

Key Learning in Mathematics – EYFS

Number – counting	Number – number sense	Measurement
Rote counting - Rote count from 1 - Rote count on from a given number between 1 and 20 - Rote count back from 20 to 1 - Rote count back from a given number between 1 and 20 - Know what number comes before or after a given number - Say a number between two given numbers Counting objects - Understand that counting is to find out how many - Use one to one correspondence when counting - Understand the last number said is the number in the set - Count up to 20 objects, pictures, sounds and actions - Understand and use conservation of number - Use the word 'zero' to represent 'none' - Compare two sets of different objects saying which set is more, fewer, same, equal - Order three or more sets of objects - State without counting (subitise) quantities within 5 - Make a sensible guess of quantities within 10 Count reliably with numbers from 1 to 20.	- Partition a set of objects in different ways using the terminology part - part - whole - Understand that 'teen' numbers are a group of 10 plus another number - Understand 20 is the same as two groups of 10 - Recognise repeating patterns in the counting sequence i.e. 6, 7, 8, 9 and 16, 17, 18, 19 Number – number recognition - Recognise and identify numerals 0 to 20 - Select the numeral that represents a set of objects - Order numerals 0 to 20 Count reliably with numbers from 1 to 20, place them in order. Number – graphics - Represent amounts in their own ways, explaining what they mean - Represent and explain their thinking in their own ways - Write numerals 0 to 20	Distance - Understand that measures of distance can have different names including length, width, height - Understand and use language to compare two objects of different length/width, e.g. longer / shorter; wider / narrower - Understand and use language to compare two objects of different height, e.g. taller / shorter - Understand and use language of comparison when ordering three objects of different lengths/widths/heights, e.g. longest / shortest; widest / narrowest; tallest / shortest - Find an object of similar length/width/height - Understand the concept of the conservation of length/width/height - Use uniform non-standard units to measure length/width/height Weight - Understand the measurement of weight (heavy/light) - Understand and use language to compare two objects of different weight, e.g. heavier/lighter - Understand the concept of conservation of weight - Use uniform non-standard units to measure weight Volume/capacity - Understand the measurement of volume/capacity (empty/full/nearly) - Understand and use language to compare two of the same container holding different amounts, e.g. more/less - Understand and use the language of comparison when ordering three of the same container holding different amounts, e.g. most/least - Understand the concept of the conservation of volume/capacity - Use uniform non-standard units to measure volume/capacity Money - Understand that we need to pay for goods - Talk about things they want to spend their money on - Talk about different ways we can pay for things - Recognise that there are different coins - Recognise 1p coin - Use 1p coins to pay for objects Time - Talk about significant times of the day, e.g. home time, lunch time, snack time, bed time, etc. - Understand and use language – before, after, yesterday, today, tomorrow - Use the language of comparison when talking about time, e.g. longer/ shorter; faster/slower - Sequence two or three familiar events and describe the sequence - Know the names of the days of the week - Say the names of the days of the week in order Use everyday language to talk about size, weight, capacity, distance, time and money to compare quantities and objects and to solve problems.
Number – calculating	Shape	
- Understand the concept of addition by practically combining sets of objects to find how many and use the terminology part – part – whole - Understand the concept of subtraction by practically removing one amount from within another to find how many are left and use the terminology part – part – whole - Relate subtraction to addition in practical situations using the terminology part – part – whole - Identify one more and one less than a given number - Identify two more and two less than a given number - Add two single-digit numbers totalling up to 10, using practical equipment - Add two single-digit numbers totalling greater than 10, using practical equipment - Subtract a single-digit number from a number up to 10, using practical equipment - Subtract a single-digit number from a number greater than 10, using practical equipment 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 involving doubling, halving and sharing.	- Use everyday language to talk about shapes in the environment - Know that shapes can appear in different ways and be different sizes - Build and make models with 3-D shapes - Create patterns and pictures with 2-D shapes - Name common 2-D shapes (circle, triangle, square, rectangle, oblong) - Name common 3-D shapes (sphere, cube, cuboid, cone) - Talk about shapes using mathematical language (straight, curved, sides, flat, solid) - Sort shapes according to their own criteria Explore characteristics of everyday objects and shapes and use mathematical language to describe them. Space - Understand and use positional language in everyday situations - Understand and use ordinal numbers when describing position - Understand and use the language of movement/direction - Describe and recognise patterns made of objects, numbers and shapes - Create patterns made of objects, numbers and shapes Use everyday language to talk about position. They recognise, create and describe patterns.	
Number – fractions	Statistics	
- Understand that sharing is splitting an amount into equal parts - Understand that halving is sharing into two equal parts - Understand that doubling is adding the same number to itself They solve problems, including doubling, halving and sharing.	Sort objects and say what features they have in common	

