

Early Years - Nursery	
Number	Shape, space and measure
<p>0-11 months:</p> <p>Notices changes in number of objects/images or sounds in group of up to 3.</p>	<p>0-11 months:</p> <ul style="list-style-type: none"> <li>• <i>Babies' early awareness of shape, space and measure grows from their sensory awareness and opportunities to observe objects and their movements, and to play and explore.</i></li> </ul>
<p>8-20 months:</p> <ul style="list-style-type: none"> <li>• Develops an awareness of number names through their enjoyment of action rhymes and songs that relate to their experience of numbers.</li> <li>• Has some understanding that things exist, even when out of sight.</li> </ul>	<p>8-20 months:</p> <ul style="list-style-type: none"> <li>• Recognises big things and small things in meaningful contexts.</li> <li>• Gets to know and enjoy daily routines, such as getting-up time, mealtimes, nappy time, and bedtime.</li> </ul>
<p>16-26 months:</p> <ul style="list-style-type: none"> <li>• Knows that things exist, even when out of sight.</li> <li>• Beginning to organise and categorise objects, e.g. putting all the teddy bears together or teddies and cars in separate piles.</li> <li>• Says some counting words randomly.</li> </ul>	<p>16-26 months:</p> <ul style="list-style-type: none"> <li>• Attempts, sometimes successfully, to fit shapes into spaces on inset boards or jigsaw puzzles.</li> <li>• Uses blocks to create their own simple structures and arrangements.</li> <li>• Enjoys filling and emptying containers.</li> <li>• Associates a sequence of actions with daily routines.</li> <li>• Beginning to understand that things might happen 'now'.</li> </ul>
<p>22-36 months:</p> <ul style="list-style-type: none"> <li>• Selects a small number of objects from a group when asked, for example, <i>'please give me one'</i>, <i>'please give me two'</i>.</li> <li>• Recites some number names in sequence.</li> <li>• Creates and experiments with symbols and marks representing ideas of number.</li> <li>• Begins to make comparisons between quantities.</li> <li>• Uses some language of quantities, such as <i>'more'</i> and <i>'a lot'</i>.</li> <li>• Knows that a group of things changes in quantity when something is added or taken away.</li> <li>• Uses some number names and number language spontaneously.</li> <li>• Uses some number names accurately in play.</li> <li>• Recites numbers in order to 10.</li> <li>• Knows that numbers identify how many objects are in a set.</li> </ul>	<p>22-36 months:</p> <ul style="list-style-type: none"> <li>• Notices simple shapes and patterns in pictures.</li> <li>• Beginning to categorise objects according to properties such as shape or size.</li> <li>• Begins to use the language of size.</li> <li>• Understands some talk about immediate past and future, e.g. <ul style="list-style-type: none"> <li>○ <i>'before'</i>, <i>'later'</i> or <i>'soon'</i>.</li> </ul> </li> <li>• Anticipates specific time-based events such as mealtimes or home time.</li> </ul>

<ul style="list-style-type: none"> <li>• Beginning to represent numbers using fingers, marks on paper or pictures.</li> <li>• Sometimes matches numeral and quantity correctly.</li> </ul>	
<p>30-50 months:</p> <ul style="list-style-type: none"> <li>• •Uses some number names and number language spontaneously.</li> <li>• •Uses some number names accurately in play.</li> <li>• •Recites numbers in order to 10.</li> <li>• •Knows that numbers identify how many objects are in a set.</li> <li>• •Beginning to represent numbers using fingers, marks on paper or pictures. •Sometimes matches numeral and quantity correctly.</li> <li>• •Shows curiosity about numbers by offering comments or asking questions. •Compares two groups of objects, saying when they have the same number. •Shows an interest in number problems.</li> <li>• •Separates a group of three or four objects in different ways, beginning to recognise that the total is still the same.</li> <li>• •Shows an interest in numerals in the environment.</li> <li>• •Shows an interest in representing numbers.</li> <li>• •Realises not only objects, but anything can be counted, including steps, claps or jumps.</li> </ul>	<p>30-50 months:</p> <ul style="list-style-type: none"> <li>• Shows an interest in shape and space by playing with shapes or making arrangements with objects.</li> <li>• Shows awareness of similarities of shapes in the environment.</li> <li>• Uses positional language.</li> <li>• Shows interest in shape by sustained construction activity or by talking about shapes or arrangements.</li> <li>• Shows interest in shapes in the environment.</li> <li>• Uses shapes appropriately for tasks. Beginning to talk about the shapes of everyday objects, e.g. <i>'round'</i> and <i>'tall'</i>.</li> </ul>

