



Maths Knowledge and Skills Progression

Recall	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Factual Fluency (Maths Keys)			<p>Able to recall some rapid recall of addition and subtraction facts within 10.</p> <p>Can count forwards and backwards in 2, 5 and 10 up to ten multiples and count forwards and backwards through the odd numbers.</p>	<p>Have a secure fluency in addition and subtraction facts within 10, through continued practice.</p>	<p>Have a secure fluency in addition and subtraction facts that bridge 10, through continued practice</p> <p>Able to recall multiplication facts, and corresponding division facts, in the 10, 5, 2, 4 and 8 multiplication tables, and recognise products in these multiplication tables as multiples of the corresponding number.</p> <p>Are able to apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10).</p>	<p>Able to recall multiplication and division facts up to 12×12 and recognise products in multiplication tables as multiples of the corresponding number.</p> <p>Are able to solve division problems, with two-digit dividends and one-digit divisors, that involve remainders, and interpret remainders appropriately according to the context.</p> <p>Are able to apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100)</p>	<p>Have a secure fluency in multiplication table facts, and corresponding division facts, through continued practice.</p> <p>Are able to apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth).</p>	<p>Have a secure fluency in multiplication table facts, and corresponding division facts, through continued practice.</p> <p>Are able to apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth).</p>

Number: Place Value	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Count Counting to 5 1-1 correspondence Counting songs Number Stories and rhymes	Count Counting objects to 10 - Counting up to 20 and beyond 1:1 correspondence Counting songs Number stories and rhymes	Count: • count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number • count numbers to 100 in numerals; count in multiples of twos, fives and tens	Count: • count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number	Count: • count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number	Count: • count in multiples of 6, 7, 9, 25 and 1000 • count backwards through zero to include negative numbers	Count: • count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 • count forwards and backwards with positive and negative whole numbers, including through zero	Count: • read, write, (order and compare) numbers up to 10 000 000 and determine the value of each digit
	Represent Representing numbers to 5, Using manipulatives and pictorial representations	Represent: Representing Numbers to 10 using manipulatives and pictorial representations	Represent: • identify and represent numbers using objects and pictorial representations • read and write numbers to 100 in numerals • read and write numbers from 1 to 20 in numerals and words	Represent: • read and write numbers to at least 100 in numerals and in words • identify, represent and estimate numbers using different representations, including the number line	Represent: • identify, represent and estimate numbers using different representations • read and write numbers up to 1000 in numerals and in words	Represent: • identify, represent and estimate numbers using different representations • 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	Represent: • read, write, (order and compare) numbers to at least 1 000 000 and determine the value of each digit • read Roman numerals to 1000 (M) and recognise years written in Roman numerals	Represent: As 'Count'
	Use & Compare *Comparing numbers to 5	Use & Compare * Comparing numbers to 10	Use and Compare: • given a number, identify one more and one less	Use and Compare: • recognise the place value of each digit in a two-digit number (tens, ones) • compare and order numbers from 0 up to 100; use <, > and = signs	Use and Compare: • recognise the place value of each digit in a three-digit number (hundreds, tens, ones) • compare and order numbers up to 1000	Use and Compare: • find 1000 more or less than a given number • recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) • order and compare numbers beyond 1000 • (read, write) order and compare numbers to at least 1 000 000 and determine the value of each digit	Use and Compare: • (read, write) order and compare numbers to at least 1 000 000 and determine the value of each digit	Use and Compare: As 'Count'
				Problems/Rounding: • use place value and number facts to solve problems	Problems/Rounding: • solve number problems and practical problems involving these ideas	Problems/Rounding: • round any number to the nearest 10, 100 or 1000 • solve number and practical problems that involve all of the above and with increasingly large positive numbers	Problems/Rounding: • interpret negative numbers in context • round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 • solve number problems and practical problems that involve all of the above	Problems/Rounding: • 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

Number: Addition and Subtraction	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		Calculations: <ul style="list-style-type: none"> * add and subtract numbers to 5 * Know number bonds to 5 and some to 10 	Calculations: <ul style="list-style-type: none"> • add and subtract one-digit and two digit numbers to 20, including zero 	Calculations: <ul style="list-style-type: none"> • add and subtract numbers using concrete objects, pictorial representations, and mentally, including: <ul style="list-style-type: none"> - a two-digit number and ones - a two-digit number and tens - two two-digit numbers - adding three one digit numbers 	Calculations: <ul style="list-style-type: none"> • add and subtract numbers mentally, including: <ul style="list-style-type: none"> - a three-digit number and ones - a three-digit number and tens - a three-digit number and hundreds • add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction 	Calculations: <ul style="list-style-type: none"> • add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate 	Calculations: <ul style="list-style-type: none"> • add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) • add and subtract numbers mentally with increasingly large numbers 	Calculations: <ul style="list-style-type: none"> • perform mental calculations, including with mixed operations and large numbers • use their knowledge of the order of operations to carry out calculations involving the four operations
			Problems: <ul style="list-style-type: none"> • solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = c - 9$ 	Problems: <ul style="list-style-type: none"> • solve problems with addition and subtraction: <ul style="list-style-type: none"> - using concrete objects and pictorial representations, including those involving numbers, quantities and measures - applying their increasing knowledge of mental and written methods 	Problems: <ul style="list-style-type: none"> • solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction 	Problems: <ul style="list-style-type: none"> • solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why 	Problems: <ul style="list-style-type: none"> • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why • solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign 	Problems: <ul style="list-style-type: none"> • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

