

Subject: Mathematics

	Numbers and Counting	Shape, Space and Patterns	Measures
Nursery			
Autumn Term	<p>To that things exist, even when out of sight.</p> <p>To begin to develop counting-like behaviour, such as making sounds, pointing or saying some numbers in sequence.</p> <p>To count in everyday contexts, sometimes skipping numbers</p> <p>To count reliably to 5.</p> <p>To subitise numbers to 3.</p>	<p>To build with a range of resources.</p> <p>To select appropriate shapes for a purpose.</p> <p>To combine shapes to make new ones.</p> <p>To talk about shapes as I construct.</p> <p>To climb and squeeze myself into different types of spaces.</p> <p>To fit some pieces into an inset puzzle.</p> <p>To notice patterns.</p> <p>To talk about patterns in the environment.</p> <p>To arrange things in patterns.</p>	<p>To enjoy filling and emptying containers.</p> <p>To begin to develop simple ways of comparing objects.</p> <p>To begin to understand that things might happen 'now'.</p> <p>To begin to use vocabulary to describe a sequence of events using words such as 'first' or 'then'</p>
Spring Term	<p>To begin to make comparisons between quantities.</p> <p>To select a small number of objects from a group when asked</p> <p>To compare amounts, saying 'lots', 'more' or 'same'.</p> <p>To verbally rote count to 5</p> <p>To say one number for each item when counting.</p> <p>To understand the cardinal principle.</p> <p>To show finger numbers up to 5.</p> <p>To experiment with making marks to represent my mathematical thinking.</p>	<p>To talk about and explore 2D shapes.</p> <p>To understand positional language.</p> <p>To use positional language to describe the location of objects.</p> <p>To complete inset puzzles.</p> <p>To create ABAB patterns.</p>	<p>To compare sizes, lengths and weights using gesture and language</p> <p>To associate a sequence of actions with daily routines.</p>
Summer Term	<p>To link the numerals 1-5 to a quantity</p> <p>To verbally rote count to 10.</p> <p>To begin to understand the composition of numbers.</p> <p>To know the composition of numbers to 5.</p> <p>To can solve real world math problems with numbers to 5.</p> <p>To begin to record the numerals to 5.</p> <p>To compare quantities using the language more / fewer than.</p> <p>To understand the same.</p>	<p>To talk about and explore 3D shapes.</p> <p>To begin to use mathematical language to descried shapes.</p> <p>To describe a familiar route.</p> <p>To extend ABAB patterns.</p> <p>To spot and explain errors in patterns.</p>	<p>To compare objects according to their size, length, weight and capacity.</p>

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Reception			
Autumn Term	<p>To count objects, actions and sounds. To compare amounts. To explore the composition of numbers to 5. Numbers 1-3 - Counting, Comparing, Ordering, Subitising, Composition. Number 4 - Counting, Comparing, Ordering, Subitising, Composition, Sorting. Number 5 - Counting, Comparing, Ordering, Subitising, Composition, Sorting. To understand the 'one more than/one less than' relationship between consecutive numbers. To identify more, fewer, the same.</p>	<p>To investigate 2D shapes - Circles, Triangles, Squares, Rectangles. To investigate rotating shapes. To combine triangles, squares and rectangles to make different sized squares and rectangles. To use language to describe the position of one object in relation to another, e.g. between, in front, behind, etc. To use language to describe movement and journeys, e.g. over, under, through, To copy, continue and create ABAB patterns. To spot errors in ABAB patterns.</p>	<p>To compare Size, Mass, Capacity. To understand night and day. To use the language of time. To know the days of the week. To sequence familiar events.</p>
Spring Term	<p>To count objects, actions and sounds. To explore the composition of numbers to 10. Introduce 0. To compare Numbers to 5 - sharing, ordering, bonds to 5, missing numbers to 5. To understand the composition of 4 and 5. To identify more, fewer, the same. Numbers 6, 7, 8 - Counting, Comparing, Ordering, Subitising, Composition, Sorting. To investigate odd and even numbers - making pairs To combine two groups of objects. Numbers 9 and 10 - Counting, Comparing, Ordering, Subitising, Composition, Sorting. To investigate missing numbers within 10. To understand the 'one more than/one less than' relationship between consecutive numbers. To begin to recall number bonds for numbers 0-10.</p>	<p>To talk about, explore, sort and name 3D shapes. To explain similarities and differences. To make models with shapes. To explore repeating patterns, ABB, AAB, AABB, AABBB. To spot the error in patterns.</p>	<p>To compare mass and capacity. To compare length and height. To order and sequence familiar events. To use language of time. To order the days of the week. To investigate What can you do in one minute.</p>

Summer Term

To count beyond ten.
 To count on and back from different starting numbers.
 To order and identify missing numbers.
 To begin to understand the composition of numbers beyond 10 - Building teens numbers with tens and ones.
 To understand adding - Use first, then and now to create mathematical addition stories.
 To understand taking away - Use first, then and now to create mathematical subtraction stories.
 To understand doubling - Double sets of objects, Recall double facts.
 To understand sharing and grouping - Sharing objects into 2 groups, Sharing objects into 3 or 5 groups
 To investigate even and odd - Explore odd and even numbers through sharing in 2 groups.
 To use known number facts to solve problems.
 To take part in mathematical investigations, e.g. Finding all the possibilities.
 To create own number stories.