Early Years Reception	
Number	Shape, space and measure
<p>40-60 Months:</p> <ul style="list-style-type: none"> <li>• Recognises numerals 1 to 5.</li> <li>• Counts up to three or four objects by saying one number name for each item.</li> <li>• Counts actions or objects which cannot be moved.</li> <li>• Counts objects to 10, and beginning to count beyond 10.</li> <li>• Counts out up to six objects from a larger group.</li> <li>• Selects the correct numeral to represent 1 to 5, then 1 to 10 objects.</li> <li>• Counts an irregular arrangement of up to ten objects.</li> <li>• Estimates how many objects they can see and checks by counting them.</li> <li>• Uses the language of 'more' and 'fewer' to compare two sets of objects.</li> <li>• Finds the total number of items in two groups by counting all of them.</li> <li>• Says the number that is one more than a given number.</li> <li>• Finds one more or one less from a group of up to five objects, then ten objects.</li> <li>• In practical activities and discussion, beginning to use the vocabulary involved in adding and subtracting.</li> <li>• Records, using marks that they can interpret and explain.</li> <li>• Begins to identify own mathematical problems based on own interests and fascinations.</li> </ul>	<p>40–60 months:</p> <ul style="list-style-type: none"> <li>• Beginning to use mathematical names for 'solid' 3D shapes and 'flat' 2D shapes, and mathematical terms to describe shapes.</li> <li>• Selects a particular named shape.</li> <li>• Can describe their relative position such as '<i>behind</i>' or <ul style="list-style-type: none"> <li>○ '<i>next to</i>'.</li> </ul> </li> <li>• Orders two or three items by length or height.</li> <li>• Orders two items by weight or capacity.</li> <li>• Uses familiar objects and common shapes to create and recreate patterns and build models.</li> <li>• Uses everyday language related to time.</li> <li>• Beginning to use everyday language related to money.</li> <li>• Orders and sequences familiar events.</li> <li>• Measures short periods of time in simple ways.</li> </ul>
<p><b>Early Learning Goal</b></p> <ul style="list-style-type: none"> <li>• Children count reliably with numbers from one to 20, place them in order and say which number is one more or one less than a given number. Using quantities and objects, they add and subtract two single-digit numbers and count on or back to find the answer. They solve problems, including doubling, halving and sharing.</li> </ul>	<p><b>Early Learning Goal</b></p> <ul style="list-style-type: none"> <li>• Children use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems. They recognise, create and describe patterns. They explore characteristics of everyday objects and shapes and use mathematical language to describe them.</li> </ul>

Early Learning Goal: Exceeding

- Children estimate a number of objects and check quantities by counting up to 20. They solve practical problems that involve combining two groups of 2, 5 or 10, or sharing into equal groups.

Early Learning Goal: Exceeding

- Children estimate, measure, weigh and compare and order objects. They talk about properties, position and time.