Number: Multiplication and Division	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		Recall/Use: Recall double facts and how quantities can be distributed equally.		Recall/Use: <ul style="list-style-type: none"> recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot 	Recall/Use: <ul style="list-style-type: none"> recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables 	Recall/Use: <ul style="list-style-type: none"> recall multiplication and division facts for multiplication tables up to 12×12 use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers recognise and use factor pairs and commutativity in mental calculations 	Recall/Use: <ul style="list-style-type: none"> identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers know and use the vocabulary of prime numbers, prime factors and composite (non prime) numbers establish whether a number up to 100 is prime and recall prime numbers up to 19 recognise and use square numbers and cube numbers, and the notation for squared and cubed 	Recall/Use: <ul style="list-style-type: none"> identify common factors, common multiples and prime numbers use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy
				Calculations: <ul style="list-style-type: none"> calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals (=) signs 	Calculations: <ul style="list-style-type: none"> 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 	Calculations: <ul style="list-style-type: none"> multiply two-digit and three-digit numbers by a one digit number using formal written layout 	Calculations: <ul style="list-style-type: none"> 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 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 	Calculations: <ul style="list-style-type: none"> multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context perform mental calculations, including with mixed operations and large numbers 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
		Problems: Solve one step problems by sharing equally	Problems: <ul style="list-style-type: none"> 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 	Problems: <ul style="list-style-type: none"> solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts 	Problems: <ul style="list-style-type: none"> solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects 	Problems: <ul style="list-style-type: none"> 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 	Problems: <ul style="list-style-type: none"> solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates 	Problems: <ul style="list-style-type: none"> solve problems involving addition, subtraction, multiplication and division
							Combined: <ul style="list-style-type: none"> solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign 	Combined: <ul style="list-style-type: none"> use their knowledge of the order of operations to carry out calculations involving the four operations

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Number: Fractions			Fractions Recognise and Write: <ul style="list-style-type: none"> 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 	Fractions Recognise and Write: <ul style="list-style-type: none"> recognise, find, name and write fractions $\frac{1}{4}$ $\frac{1}{2}$ $\frac{2}{4}$ $\frac{3}{4}$ of a length, shape, set of objects or quantity 	Fractions Recognise and Write: <ul style="list-style-type: none"> 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 non-unit fractions with small denominators recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators 	Fractions Recognise and Write: <ul style="list-style-type: none"> count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. convert mixed numbers to improper fractions and vice versa. 	Fractions Recognise and Write: <ul style="list-style-type: none"> 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 [for example, $\frac{7}{5} = 1 \frac{2}{5}$] 	
				Fractions Compare: <ul style="list-style-type: none"> Recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$ 	Fractions Compare: <ul style="list-style-type: none"> recognise and show, using diagrams, equivalent fractions with small denominators compare and order unit fractions, and fractions with the same denominators 	Fractions Compare: <ul style="list-style-type: none"> recognise and show, using diagrams, families of common equivalent fractions 	Fractions Compare: <ul style="list-style-type: none"> compare and order fractions whose denominators are all multiples of the same number 	Fractions Compare: <ul style="list-style-type: none"> use common factors to simplify fractions; use common multiples to express fractions in the same denomination compare and order fractions, including fractions > 1
				Fractions Calculations: <ul style="list-style-type: none"> write simple fractions for example, $\frac{1}{2}$ of 6 = 3 	Fractions Calculations: <ul style="list-style-type: none"> add and subtract fractions with the same denominator within one whole [for example $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$] 	Fractions Calculations: <ul style="list-style-type: none"> add and subtract fractions with the same denominator 	Fractions Calculations: <ul style="list-style-type: none"> add and subtract fractions with the same denominator and denominators that are multiples of the same number multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams 	Fractions Calculations: <ul style="list-style-type: none"> add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$] divide proper fractions by whole numbers [for example $\frac{1}{5} \div 2 = \frac{1}{10}$]
					Fractions Solve Problems: <ul style="list-style-type: none"> solve problems that involve all of the above 	Fractions Solve Problems: <ul style="list-style-type: none"> 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 		