ELG - Number

- To have a deep understanding of number to 10, including the composition of each number.
- To subitise (recognise quantities without counting) up to 5.
- To automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.

ELG - Numerical Patterns

- To verbally count beyond 20, recognising the pattern of the counting system.
- To compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.
- To explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

To rotate shapes to fit into puzzles, etc.
 To match models/shapes pictures, e.g. multilink cube models and tangrams.
 To separate and recombine shapes.
 To use positional language to replicate, models, constructions, real places and places in stories.
 Look at different viewpoints.
 To copy, continue and create a range of patterns and symmetrical constructions.

Subject: Mathematics Key Stage 1

Number		Calculating	Measurement	Geometry
Year 1				
Autumn Term	<p>To read and write numbers from 1 to 20 in numerals and words.</p> <p>To count, read and write numbers to 100 in numerals.</p> <p><i>To practise ordinal numbers and solve simple concrete problems.</i></p> <p>To count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.</p>	<p>To identify one more and one less than a given number to 20.</p> <p>To read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs.</p> <p>To <i>memorise</i>, represent and use number bonds and related subtraction facts within 20.</p> <p><i>To realise the effect of adding or subtracting zero.</i></p>	<p>To measure and begin to record the following: lengths and heights, mass/weight, capacity and volume, time.</p> <p>To sequence events in chronological order using language.</p> <p>To recognise and use language relating to dates, including days of the week, weeks, months and years.</p>	<p>To recognise, <i>handle</i> and name common 2D and 3D shapes <i>in different orientations/sizes and relate everyday objects fluently.</i></p> <p><i>To recognise that rectangles, triangles, cuboids and pyramids are not always similar to each other.</i></p>
Spring Term	<p>To count, read and write numbers to 100 in numerals.</p> <p>To count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.</p>	<p>To add and subtract one-digit and two-digit numbers to 20, including zero.</p> <p>To <i>memorise</i>, represent and use number bonds and related subtraction facts within 20.</p> <p><i>To realise the effect of adding or subtracting zero.</i></p> <p>To <i>discuss</i> and solve one-step problems (<i>in familiar practical contexts</i>) that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems.</p> <p><i>To make connections between arrays, number patterns, and counting in twos, fives and tens.</i></p>	<p>To compare, describe and solve practical problems for: lengths and heights, mass/weight, capacity and volume, time.</p>	<p><i>To recognise and create repeating patterns with objects and with shapes.</i></p>

Summer Term	<p>To count, read and write numbers to 100 in numerals. To count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.</p> <p>To read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at yr 1.</p> <p><i>To count in multiples of twos, fives and tens from different multiples to develop their recognition of patterns in the number system, including varied and frequent practice through increasingly complex questions.</i></p>	<p>To 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.</p> <p>To recognise, find and name a half as one of two equal parts of a quantity <i>by solving problems</i>.</p> <p>To recognise, find and name a quarter as one of four equal parts of a quantity <i>by solving problems</i>.</p> <p><i>To connect halves and quarters to the equal sharing and grouping of sets of objects and to measures, as well as recognising and combining halves and quarters as parts of a whole.</i></p> <p><i>Through grouping and sharing small quantities, pupils begin to understand: multiplication and division; doubling numbers and quantities; and finding simple fractions of objects, numbers and quantities.</i></p>	<p>To 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>To recognise and know the value of different denominations of coins and notes.</p> <p>To describe position, direction and movement, including whole, half, quarter and three-quarter turns <i>in both directions and connect clockwise with the movement on a clock face.</i></p> <p><i>To use the language of position, direction and motion, including: left and right, top, middle and bottom, on top of, in front of, above, between, around, near, close and far, up and down, forwards and backwards, To move from using and comparing different types of quantities and measures using non-standard units, including discrete (for example, counting) and continuous (for example, liquid) measurement, to using manageable common standard units using measuring tools, such as a ruler, weighing scales and containers, inside and outside.</i></p>	<p>To recognise, find and name a half as one of two equal parts of an object or shape.</p> <p>To recognise, find and name a quarter as one of four equal parts of an object or shape.</p>
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Subject: Mathematics Key Stage 1

