

	Three and Four Year Olds	Reception	Year 1	Year 2	Year 3	Year 4
<b>Mathematical Vocabulary</b>	Use a wider range of vocabulary.	Learn new vocabulary. Use new vocabulary throughout the day. Participate in small group, class and one-to-one discussions.	To read and spell mathematical vocabulary at a level consistent with their increasing word reading and spelling knowledge at year 1	To read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.	To read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.	To read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.
<b>Reading and Writing Number</b>	Links numerals to amounts up to 5. Experiment with their own symbols and marks as well as numbers.	Link the number symbol (numeral) with its cardinal number value.				
<b>Counting</b>	<p>Recites numbers beyond 5, Says 1 number for each object in order up to 5.</p> <p>Counts objects to 5 and understands last number reached when counting a small set of objects tells you how many there are in total.</p> <p>Compare quantities using 'more than', 'fewer than'.</p>	<p>Count objects, actions and sounds count beyond 10.</p> <p>Verbally count beyond 20, recognising the pattern of the counting system.</p> <p>Compare numbers.</p> <p>Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.</p>	<p>Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.</p> <p>Count, read and write numbers to 100 in numerals, count in multiples of twos, fives and tens.</p>	<p>Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward</p>	<p>Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number.</p>	<p>Count in multiples of 6, 7, 9, 25 and 1000</p> <p>Find 1000 more or less than a given number</p> <p>Count backwards through zero to include negative numbers</p>
<b>Place Value</b>		<p>Understand the 'one more than/one less than' relationship between consecutive numbers.</p> <p>Explore the composition of numbers to 10.</p> <p>Have a deep understanding of numbers to 10, including the composition of each number.</p>		<p>Recognise the place value of each digit in a two-digit number</p> <p>Compare and order numbers from 0 up to 100; use &lt;, &gt; and = signs</p>	<p>Recognise the place value of each digit in a three-digit number</p> <p>Compare and order numbers up to 1000</p>	<p>Recognise the place value of each digit in a four-digit number</p> <p>Order and compare numbers beyond 1000</p> <p>Round any number to the nearest 10, 100 or 1000</p>
<b>Representing Number</b>	<p>Subitise up to 3.</p> <p>Link numerals to amount up to 5.</p> <p>Can show finger numbers up to 5.</p>	<p>Subitise up to 5.</p> <p>Link the number symbol (numeral) with its cardinal number value.</p>	<p>Identify and represent numbers using objects and pictorial representations including the number line &amp; us language of: equal to, more than, less than (fewer), most, least.</p> <p>Read and write numbers from 1-20 in numerals and words.</p> <p>Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals</p>	<p>Identify, represent and estimate numbers using different representations, including the number line</p> <p>Read and write numbers to at least 100 in numerals and in words</p>	<p>Identify, represent and estimate numbers using different representations</p> <p>Read and write numbers up to 1000 in numerals and in words</p>	<p>Identify, represent and estimate numbers using different representations</p> <p>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</p>

<b>Number Facts (+/-)</b>			Given a number, identify one more and one less Represent and use number bonds and related subtraction facts within 20	Use place value and number facts to solve problems Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100		
<b>Mental (+/-)</b>		Automatically recall number bonds up to 5 (including subtraction facts) and some to 10, including double facts.	Add and subtract one-digit and two-digit numbers to 20, including zero	Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: TU+U, TU+T, TU+TU and U+U+U Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot	Add and subtract numbers mentally, including: HTU+U, HTU+T and HTU+H	
<b>Written (+/-)</b>					Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction	Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate
<b>Problems</b>	Solve real world mathematical problems with numbers up to 5.	Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed evenly.	Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$ .	Solve problems with addition and subtraction, using concrete, pictorial and abstract representations 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 Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction	Estimate and use inverse operations to check answers to a calculation Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why
<b>Number Facts (x/÷)</b>				Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers	Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables	Recall multiplication and division facts for multiplication tables up to 12 x 12
<b>Mental (x/÷)</b>				Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication ( $\hat{A}$ ), division ( $\hat{A}$ ) and equals (=) signs Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot	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 methods	Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers Recognise and use factor pairs and commutativity in mental calculations
<b>Written (x/÷)</b>					Progress to formal written methods calculations as above	Multiply two-digit and three-digit numbers by a one-digit number using formal written layout
<b>Problems (x/÷)</b>			Solve one-step problems involving	Solve problems involving	Solve problems, including missing	Solve problems involving multiplying

			multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.	multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts	number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.	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
<b>Recognising Fractions</b>			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 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
<b>Comparing Fractions</b>					Compare and order unit fractions, and fractions with the same denominators Recognise and show, using diagrams, equivalent fractions with small denominators	Recognise and show, using diagrams, families of common equivalent fractions
<b>Finding Fractions of quantities</b>					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	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
<b>Fraction Calculations</b>				Write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$ .	Add and subtract fractions with the same denominator within one whole [for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$ ]	Add and subtract fractions with the same denominator
<b>Decimals as Fractional Amounts</b>						Recognise and write decimal equivalents of any number of tenths or hundredths Recognise and write decimal equivalents to $\frac{1}{4}$ , $\frac{1}{2}$ and $\frac{3}{4}$ 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>Ordering Decimals</b>						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