Number: Decimals and Percentages	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
						Decimals Read, Write and Compare: <ul style="list-style-type: none">• recognise and write decimal equivalents of any number of tenths or hundredths• recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$• 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	Decimals Read, Write and Compare: <ul style="list-style-type: none">• read and write decimal numbers as fractions (for example, $0.71 = \frac{71}{100}$)• recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents• 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	Decimals Read, Write and Compare: <ul style="list-style-type: none">• identify the value of each digit in numbers given to three decimal places
						Fractions Decimals and Percentages: <ul style="list-style-type: none">• solve simple measure and money problems involving fractions and decimals to two decimal places	Fractions Decimals and Percentages: <ul style="list-style-type: none">• recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal• solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{1}{10}$ and those fractions with a denominator of a multiple of 10 or 25	Fractions Decimals and Percentages: <ul style="list-style-type: none">• associate a fraction with division and calculate decimal fraction equivalents (for example, 0.375) for a simple fraction (for example, $\frac{3}{8}$)• recall and use equivalences between simple fractions, decimals and percentages, including in different contexts

Number: Ratio and Proportion	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
								Ratio and Proportion: <ul style="list-style-type: none"> • 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/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

Number: Algebra	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			Algebra: <ul style="list-style-type: none"> • solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ____ – 9 	Algebra: <ul style="list-style-type: none"> • recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems 	Algebra: <ul style="list-style-type: none"> • solve problems, including missing number problems 			Algebra: <ul style="list-style-type: none"> • 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

Measurement	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			Using Measures: <ul style="list-style-type: none">• compare, describe and solve practical problems for:<ul style="list-style-type: none">- lengths and heights- mass/weight- capacity and volume- time• measure and begin to record the following:<ul style="list-style-type: none">- lengths and heights- mass/weight- capacity and volume- time (hours, minutes, seconds)	Using Measures: <ul style="list-style-type: none">• choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels• compare and order lengths, mass, volume/capacity and record the results using >, < and =	Using Measures: <ul style="list-style-type: none">• measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)	Using Measures: <ul style="list-style-type: none">• Convert between different units of measure [for example, kilometre to metre; hour to minute]• estimate, compare and calculate different measures	Using Measures: <ul style="list-style-type: none">• convert between different units of metric measure• understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints• use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling	Using Measures: <ul style="list-style-type: none">• solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 d.p. where appropriate• use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to 3 d.p.• convert between miles and kilometres
			Money: <ul style="list-style-type: none">• recognise and know the value of different denominations of coins and notes	Money: <ul style="list-style-type: none">• 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	Money: <ul style="list-style-type: none">• add and subtract amounts of money to give change, using both £ and p in practical contexts	Money: <ul style="list-style-type: none">• estimate, compare and calculate different measures, including money in pounds and pence	Money: <ul style="list-style-type: none">• use all four operations to solve problems involving measure [for example, money]	
			Time: <ul style="list-style-type: none">• sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]• recognise and use language relating to dates, including days of the week, weeks, months and years• tell the time to the hour and half past the hour and draw the hands on a clock face to show these times	Time: <ul style="list-style-type: none">• compare and sequence intervals of time• tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times• know the number of minutes in an hour and the number of hours in a day	Time: <ul style="list-style-type: none">• 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 particular events or tasks]	Time: <ul style="list-style-type: none">• 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	Time: <ul style="list-style-type: none">• solve problems involving converting between units of time	Time: <ul style="list-style-type: none">• use, read, write and convert between standard units, converting measurements of time from a smaller unit of measure to a larger unit, and vice versa <p>Note – In the WRM schemes, time conversions are covered in Y5; the Y6 block concentrates on metric units</p>
					Perimeter, Area, Volume: <ul style="list-style-type: none">• measure the perimeter of simple 2-D shapes	Perimeter, Area, Volume: <ul style="list-style-type: none">• measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres• find the area of rectilinear shapes by counting squares	Perimeter, Area, Volume: <ul style="list-style-type: none">• 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 blocks to build cuboids] and capacity [for example, using water]	Perimeter, Area, Volume: <ul style="list-style-type: none">• recognise that shapes with the same areas can have different perimeters and vice versa• recognise when it is possible to use formulae for area and volume of shapes• calculate the area of parallelograms and triangles• calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm³) and cubic metres (m³), and extending to other units

Statistics	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
				Present and interpret data: <ul style="list-style-type: none">• interpret and construct simple pictograms, tally charts, block diagrams and simple tables	Present and interpret data: <ul style="list-style-type: none">• interpret and present data using bar charts, pictograms and tables	Present and interpret data: <ul style="list-style-type: none">• interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs	Present and interpret data: <ul style="list-style-type: none">• complete, read and interpret information in tables, including timetables	Present and interpret data: <ul style="list-style-type: none">• interpret and construct pie charts and line graphs and use these to solve problems
				Solve statistical problems: <ul style="list-style-type: none">• ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity• ask and answer questions about totalling and comparing categorical data	Solve statistical problems: <ul style="list-style-type: none">• solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables	Solve statistical problems: <ul style="list-style-type: none">• solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs	Solve statistical problems: <ul style="list-style-type: none">• solve comparison, sum and difference problems using information presented in a line graph	Solve statistical problems: <ul style="list-style-type: none">• calculate and interpret the mean as an average