Year 1	
<p>Place Value</p> <ul style="list-style-type: none"> <li>To count to and across 100 forwards and backwards from any given number</li> <li>To count, read and write numbers to 100 in numerals</li> <li>To count in multiples of twos, fives and tens</li> <li>To identify one more/one less than a given number</li> <li>To use language of: equal to, more than, less than (fewer), most, least</li> <li>To recognise odd and even numbers</li> <li>To read and write numbers from 1 to 20 in digits and words</li> </ul>	<p>Addition and Subtraction</p> <ul style="list-style-type: none"> <li>Read, write and interpret mathematical statements involving (+), subtraction (-), and equals (=) signs</li> <li>Use number bonds and related subtraction facts</li> <li>Add and subtract one-digit and two-digit numbers to 20, including zero</li> <li>Solve simple one-step problems involving multiplication and division, calculating the answer using concrete objects and pictorial representations, and missing number problems</li> </ul>
<p>Multiplication and division</p> <ul style="list-style-type: none"> <li>Solve simple one-step problems involving multiplication and division using concrete objects and arrays and teacher support</li> <li>Group and share small quantities</li> <li>Doubling numbers and quantities and finding simple fractions of objects</li> </ul>	<p>Fractions</p> <ul style="list-style-type: none"> <li>Recognise, find and name a half as one of two-equal parts of an object, shape or quantity</li> <li>Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity</li> </ul>
<p>Measures</p> <ol style="list-style-type: none"> <li>Compare describe and solve practical problems for; <ul style="list-style-type: none"> <li>Lengths of heights (eg; long/short, heavier than, lighter than)</li> <li>Mass or weight (eg; heavy/light, heavier than, lighter than)</li> <li>Capacity/volume (full/empty, more than, less than, quarter)</li> <li>Time (quicker, slower, earlier, later)</li> </ul> </li> <li>Measure and begin to record the following: <ul style="list-style-type: none"> <li>Lengths and heights</li> <li>Mass/weight</li> <li>Capacity and volume</li> <li>Time (hours, minutes, seconds)</li> </ul> </li> <li>Recognise and know the value of different denominations of coins and notes</li> <li>Sequence events in chronological order using language such as: before, next, first, tomorrow, yesterday</li> <li>Recognise and use language relating to dates, including days of the week, weeks, months and years</li> <li>Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times</li> </ol>	<p>Geometry: properties of shapes</p> <ol style="list-style-type: none"> <li>Recognise and name common 2-D and 3-D shapes in different orientations and sizes</li> </ol> <p>Geometry: position, direction, motion</p> <ol style="list-style-type: none"> <li>Order and arrange combinations of objects and shapes in patterns</li> <li>Describe position, directions and movements, including half, quarter and three-quarter turns</li> </ol>

Year 2	
<p>Number and place value</p> <ul style="list-style-type: none"> <li>Count in steps of 2, 3 and 5 from 0, and count in tens from any number Forward and backward</li> <li>Recognise place value of each digit in a two-digit number</li> <li>Identify, represent and estimate numbers using different representations, including number lines</li> </ul> <p>compare and order numbers from 0 up to 100; use &lt;, &gt; and = signs read and write numbers to at least 100 in numerals and in words use place value and number facts to solve problems</p>	<p>Addition and subtraction</p> <ul style="list-style-type: none"> <li>Solve simple one step problems with addition and subtraction</li> <li>Use concrete objects and pictorial representations, including those involving numbers, quantities and measures</li> <li>Apply their increasing knowledge of mental and written methods</li> <li>Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100</li> <li>Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit numbers and ones, a two-digit number and tens, two two-digit numbers, adding three one digit numbers</li> <li>Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot</li> <li>Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems</li> </ul>
<p>Multiplication and division</p> <ul style="list-style-type: none"> <li>Recall and use multiplication and division facts for the 2, 5 and 10 times tables, including recognising odd and even numbers</li> <li>Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication, division and equals signs</li> <li>Show multiplication of two numbers can be done in any order and division of one number by another cannot</li> <li>Solve one-step problems involving multiplication and division, using materials and division facts, including problems in context</li> </ul>	<p>Fractions</p> <ul style="list-style-type: none"> <li>Recognise, find, name and write fractions <math>\frac{1}{3}</math>, <math>\frac{1}{4}</math>, <math>\frac{2}{4}</math>, and <math>\frac{3}{4}</math> of a length, shape, set of objects or quantity</li> <li>Write simple fractions e.g. <math>\frac{1}{2}</math> of 6 = 3 and recognise the equivalence of two quarters and one half.</li> </ul>
<p>Measures</p> <ul style="list-style-type: none"> <li>Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (oC); capacity (l/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels</li> <li>Compare and order lengths, mass, volume/capacity and record the results using &lt;, &gt; and =</li> <li>Read relevant scales to the nearest numbered unit</li> <li>Recognise and use symbols for pounds and pence; combine amounts to</li> </ul>	<p>Geometry: properties of shapes</p> <ul style="list-style-type: none"> <li>Identify and describe the properties of 2-D shapes, including the number of sides and symmetry in a vertical line</li> <li>Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces</li> <li>Identify 2-D shapes on the surface of 3-D shapes</li> <li>Compare and sort common 2-D and 3-D shapes and everyday objects</li> </ul>

