



## Three Legged Cross First and Nursery School Progression of Skills and Knowledge for Mathematics

Number and Place Value - Counting				
EYFS	Year 1	Year 2	Year 3	Year 4
Counts correctly scattered objects, 10+ by moving them, keeping track of each one as it's moved. Know the total when asked.	Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number	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 backwards through zero to include negative numbers
Correctly counts backwards from 10.	Count, read and write numbers to 100 in numerals,		Find 10 or 100 more or less than a given number	Count in multiples of 6, 7, 9, 25 and 1000
To count on and back from a given number, not 1	Given a number, identify one more and one less Count in multiples of twos, fives and tens			Find 1000 more or less than a given number
Number and Place Value - Subitising				
EYFS	Year 1	Year 2	Year 3	Year 4
Can subitise to 10 by using what they know, such as two arrangements of 5.				
Number and Place Value - Comparing numbers				
EYFS	Year 1	Year 2	Year 3	Year 4
Can accurately compare via counting, but only when objects are about the same size & the groups are small (1 to about 5).	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

Can uses knowledge of counting number relationships to determine relative size and position of numbers up to about 5	Use ordinal numbers			Compare numbers with the same number of decimal places up to two decimal places
<b>Number and Place Value – Identifying, representing and estimating numbers</b>				
<b>EYFS</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>
Knows number combinations to totals of 5. Quickly names parts of any whole, or the whole given parts.  (Age 5+) Knows number combinations to totals of 7. Quickly names parts of any whole, or the whole given parts. May know doubles to 10, 5 and 5 is 10.	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
<b>Number and Place Value – Reading and writing numbers (including Roman Numerals)</b>				
<b>EYFS</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>
Reads numbers to 10	Read and write numbers to 100 in numerals and words.	Read and write numbers to at least 100 in numerals and in words	Read and write numbers up to 1000 in numerals and in words  Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks	Read Roman numerals to 100, I to C and know that over time, the numeral system changed to include the concept of zero and place value.
<b>Number and Place Value – Understanding place value</b>				

EYFS	Year 1	Year 2	Year 3	Year 4
	Recognise the place value of each digit in a two-digit number, tens, ones.	Confidently recognise the place value of each digit in a two-digit number, tens, ones	Recognise the place value of each digit in a three-digit number, hundreds, tens, ones	Recognise the place value of each digit in a four-digit number, thousands, hundreds, tens, and ones  Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as units, tenths and hundredths

**Number and Place Value – Rounding**

EYFS	Year 1	Year 2	Year 3	Year 4
				Round any number to the nearest 10, 100 or 1 000 Round decimals with one decimal place to the nearest whole number

**Number and Place Value – Problem solving**

EYFS	Year 1	Year 2	Year 3	Year 4
		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

**Addition and subtraction – number bonds**

EYFS	Year 1	Year 2	Year 3	Year 4
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Recall number bonds to 5 and begin to recall number bonds to 10.	Represent and use number bonds and related subtraction facts within 20.	Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.		
Addition and subtraction – mental calculations				
EYFS	Year 1	Year 2	Year 3	Year 4
Add one-digit numbers with manipulatives.	<p>Add and subtract numbers using concrete objects, pictorial representations, and mentally, including:</p> <ul style="list-style-type: none"> <li>a two-digit number and ones</li> <li>a two-digit number and tens</li> <li>two two-digit numbers</li> <li>adding three one-digit numbers</li> </ul>	<p>Confidently add and subtract numbers using concrete objects, pictorial representations, and mentally, including:</p> <ul style="list-style-type: none"> <li>a two-digit number and ones</li> <li>a two-digit number and tens</li> <li>two two-digit numbers</li> <li>adding three one-digit numbers</li> </ul>	<p>Add and subtract numbers mentally, including:</p> <ul style="list-style-type: none"> <li>a three-digit number and ones</li> <li>a three-digit number and tens</li> <li>a three-digit number and hundreds</li> </ul>	
Read + - and = signs	Read, write and interpret mathematical statements involving addition +, subtraction - and equals = signs	Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot		
Addition and subtraction – mental calculations				
EYFS	Year 1	Year 2	Year 3	Year 4
Read + - and = signs	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	Confidently 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

				subtraction where appropriate
Addition and subtraction – inverse operations, estimating and checking answers				
EYFS	Year 1	Year 2	Year 3	Year 4
		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
Addition and subtraction – problem solving				
EYFS	Year 1	Year 2	Year 3	Year 4
Solve real word problems up to 10	Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = -9$	Solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures; applying their increasing knowledge of mental and written methods	Solve 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