<b>Fraction Problems</b>					Solve problems using all fraction knowledge	Solve simple measure and money problems involving fractions and decimals to two decimal places
<b>Measures</b>	Make comparisons between objects relating to size, length, weight and capacity.	Can compare length, weight and capacity.	Compare, describe and solve practical problems for: length/height, weight/mass, capacity/volume & time Measure and begin to record length/height, weight/mass, capacity/volume & time	Choose and use appropriate standard units to estimate and measure length/height (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 =	Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)	Convert between different units of measure Estimate, compare and calculate different measures, including money in pounds and pence
<b>Mensuration</b>					Measure the perimeter of simple 2-D shapes	Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres find the area of rectilinear shapes by counting squares
<b>Shape</b>	Talk about and explore 2D and 3D shapes using informal language.  Select shapes appropriately  Combine shapes to make new ones.	Select, rotate and manipulate shapes in order to develop spatial reasoning skills. Compose and decompose shapes so that children can recognise a shape can have other shapes within it, just as numbers can.	To recognise, handle and name common 2D and 3D shapes in different orientations/sizes and relate everyday objects fluently To recognise that rectangles, triangles, cuboids and pyramids are not always similar to each other.  To identify, compare and sort common 2D and 3D shapes and everyday objects on the basis of their properties and use vocabulary precisely.	Pupils read and write names for shapes that are appropriate for their word reading and spelling.  To handle, identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line.  To handle, identify and describe the properties of 3D shapes, including the number of edges, vertices and faces.  To identify 2D shapes on the surface of 3D shapes.	To describe the properties of 2D and 3D shapes using accurate language. To extend knowledge of the properties of shapes is extended at this stage to symmetrical and non-symmetrical polygon and polyhedron. To recognise 3D shapes in different orientations and describe them.	To identify lines of symmetry in 2D shapes presented in different orientations.  To recognise line symmetry in a variety of diagrams, including where the line of symmetry does not dissect the original shape.  To compare lengths and angles to decide if a polygon is regular or irregular.  To compare and classify geometric shapes, including different quadrilaterals and triangles, based on their properties and sizes.
<b>Drawing and Constructing Shape</b>					To connect decimals and rounding to drawing and measuring straight lines in centimetres, in a variety of contexts. To identify horizontal and vertical lines and pairs of perpendicular and parallel lines. To draw 2D shapes and make 3D shapes using modelling materials.	To draw with increasing accuracy and develop mathematical reasoning to analyse shapes and their properties and confidently describe the relationships between them. To complete a simple symmetric figure with respect to a specific line of symmetry.
<b>Angles</b>					To recognise angles as a property of shape or a description of a turn. To identify right angles, recognise that two right angles make a half-turn, three makes three quarters of a turn and four a complete turn	To identify acute and obtuse angles and compare and order angles up to two right angles by size in preparation for using a protractor.

					To identify whether angles are greater than or less than a right angle.	
<b>Position and Direction</b>	Understand positional language Can describe a familiar route.	<i>UW Draw information from a map.</i>	To describe position, direction and movement, including whole, half, quarter and three-quarter turns in both directions and connect clockwise with the movement on a clock face. 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, inside and outside.	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).		To describe positions on a 2D grid as coordinates in the first quadrant. To draw a pair of axes in one quadrant, with equal scales and integer labels. To read, write and use pairs of coordinates, including using coordinate plotting ICT tools. To plot specified points and draw sides to complete a given polygon. To describe movements between positions as translations of a given unit to the left/right and up/down.
<b>Patterns</b>	Talk about and identify patterns around them. Extend ABAB patterns. Notice and correct an error in a repeating pattern.	Continue, copy and create repeating patterns.		To order and arrange combinations of mathematical objects and shapes, including those in different orientations, in patterns and sequences.		
<b>Time</b>	Begin to describe a sequence of events, real or fictional, using words, such as 'first' and 'then'.		To sequence events in chronological order using language. To recognise and use language relating to dates, including days of the week, weeks, months and years. To tell the time to the hour and half past the hour and draw the hands on a clock face to show these times	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 compare and sequence intervals of time.	To tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks. To begin to use digital 12-hour clocks and record their times in preparation for using digital 24-hour clocks in year 4. To estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours. To use vocabulary such as o'clock, a.m. /p.m., morning, afternoon, noon and midnight. To know the number of seconds in a minute and the number of days in each month, year and leap year.	To read, write and convert time between analogue and digital 12- and 24-hour clocks. To solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.
<b>Record Present and Interpret Data</b>			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 totaling and comparing categorical data	To record, interpret, collate, organise and compare information. 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). To ask and answer simple questions by counting the number of objects in each category and sorting the	To interpret and present data using barcharts, pictograms and tables and use simple scales with increasing accuracy.	To understand and use a greater range of scales in data representations. To interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.

				<p>categories by quantity. To ask and answer questions about totaling and comparing categorical data</p>		
<b>Statistics</b>	<p>Experiment with their own symbols and marks as well as numerals.</p>				<p>To solve one-step and two-step questions using information presented in scaled bar charts and pictograms and tables.</p>	<p>To solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.</p>