Key Learning in Mathematics – Year 1

Number – number and place value	Number – addition and subtraction	Number – multiplication and division
- Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number - Count in multiples of twos, fives and tens - Read and write numbers to 100 in numerals - Read and write numbers from 1 to 20 in numerals and words - Begin to recognise the place value of numbers beyond 20 (tens and ones) - Identify and represent numbers using objects and pictorial representations including the number line - Use the language of: equal to, more than, less than (fewer), most, least - Given a number, identify one more and one less - Recognise and create repeating patterns with numbers, objects and shapes - Identify odd and even numbers linked to counting in twos from 0 and 1 - Solve problems and practical problems involving all of the above	- Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs - Represent and use number bonds and related subtraction facts within 20 - Add and subtract one-digit and two-digit numbers to 20, including zero (using concrete objects and pictorial representations) - Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$	- Recall and use doubles of all numbers to 10 and corresponding halves - 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
Number – fractions	Geometry – properties of shapes	Measurement
- Understand that a fraction can describe part of a whole - Understand that a unit fraction represents one equal part of a whole - Recognise, find and name a half as one of two equal parts of an object shape or quantity (including measure) - Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity (including measure)	- 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	- Measure and begin to record: - lengths and heights, using non-standard and then manageable standard units (m/cm) - mass/weight, using non-standard and then manageable standard units (kg/g) - capacity and volume using non-standard and then manageable standard units (litres/ml) - time (hours/minutes/seconds) within children's range of counting competence - Compare, describe and solve practical problems for: - lengths and heights (for example, long/short, longer/shorter, tall/short, double/half) - mass/weight (for example, heavy/light, heavier than, lighter than) - capacity and volume (for example, full/empty, more than, less than, half, half full, quarter) - time (for example, quicker, slower, earlier, later) - Recognise and use language relating to dates, including days of the week, weeks, months and years - Sequence events in chronological order using language (for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening) - Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times - Recognise and know the value of different denominations of coins and notes
	Geometry – position and direction	
	- Describe movement, including whole, half, quarter and three-quarter turns - Recognise and create repeating patterns with objects and shapes - Describe position and direction	
	Statistics	
	- Sort objects, numbers and shapes to a given criterion and their own - Present and interpret data in block diagrams using practical equipment - Ask and answer simple questions by counting the number of objects in each category - Ask and answer questions by comparing categorical data	

Key Learning in Mathematics – Year 2

Number – number and place value	Number – addition and subtraction	Number – multiplication and division
- Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward - Read and write numbers to at least 100 in numerals and in words - 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 - Partition numbers in different ways (e.g. $23 = 20 + 3$ and $23 = 10 + 13$) - Compare and order numbers from 0 up to 100; use $<$, $>$ and $=$ signs - Find 1 or 10 more or less than a given number - Round numbers to at least 100 to the nearest 10 - Understand the connection between the 10 multiplication table and place value - Describe and extend simple sequences involving counting on or back in different steps - Use place value and number facts to solve problems	- Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting) - Select a mental strategy appropriate for the numbers involved in the calculation - Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot - Understand subtraction as take away and difference (how many more, how many less/fewer) - Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 - Recall and use number bonds for multiples of 5 totalling 60 (to support telling time to nearest 5 minutes) - Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: - a two-digit number and ones - a two-digit number and tens - two two-digit numbers - adding three one-digit numbers - Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems - Solve problems with addition and subtraction including with missing numbers: - using concrete objects and pictorial representations, including those involving numbers, quantities and measures - applying their increasing knowledge of mental and written methods	- Understand multiplication as repeated addition - Understand division as sharing and grouping and that a division calculation can have a remainder - Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot - Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers - Derive and use doubles of simple two-digit numbers (numbers in which the ones total less than 10) - Derive and use halves of simple two-digit even numbers (numbers in which the tens are even) - Calculate mathematical statements for multiplication using repeated addition and division within the multiplication tables and write them using the multiplication ($\times$), division ($\div$) and equals ($=$) signs - Solve problems involving multiplication and division (including those with remainders), using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts
Number – fractions	Geometry – properties of shapes	Measurement
- Understand and use the terms numerator and denominator - Understand that a fraction can describe part of a set - Understand that the larger the denominator is, the more pieces it is split into and therefore the smaller each part will be - 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 $\frac{1}{2}$ - Count on and back in steps of $\frac{1}{2}$ and $\frac{1}{4}$	- 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]	- Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature ($^{\circ}\text{C}$); capacity and volume (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 $=$ - 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 - 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 - Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change and measures (including time)
	Geometry – position and direction	
	- Order/arrange combinations of mathematical objects in patterns/sequences - 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 anti-clockwise)	
	Statistics	
	- Compare and sort objects, numbers and common 2-D and 3-D shapes and everyday objects - 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	