Multiplication and division- facts				
EYFS	Year 1	Year 2	Year 3	Year 4
Solidify counting to 20 Practise early doubling and counting in 2s	Count in multiples of twos, fives and tens	Introduce Time Table Rock Stars, TTRS Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward Recall and use multiplication and division facts for the 2, 5	Count from 0 in multiples of 4, 8, 50 and 100  Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables	Count in multiples of 6, 7, 9, 25 and 1000  Recall multiplication and division facts for multiplication tables up to $12 \times 12$

		and 10 multiplication tables, including recognising odd and even numbers	Introduce 6, 7, 9, 11, 12 multiplication tables	
<b>Multiplication and division- mental calculations</b>				
<b>EYFS</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>
		Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot be done in any order	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	Focus on speed of automatic recall of all known tables. 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 commutatively in mental calculations Statutory Multiplication Tables Check
<b>Multiplication and division - written calculations</b>				
<b>EYFS</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>
	Begin to calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication $\times$ , division $\div$ and equals = signs	Confidently calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication $\times$ , division $\div$ and equals = signs	Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods	Multiply two-digit and three-digit numbers by a one-digit number using formal written layout
<b>Multiplication and division - Properties of numbers; multiples, factors, primes, square and cube numbers</b>				

EYFS	Year 1	Year 2	Year 3	Year 4
				Continue to recognise and use factor pairs and commutatively in mental calculations
<b>Multiplication and division - Inverse operations, estimating and checking answers</b>				
EYFS	Year 1	Year 2	Year 3	Year 4
			Estimate the answer to a calculation and use inverse operations to check answers	Estimate and use inverse operations to check answers to a calculation
<b>Multiplication and division - Problem solving</b>				
EYFS	Year 1	Year 2	Year 3	Year 4
Solve problems involving halving and doubling.	Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher	Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts	Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects	Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems & harder correspondence problems such as n objects are connected to m objects

<b>Fractions – counting fractional steps</b>				
EYFS	Year 1	Year 2	Year 3	Year 4
		Count in fractions up to 10, starting from any number and using the $\frac{1}{2}$ and $\frac{2}{4}$ equivalence on the number line	Count up and down in tenths	Count up and down in hundredths
<b>Fractions – recognising fractions</b>				
EYFS	Year 1	Year 2	Year 3	Year 4

	Recognise, find and name a half as one of two equal parts of an object, shape or quantity Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity	Recognise, find, name and write fractions $\frac{1}{3}$ , $\frac{1}{4}$ , $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity	Recognise, find and write fractions of a discrete set of objects: unit fractions and non- unit fractions with small denominators. Recognise that tenths arise from dividing an object into 10 equal parts and in dividing one – digit numbers or quantities by 10. Recognise and use fractions as numbers: unit fractions and non- unit fractions with small denominators	Recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten
<b>Fractions – comparing fractions</b>				
<b>EYFS</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>
			Compare and order unit fractions, and fractions with the same denominators	
<b>Fractions – comparing decimals</b>				
<b>EYFS</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>
				Compare numbers with the same number of decimal places up to two decimal places.
<b>Fractions – rounding decimals</b>				
<b>EYFS</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>
				Round decimals with one decimal place to the nearest whole number
<b>Fractions – equivalence (including fractions, decimals and percentages)</b>				
<b>EYFS</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>



		Write simple fractions e.g. $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$	Recognise and show, using diagrams, equivalent fractions with small denominators	Recognise and show, using diagrams, families of common equivalent fractions Recognise and write decimal equivalents of any number of tenths or hundredths Recognise and write decimal equivalents to $\frac{1}{4}$ , $\frac{1}{2}$ , $\frac{3}{4}$
<b>Fractions –addition and subtraction of fractions</b>				
<b>EYFS</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>
			Add and subtract fractions with the same denominator within one whole (e.g. $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$ )	Add and subtract fractions with the same denominator
<b>Fractions - multiplication and division of decimals</b>				
<b>EYFS</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>
				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
<b>Fractions – problem solving</b>				
<b>EYFS</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>
			Solve problems that involve all of the above	Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-

				<p>unit fractions where the answer is a whole number</p> <p>Solve simple measure and money problems involving fractions and decimals to two decimal places.</p>
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Measurement – comparing and estimating				
EYFS	Year 1	Year 2	Year 3	Year 4
<p>Compare length – shorter / longer / same length</p> <p>Compare weight – heavy / light / balanced</p> <p>Compare capacity – full / nearly full / half full / nearly empty / empty</p>	<p>Compare, describe and solve practical problems for different areas of measurement.</p> <p>Lengths and heights: long/short, longer/shorter, tall/short, double/half</p> <p>Mass/weight: heavy/light, heavier than, lighter than</p> <p>Capacity and volume: Full/empty, more than, less than, half, half full, quarter</p> <p>Time: quicker, slower, earlier, later</p>	<p>Compare and order lengths, mass, volume/capacity and record the results using <math>&gt;</math>, <math>&lt;</math> and <math>=</math></p>	<p>Compare durations of events, for example to calculate the time taken by particular events or tasks</p>	<p>Estimate, compare and calculate different measures, including money in pounds and pence</p>
<p>Sequence a familiar routine.</p>	<p>Sequence events in chronological order using language: before and after; next; first; today; yesterday; tomorrow, morning; afternoon and evening</p>	<p>Compare and sequence intervals of time</p>	<p>Estimate and read time with increasing accuracy to the nearest minute, record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning,</p>	