<p>make a particular value and match different combinations of coins to equal the same amounts of money; add and subtract money of the same unit including giving change</p> <ul style="list-style-type: none"> <li>• Solve simple problems in a practical context involving addition and subtraction of money</li> <li>• Compare and sequence intervals of time</li> <li>• 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</li> </ul>	
<p>Geometry: position, direction, motion</p> <ul style="list-style-type: none"> <li>• Order and arrange combinations of mathematical objects in patterns</li> <li>• Use mathematical vocabulary to describe position, direction and movement, including distinguishing between rotation as a turn and in terms of right angles for quarter turns (clockwise and anti-clockwise), and movement in a straight line</li> <li>• Work with patterns of shapes, including those in different orientations</li> </ul>	<p>Data</p> <ul style="list-style-type: none"> <li>• Interpret and construct simple pictograms, tally charts, block diagrams and simple tables</li> <li>• Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity</li> <li>• Ask and answer questions about totalling and compare categorical data</li> </ul>

Year 3	
<p><b>Number and place value</b></p> <ul style="list-style-type: none"> <li>To count in multiples of 4, 8, 50, and 100; find 10 or 100 more or less than a given number</li> <li>To recognise the place value of each digit in a 3-digit number</li> <li>To compare and order numbers up to 1000</li> <li>To identify, represent and estimate numbers using different representations</li> <li>To read and write numbers up to 1000 in numerals and words</li> <li>To solve number problems and practical problems involving these ideas</li> </ul>	<p><b>Addition and subtraction</b></p> <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> <li>Add and subtract numbers with up to three digits, using formal written methods of column addition and subtraction</li> <li>Estimate the answer to a calculation and use inverse operations to check answers</li> <li>Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction</li> </ul>
<p><b>Multiplication and division</b></p> <ul style="list-style-type: none"> <li>To recall and use multiplication and division facts for the 3, 4 and 8 times tables</li> <li>To write and calculate mathematical statements for multiplication and division using the x table that they know, including for 2-digit numbers x 1-digit numbers, using mental and progressing to formal written methods</li> <li>To 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</li> </ul>	<p><b>Fractions</b></p> <ul style="list-style-type: none"> <li>Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal part and in dividing one-digit numbers or quantities by 10</li> <li>Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators</li> <li>Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators</li> <li>Recognise and show, using diagrams, equivalent fractions with small denominators</li> <li>+ and – fraction with the same denominator within one whole</li> <li>Compare and order unit fractions, and fractions with the same denominators</li> <li>solve problems that involve all the above</li> </ul>
<p><b>Measurement</b></p> <ul style="list-style-type: none"> <li>Measure and compare, add and subtract: lengths (m/cm/mm); mass (Kg/g); volume/capacity; (l/ml)</li> <li>Measure the perimeter of simple 2-D shapes</li> <li>+ and – amounts of money to give change, using both £ and p in practical contexts</li> <li>Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 24-hour clocks</li> <li>Estimate and read time with increasing accuracy to the nearest</li> </ul>	<p><b>Geometry</b></p> <ul style="list-style-type: none"> <li>Draw 2-D shapes and make 3-D shapes using modelling materials;</li> <li>recognise 3-D shapes in different orientations and describe them</li> <li>Recognise angles as a property of shape or a description of a turn</li> <li>Identify right angles, recognise that 2 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</li> <li>Identify horizontal and vertical lines and pairs of perpendicular</li> </ul>



