



MATHEMATICS SKILLS PROGRESSION

	RECEPTION Three and Four Year olds Reception ELG	YEAR 1	YEAR 2
Number - Number and place value	• Recite numbers past 5 • Say one number name for each item in order: 1, 2, 3, 4, 5 • Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle') • Fast recognition of up to 3 objects, without having to count them individually ('subitising') • Show 'finger numbers' up to 5 • Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5 • Experiment with their own symbols and marks as well as numerals • Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5 • Experiment with their own symbols and marks as well as numerals • Compare quantities using language: 'more than', 'fewer than' • Solve real world mathematical problems with numbers up to 5 • Count objects, actions and sounds • Count beyond ten • Subitise • Link the number symbol (numeral) with its cardinal number value • Compare numbers • Understand the 'one more than/one less than' relationship between consecutive numbers • Explore the composition of numbers to 10 • Verbally count beyond 20, recognising the pattern of the counting system • Subitise (recognising quantities without counting) up to 5	• count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number • count, read and write numbers to 100 in numerals • given a number, identify one more and one less • identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least • read and write numbers from 1 to 20 in numerals and words • count in multiples of twos, fives and tens • practicing ordering [first, second, third] * • recognise place value in numbers beyond 20 *	• recognise the place value of each digit in a two-digit number (tens, ones) • identify, represent and estimate numbers using different representations, including the number line • compare and order numbers from 0 up to 100; use <, > and = signs • read and write numbers to at least 100 in numerals and in words • use place value and number facts to solve problems • count in steps of 3 from 0, forward and backward • count in steps of 2 and 5 from 0, and in tens from any number, forward and backward

	• Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity • Have a deep understanding of numbers to 10, including the composition of each number		
Number – Addition and subtraction	• Automatically recall number bonds for numbers 0-5 and some for 0-10 • Subitise • Link the number symbol (numeral) with its cardinal number value • Explore the composition of numbers to 10 • 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 • Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed evenly	• read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs • represent and use number bonds and related subtraction facts within 20 • solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$ • add and subtract one-digit and two-digit numbers to 20, including zero • realise the effect of adding and subtracting zero in order to establish addition and subtraction as related operations	• 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 methods • recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 • show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot • recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems • add and subtract numbers using concrete objects, pictorial representations, and mentally, including: - a two-digit number and tens - adding three one-digit numbers • record addition and subtraction in columns to support place value and prepare for formal written methods with larger numbers *
Number – Multiplication and division	• Is able to explore and represent patterns within numbers up to 10, including odds and evens, double facts and how quantities can be distributed equally	• 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 • understand multiplication and division through grouping and sharing small quantities * • make connections between arrays, number patterns and counting in twos, fives and tens * • double numbers and quantities *	• calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication ($\times$), division ($\div$) and equals (=) signs • show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot • solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts • recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers

Fractions		• 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 and combine quarters as parts of a whole * • find simple fractions of objects, numbers and quantities*	• 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 • write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$
Measurement	• Make comparisons between objects relating to size, length, weight and capacity. • Begin to describe a sequence of events, real or fictional, using words, such as 'first', 'then...' • Compare length, weight and capacity	• compare, describe and solve practical problems for lengths and heights [for example, long/short, longer/shorter, tall/short, double/half] • measure and begin to record lengths and heights • recognise and know the value of different denominations of coins and notes • compare, describe and solve practical problems for mass or weight [for example, heavy/light, heavier than, lighter than]] • measure and begin to record mass/weight • 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 • compare, describe and solve practical problems for mass or weight capacity/volume [for example, full/empty, more than, less than, quarter] • measure and begin to record capacity and volume • compare, describe and solve practical problems for time [for example, quicker, slower, earlier, later] • measure and begin to record time (hours, minutes, seconds) • tell the time to the hour and half past the hour and draw the hands on a clock face to show these times	• 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 • 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 • 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 • 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 =
Geometry - Properties of	• Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners', 'straight', 'flat', 'round' • Select shapes appropriately: flat surfaces for a building, a triangular pattern for a roof, etc	• recognise and name common 2-D shapes, including: – 2-D shapes [for example, rectangles (including squares), circles and triangles] • describe position, directions and movements, including half, quarter and three-quarter turns – 3-D shapes [for example, cuboids (including cubes),	• identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line • draw lines and shapes using a straight edge * • order and arrange combinations of mathematical objects in patterns and sequences

	• Combine shapes to make new ones – an arch, a bigger triangle, etc • Understand position through words alone – for example, “The bag is under the table,” – with no pointing • Describe a familiar route • Discuss routes and locations, using words like ‘in front of’ and ‘behind’ • Talk about and identify the patterns around them. For example, stripes on clothes, designs on rugs and wallpaper. Use informal language like ‘pointy’, ‘spotty’, ‘blobs’, etc • Extend and create ABAB patterns – stick, leaf, stick, leaf • Notice and correct an error in a repeating pattern • 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 • Draw information from a simple map • Continue, copy and create repeating patterns	pyramids and spheres]	• use mathematical vocabulary to describe position, direction and movement, including movement in a straight 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] • compare and sort common 2-D and 3-D shapes and everyday objects • 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)
Statistics	• Experiment with their own symbols and marks, as well as numerals		• 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