			afternoon, noon and midnight	
Measurement - Measuring and calculating				
EYFS	Year 1	Year 2	Year 3	Year 4
Measure and order length, capacity, height	<p>Measure and begin to record the following: lengths and height; mass/weight; capacity and volume; time-hours, minutes, seconds</p> <p>Recognise and know the value of different denominations of coins and notes. Begin to use symbols for pounds (£) and pence (p).</p> <p>Find different combinations of coins that equal the same amounts of money</p> <p>Solve simple problems in a practical context involving addition and subtraction of money of the same unit.</p>	<p>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.</p> <p>Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value</p> <p>Confidently find different combinations of coins that equal the same amounts of money</p> <p>Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change</p>	<p>Measure, compare, add and subtract: lengths m/cm/mm; mass kg/g; volume/capacity l/ml.</p> <p>Measure the perimeter of simple 2D shapes</p> <p>Add and subtract amounts of money to give change, using both £ and p in practical contexts</p>	<p>Estimate, compare and calculate different measures, including money in pounds and pence</p> <p>Measure and calculate the perimeter of a rectilinear figure in centimetres and metres</p> <p>Find the area of rectilinear shapes by counting squares</p>
Measurement - telling the time				
EYFS	Year 1	Year 2	Year 3	Year 4

<p>Tell the time to hour and half past on an analogue clock</p> <p>Sequence familiar routines – bedtime, days of the week, months of the year, seasons</p>	<p>Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times</p> <p>Recognise and use language relating to dates, including days of the week, weeks, months and years</p>	<p>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</p> <p>Know the number of minutes in an hour and the number of hours in a day</p>	<p>Tell and write the time from an analogue clock, including using roman numerals from i to xii, and 12-hour and 24-hour clocks</p> <p>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</p>	<p>Read, write and convert time between analogue and digital 12- and 24-hour clocks</p> <p>Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days</p>
<b>Measurement - converting</b>				
<b>EYFS</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>
		<p>Know the number of minutes in an hour and the number of hours in a day.</p>	<p>Know the number of seconds in a minute and the number of days in each month, year and leap year</p>	<p>Convert between different units of measure e.g. kilometre to metre; hour to minute</p> <p>Read, write and convert time between analogue and digital 12 and 24-hour clocks</p> <p>Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days (appears also in telling the time)</p>

<b>Algebra – equations</b>
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EYFS	Year 1	Year 2	Year 3	Year 4
	Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$ Represent and use number bonds and related subtraction facts within 20	Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems. Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100	Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. Solve problems, including missing number problems, involving multiplication and division, including integer scaling	

#### Algebra – sequences

EYFS	Year 1	Year 2	Year 3	Year 4
	Sequence events in chronological order using language such as: before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening	Compare and sequence intervals of time Order and arrange combinations of mathematical objects in patterns		

#### Geometry – position and direction and movement

EYFS	Year 1	Year 2	Year 3	Year 4
	Describe position, direction and movement, including whole, 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-		Describe positions on a 2-D grid as coordinates in the first quadrant Describe movements between positions as translations of a given unit to the left/right and up/down

		quarter turns (clockwise and anti-clockwise)		Plot specified points and draw sides to complete a given polygon
Geometry – position and direction and pattern				
EYFS	Year 1	Year 2	Year 3	Year 4
Continue, copy and create repeating patterns – ABB, ABC, ABBC	Begin to order and arrange combinations of mathematical objects in patterns and sequences.	Confidently order and arrange combinations of mathematical objects in patterns and sequences.		

Geometry – properties of shape: identifying shapes and their properties				
EYFS	Year 1	Year 2	Year 3	Year 4
Select, rotate and manipulate shapes to develop spatial reasoning.  Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can.	Recognise and name common 2-D shapes, including: Rectangles, (including squares), circles and triangles  Recognise and name common 3-D shapes, including: Cuboids (including cubes), pyramids and spheres	Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line.  Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces Identify 2-D shapes on the surface of 3-D shapes, for example, a circle on a cylinder and a triangle on a pyramid		Identify lines of symmetry in 2-D shapes presented in different orientations.
Geometry – properties of shape: drawing and constructing				
EYFS	Year 1	Year 2	Year 3	Year 4

			Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them	Complete a simple symmetric figure with respect to a specific line of symmetry
<b>Geometry – properties of shape: comparing and classifying</b>				
<b>EYFS</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>
		Compare and sort common 2-D and 3-D shapes and everyday objects		Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes
<b>Geometry – properties of shape: angles</b>				
<b>EYFS</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>
			Recognise angles as a property of shape or a description of a turn Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; Identify whether angles are greater or less than right angle Identify horizontal and vertical lines and pairs of perpendicular and parallel lines	Identify acute and obtuse angles and compare and order angles up to two right angles by size

Statistics – Interpreting, constructing and presenting data				
EYFS	Year 1	Year 2	Year 3	Year 4
	Interpret simple pictograms	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
Statistics – solving problems				
EYFS	Year 1	Year 2	Year 3	Year 4
		Solve one-step and two-step questions: '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