Number		Calculating	Measurement	Geometry/ Statistics
Year 2				
Autumn Term	<p>To read and write numbers to at least 100 in numerals and in words.</p> <p>To read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.</p> <p>To count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward.</p> <p>To compare and order numbers from 0 up to 100; use <, > and = signs.</p> <p>To recognise the place value of each digit in a two-digit number (tens, ones) to become fluent and apply their knowledge of numbers to reason with, discuss and solve problems.</p> <p>To begin to understand zero as a place holder.</p> <p>To use place value and number facts to solve related problems to develop fluency.</p> <p>To recognise odd and even numbers.</p>	<p>To recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships.</p> <p>To calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs.</p> <p>To begin to use other multiplication tables and recall multiplication facts, including using related division facts to perform written and mental calculations.</p> <p>To use a variety of language to describe multiplication and division.</p>	<p>To become fluent in counting and recognising coins.</p> <p>To recognise and use symbols for pounds (£) and pence (p) accurately, recording pounds and pence separately; combine amounts to make a particular value.</p> <p>To find and use different combinations of coins that equal the same amounts of money.</p> <p>To compare measures including simple multiples such as 'half as high'; 'twice as wide'.</p>	<p>Pupils read and write names for shapes that are appropriate for their word reading and spelling.</p> <p>To handle, identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line.</p> <p>To handle, identify and describe the properties of 3D shapes, including the number of edges, vertices and faces.</p> <p>To identify 2D shapes on the surface of 3D shapes.</p> <p>To identify, compare and sort common 2D and 3D shapes and everyday objects on the basis of their properties and use vocabulary precisely.</p> <p>To record, interpret, collate, organise and compare information.</p> <p>To interpret and construct simple pictograms, tally charts, block diagrams and simple tables (e.g. many-to-one correspondence in pictograms with simple ratios 2, 5, 10 scales).</p> <p>To ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity.</p> <p>To ask and answer questions about totalling and comparing categorical data.</p>

Spring Term

To read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

To recall and use addition and subtraction facts to 20 *to become fluent in deriving associative facts* and derive and use related facts up to 100. *To extend the language of addition and subtraction to include sum and difference.*

To show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.

To add and subtract numbers using an efficient strategy, explaining their method verbally using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones, a two-digit number and tens, two two-digit numbers, add three one-digit numbers.

To recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.

To begin to relate multiplication and division facts to fractions and measures

To connect the 10 multiplication table to place value, and the 5 multiplication table to the divisions on the clock face.

To begin to record addition and subtraction in columns to support place value and prepare for formal written methods with larger numbers.

To 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 method.

To solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.

To choose and use appropriate standard units *with increasing accuracy using their knowledge of the number system* 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.

To use the appropriate language and record using standard abbreviations.

To compare and order lengths, mass, volume/capacity and record the results using >, < and =.

To compare measures including simple multiples such as 'half as high'; 'twice as wide'.

To read, tell and write the time to five minutes, including quarter past/to the hour/half hour and draw the hands on a clock face to show these times.

To become fluent in telling the time on analogue clocks and recording it.

To know the number of minutes in an hour and the number of hours in a day.

To order and arrange combinations of mathematical objects and *shapes, including those in different orientations*, in patterns and sequences.

To compare and sequence intervals of time.

To record, interpret, collate, organise and compare information.

To interpret and construct simple pictograms, tally charts, block diagrams and simple tables

To ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity.

To ask and answer questions about totalling and comparing categorical data.

<p style="text-align: center;">Summer Term</p>	<p>To read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1. <i>To 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.</i></p> <p>To recognise, find, name, identify and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$ of a length, number, shape, set of objects or quantity and know that all parts must be equal parts of the whole. <i>To connect unit fractions to equal sharing and grouping, to numbers when they can be calculated, and to measures, finding fractions of lengths, quantities, sets of objects or shapes. They meet $\frac{3}{4}$ as the first example of a non-unit fraction.</i></p> <p>To write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence $\frac{2}{4}$ and $\frac{1}{2}$.</p>	<p>To show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot, <i>to develop multiplicative reasoning.</i> <i>To use a variety of language to describe multiplication and division.</i></p> <p>To count from 0 in multiples of 4, 8, 50 and 100.</p> <p>To recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables and use them to solve simple problems, demonstrating an understanding of commutativity as necessary. <i>To begin to use other multiplication tables and recall multiplication facts, including using related division facts to perform written and mental calculations.</i></p> <p>To solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.</p>	<p>To choose and use appropriate standard units <i>with increasing accuracy using their knowledge of the number system</i> 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. <i>To compare measures including simple multiples such as 'half as high'; 'twice as wide'.</i></p> <p>To use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anticlockwise).</p>	<p><i>To record, interpret, collate, organise and compare information.</i></p> <p>To interpret and construct simple pictograms, tally charts, block diagrams and simple tables (<i>e.g. many-to-one correspondence in pictograms with simple ratios 2, 5, 10 scales</i>).</p> <p>To ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity.</p> <p>To ask and answer questions about totalling and comparing categorical data.</p>
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