add, takeaway	Double, half, halving, pairs, twice as many Share Equal, unequal Group Left over	Now, before, soon, later, after, next, fastest, time Yesterday, today, tomorrow, day, week, weekend, month, year Days of the week, seasons, birthday, holiday, morning, afternoon, evening, night, midnight Bedtime, dinner/ lunch time, playtime Length, height, breadth, tall, short, long, tallest, longer/ shorter, taller/ shorter Wider/ narrower, weigh, weight, heavy, heavier, heaviest, light, lighter, lightest, balance, scales	On, next to, over, under, around, through	Shape, circle, triangle, rectangle, square, side, straight, curved, cylinder, cube, cuboid, cone, sphere, pyramid, face Same, different pattern	Half, halve, halving	Repeat, what comes next? Carry on, continue Find, choose, collect, use, make, build Tell me, describe, pick out, talk about, explain, show me In order, in a different order Count

			Full, half full, empty				

Year 1 Maths Vocabulary

Number and Place Value	Addition and Subtraction	Multiplication and Division	Measure	Geometry – Position and Direction	Geometry – Properties of Shapes	Fractions	Problem Solving
Numbers up to 100, none Count (on/up/to/from/ down) Before, after Less, many, few, least, fewest, smallest, greater, lesser Pair Ones, tens Ten more/less Digit Numeral Figure(s) Compare A different order Size Value	Number line More, plus, make, sum Inverse Double, near double Half, halve Equals, is the same as (including equals sign) Difference between How many more to make..?, how many more is…than..?, how much more is..? Subtract, minus How many fewer is…than. . ?, how much less is..?	Count in twos, threes, fives Count in tens (forwards from/backwards from) How many times? Lots of Once, twice, three times, five times Multiple of, times, multiply, multiply by Repeated addition Array, row, column Share equally Group in pairs, threes, etc . Equal groups of	Holds, container, weigh, weighs, balances Time, takes longer, takes less time, hour, o'clock, half past, clock, watch, hands Quick, quicker, quickest, quickly, fast, faster, fastest, slow, slower, slowest, slowly Old, older, oldest, new, newer, newest How long ago?, how long will it be to…?, how long will it take to… ? , how often ? Always, never, often, sometimes, usually, once, twice, first, second, third, e t c. Estimate, close to, about the same as, just over, just under	Position Underneath, above, below, top, bottom, side on, in, outside, inside around, in front, behind Front, back Beside Opposite, apart Between, middle, edge, centre Corner Direction Journey Left, right, up, down, forwards, backwards, sideways Across Close, far, near	Group, sort Flat, curved, round Hollow, solid Corner (point, pointed) Face, side, edge Make, build, draw	Whole Equal parts, four equal parts One half, two halves A quarter, two quarters	Listen, join in Say, think, imagine, remember Start from, start with, start at Look at, point to Put, place, fit Arrange, rearrange Change, change over Split, separate Read , write, record, trace, copy, complete, finish, end Fill in, shade, colour, tick , cross, draw , draw a line between , join (up), ring , arrow Cost Count, work out, answer, check same number(s)/different n u m b er(s) / missing number(s)

Between, halfway between Above, below		Divide, divided by, left, left over	Too many, too few, not enough, enough Length, width, height, depth Low, wide, narrow, deep, shallow, thick, thin Far, near, close Metre, ruler, metre stick Money, coin, penny, pence, pound, price, cost, buy, sell, spend, spent, pay, change, dear(er), costs more, costs less, cheaper, costs the same as How much?, how many?	To, from, towards, away from Movement Slide, roll, turn, whole turn, half turn Stretch, bend			Number facts, number line, number track, number square, number cards Abacus , counters, cubes , blocks , rods, die, dice , dominoes, pegs, peg board Same way, different way, best way, another way Not all, every, each
Year 2 Maths Vocabulary							
Number and Place Value	Addition and Subtraction	Multiplication and Division	Measure	Geometry – Position and Direction	Geometry – Properties of Shapes	Fractions	Problem Solving
Numbers to one hundred Hundreds	Quarter past/to m/km, g/kg, ml/l Temperature (degrees)	Rotation Clockwise, anticlockwise	Size Bigger, larger, smaller Symmetrical, line of symmetry	Size Bigger, larger, smaller	Three quarters, one third, a third Equivalence, equivalent	Count, tally, sort Vote	Predict Describe the pattern, describe the rule

Partition, recombine Hundred more/less		Straight line Ninety degree turn, right angle	Fold Match Mirror line, reflection Pattern, repeating pattern	Symmetrical, line of symmetry Fold Match Mirror line, reflection Pattern, repeating pattern		Graph, block graph, pictogram, Represent Group, set, list, table Label, title Most popular, most common, least popular, least common	Find, find all, find different Investigate
Year 3 Maths Vocabulary							
Number and Place Value	Addition and Subtraction	Multiplication and Division	Measure	Geometry – Position and Direction	Geometry – Properties of Shapes	Fractions	Statistics
Numbers to one thousand	Column addition and subtraction	Product Multiples of four, eight, fifty and one hundred Scale up	Leap year Twelvehour/twenty-fourhour clock Roman numerals I to XIII	Greater/less than ninety degrees Orientation (same orientation, different orientation)	Horizontal, vertical, perpendicular and parallel lines	Numerator, denominator Unit fraction, nonunit fraction Compare and order Tenths	Chart, bar chart, frequency table, Carroll diagram, Venn diagram Axis, axes Diagram
Year 4 Maths Vocabulary							
Number and Place Value	Addition and Subtraction	Multiplication and Division	Measure	Geometry – Position and Direction	Geometry – Properties of Shapes	Fractions and Decimals	Statistics
Tenths, hundredths		Multiplication facts (up to 12x12) Division facts	Convert	Coordinates Translation	Quadrilaterals Triangles	Equivalent decimals and fraction	Continuous data Line graph

Decimal (places) Round (to nearest) Thousand more/less than Negative integers Count through zero Roman numerals (I to C)		Inverse Derive		Quadrant x-axis, y-axis Perimeter and area	Right angle, acute and obtuse angles		
Year 5 Maths Vocabulary							
Number and Place Value	Addition and Subtraction	Multiplication and Division	Measure	Geometry – Position and Direction	Geometry – Properties of Shapes	Fractions	Problem Solving
Powers of 10	Efficient written method	Factor pairs Composite numbers, prime number, prime factors, square number, cubed number Formal written method	Volume Imperial units, metric units	Reflex angle Dimensions	Regular and irregular Polygons	Proper fractions, improper fractions, mixed numbers Percentage Half, quarter, fifth, two fifths, four fifths Ratio, proportion	
Year 6 Maths Vocabulary							
Number and Place Value	Addition and Subtraction	Multiplication and Division	Algebra	Geometry – Position and Direction	Geometry – Properties of Shapes	Fractions, Decimals and Percentages	Data Statistics
Numbers to ten million	Order of operations	Order of operations Common factors, common multiples	Linear number sequence Substitute Variables	Four quadrants (for coordinates)	Vertically opposite (angles) Circumference, radius, diameter	Degree of accuracy Simplify	Mean Pie chart Construct

			Symbol Known values				