<p>minute; record and compare time in terms of seconds, minutes, and hours; use vocab such as o'clock, a.m./p.m., morning, afternoon, noon and midnight</p> <ul style="list-style-type: none"><li>• Know the number of seconds in a minute and the number of days in each month, year and leap year</li></ul> <p>Compare durations of events (calculate the time taken by particular events or tasks)</p>	<p>and parallel lines</p>
<p><b>Statistics</b></p> <ul style="list-style-type: none"><li>• To interpret and present data using bar charts, pictograms and tables</li><li>• 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</li></ul>	

Year 4	
<p>Number and place value</p> <ul style="list-style-type: none"> <li>Count in multiples of 6,7,9,25 and 1000</li> <li>Find 1000 more or less than a given number</li> <li>Count backwards through zero to include negative numbers</li> <li>Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens and ones)</li> <li>Order and compare numbers beyond 1000</li> <li>Identify, represent and estimate numbers using different representations</li> <li>Round any number to the nearest 10, 100 or 1000</li> <li>Solve number and practical problems that involve all of the above with increasingly large positive numbers</li> <li>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</li> </ul>	<p>Number – multiplication and division</p> <ul style="list-style-type: none"> <li>Recall multiplication and division facts for multiplication tables up to 12 x 12</li> <li>Use place value, known and derived fact to multiply and divide mentally, including multiplying by 0 and 1; multiplying together three numbers</li> <li>Recognise and use factor pairs and commutativity in mental calculations</li> <li>Multiply two-digit and three-digit numbers by a one digit number using formal written layout</li> <li>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</li> </ul>
<p>Number – fractions (including decimals)</p> <ul style="list-style-type: none"> <li>Recognise and shown using diagrams, families of common equivalent fractions</li> <li>Count up and down in hundredths, recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten</li> <li>Solve problems by involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number</li> <li>Add and subtracts fractions with the same denominator</li> <li>Recognise and write decimal equivalents to one quarter, one half and three quarters</li> <li>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</li> <li>Round decimals with one decimal place to the nearest whole number</li> <li>Compare numbers with the same number of decimal places up to two decimal places</li> <li>Solve simple measure and money problems involving fractions and decimals to two decimal places</li> </ul>	<p>Measurement</p> <ul style="list-style-type: none"> <li>Convert between different units of measure (for example; kilometres to metre; hour to minute)</li> <li>Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres</li> <li>Find the area of rectilinear shapes by counting squares</li> <li>Estimate, compare and calculate different measures, including money in pounds and pence</li> </ul>
<p>Geometry – properties of shape</p> <ul style="list-style-type: none"> <li>Compare and classify geometric shapes, including quadrilaterals and triangles; isosceles, equilateral, scalene based on their properties</li> </ul>	<p>Geometry – position and direction</p> <ul style="list-style-type: none"> <li>Describe positions on a 2-D grid as coordinates in the first quadrant</li> <li>Describe movements between positions as translations of a given</li> </ul>

<p>and size</p> <ul style="list-style-type: none"><li>• Identify acute and obtuse angles and compare and order angles up to two right angles by size</li><li>• Identify lines of symmetry in 2-D shapes presented in different orientations</li><li>• Complete a simple symmetric figure with respect to a specific line of symmetry</li></ul>	<p>unit to the left/right and up/down</p> <ul style="list-style-type: none"><li>• Plot specified points and draw sides to complete a given polygon</li><li>• Draw a pair of axis on one quadrant, with equal scales and integer labels.</li></ul>

Year 5

Number – number and place value

- Read, write and order and compare numbers to at least 1 000 000  
And determine the value of each digit
- Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000
- interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero
- round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000
- solve number problems and practical problems that involve all of the above
- read Roman numerals to 1000 (M) and recognise years written in Roman numerals

Number – multiplication and division

- 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
- 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
- Recognise and use square numbers and cube number and the notation for squared and cubed solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes
- Solve problems involving addition and subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign
- Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates