

MATHS CURRICULUM MAP
SKILLS, KNOWLEDGE AND UNDERSTANDING
PROGRESSION



| Nursery Birth to three | Pre-School 3 and 4 year olds | Reception (ELG) | Year 1 | Year 2 |
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| Number - Counting | | | | |
| <p>Develop counting-like behaviours, such as making sounds, pointing or saying numbers in sequence.</p> <p>Count in everyday contexts, sometimes skipping numbers – 1-2-3-4-5.</p> <p>Rote count to 5</p> <p>Begin to recognise numerals 0-5.</p> | <p>Say one number for each item in order: 1,2,3,4,5.</p> <p>Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle')</p> | <p>Count objects, actions and sounds.</p> <p>ELG - Verbally count beyond 20, recognising the pattern of the counting system</p> | <p>count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number</p> | <p>count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward</p> |
| <p>Take part in finger rhymes with numbers</p> | <p>Recite numbers past 5.</p> <p>Show 'finger numbers' up to 5.</p> <p>Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5.</p> <p>Develop fast recognition of up to 3 objects, without having to count them individually ('subitising').</p> | <p>Count beyond ten.</p> <p>Explore the composition of numbers to 10.</p> <p>ELG - Have a deep understanding of number to 10, including the composition of each number</p> <p>ELG - Subitise (recognise quantities without counting) up to 5</p> <p>ELG - Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.</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 or backward</p> |
| | | <p>Understand the 'one more than/one less than' relationship between consecutive numbers.</p> | <p>given a number, identify one more and one less</p> | |

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| Comparing Numbers | | | | |
| React to changes of amounts in a group of up to three items. Compare amounts, saying 'lots', 'more' or 'same'. | Compare quantities using language: more than, fewer than | Compare numbers. ELG - Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity | use the language of: equal to, more than, less than (fewer), most, least | compare and order numbers from 0 up to 100; use <, > and = signs |
| Identifying, representing & estimating numbers | | | | |
| | | | identify and represent numbers using objects and pictorial representations including the number line | identify, represent and estimate numbers using different representations, including the number line |
| Reading & Writing Numbers | | | | |
| | Experiment with their own symbols and marks as well as numerals | Link the number symbol (numeral) with its cardinal number value. | read and write numbers from 1 to 20 in numerals and words. | read and write numbers to at least 100 in numerals and in words |
| Understanding Place Value | | | | |
| | | | read and write numbers to 100 in numerals. identify and represent numbers using objects and pictorial representations including the number line | recognise the place value of each digit in a two-digit number (tens, ones) |
| Problem Solving | | | | |
| | Solve real world mathematical problems with numbers up to 5. | | | use place value and number facts to solve problems |
| Addition & Subtraction | | | | |
| Number Bonds | | | | |
| Combine objects. Put objects inside others and take them out again. React to changes of amounts in a group of up to three items. | | ELG - 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. | represent and use number bonds and related subtraction facts within 20 | recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 |
| Mental Calculation | | | | |
| | | | 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: * a two-digit number and ones |

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| | | | | <ul style="list-style-type: none"> * a two-digit number and tens * two two-digit numbers * adding three one-digit numbers |
| | | | read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Written Methods) | show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot |
| Written Methods | | | | |
| | | | <p>read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Mental Calculation) add and subtract one-digit and two-digit numbers to 20, including zero</p> <p>Solve 1 step problems that involve addition & subtraction, using concrete & pictorial representations, & missing number problems</p> | <p>add and subtract numbers using concrete objects, pictorial representations, and mentally, including:</p> <ul style="list-style-type: none"> * a two-digit number and ones * a two-digit number and tens * two two-digit numbers <p>adding three one-digit numbers</p> <p>Solve probs with addition & subtraction</p> |
| Inverse operations | | | | |
| | | | | recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. |
| Multiplication & Division facts | | | | |
| | | | count in multiples of twos, fives and tens (copied from Number and Place Value) | count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward (copied from Number and Place Value) |
| | | ELG - Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally. | Recall and use doubles of all numbers to 10 and corresponding halves | recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers |

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| Written Calculation | | | | |
| | | | | <p>calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals ($=$) signs</p> <p>show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot</p> |
| Problem Solving | | | | |
| | | | <p>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>solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts</p> |
| Fractions | | | | |
| | | | | <p><i>Pupils should 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 (Non Statutory Guidance)</i></p> |
| | | | <p>recognise, find and name a half as one of two equal parts of an object, shape or quantity</p> <p>recognise, find and name a quarter as one of four equal parts of an object, shape or quantity</p> | <p>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</p> <p>write simple fractions e.g. $\frac{1}{2}$ of 6 = 3</p> |
| Equivalence | | | | |
| | | | | <p>recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.</p> |

| Measurement – Comparing & Estimating | | | | |
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| | | | compare, describe and solve practical problems for: <ul style="list-style-type: none"> * lengths and heights [e.g. long/short, longer/shorter, tall/short, double/half] * mass/weight [e.g. heavy/light, heavier than, lighter than] * capacity and volume [e.g. full/empty, more than, less than, half, half full, quarter] time [e.g. quicker, slower, earlier, later] | compare and order lengths, mass, volume/capacity and record the results using $>$, $<$ and $=$ |
| | | | sequence events in chronological order using language [e.g. before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] | compare and sequence intervals of time |
| Measuring & Calculating | | | | |
| Compare sizes, weights using gesture and language – bigger/little/smaller, high/low, tall/heavy. | Make comparisons between objects relating to size, length, weight and capacity. | Compare length, weight and capacity. | measure and begin to record the following: <ul style="list-style-type: none"> * lengths and heights * mass/weight * capacity and volume * time (hours, minutes, seconds) | choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature ($^{\circ}$ C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels |
| Money | | | | |
| | | | recognise and know the value of different denominations of coins and notes | 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 |

| Telling the Time | | | |
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| | | | 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 language relating to dates, including days of the week, weeks, months and years |
| | | | know the number of minutes in an hour and the number of hours in a day. (appears also in Converting) |
| Converting | | | |
| | | | know the number of minutes in an hour and the number of hours in a day. (appears also in Telling the Time) |
| Shapes | | | |
| Build with a range of resources. Complete inset puzzles. Climb and squeeze themselves into different types of spaces. Basic 2D shapes- circle, triangle, rectangle, square | 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 building, a triangular prism for a roof, etc. Combine shapes to make new ones – an arch, a bigger triangle, etc. | Select, rotate and manipulate shapes to develop spatial reasoning skills. Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can. | recognise and name common 2-D and 3-D shapes, including: * 2-D shapes [e.g. rectangles (including squares), circles and triangles] * 3-D shapes [e.g. cuboids (including cubes), pyramids and spheres]. |
| | | | 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] |

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| Comparing & Classifying | | | | |
| | | | | compare and sort common 2-D and 3-D shapes and everyday objects |
| Position, Direction & Movement | | | | |
| Climb and squeeze themselves into different types of spaces. | 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’. | | describe position, direction and movement, including half, quarter and three-quarter turns. | 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) |
| Pattern | | | | |
| Notice patterns and arrange things in patterns. | 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. Begin to describe a sequence of events, real or fictional, using words such as ‘first’, ‘then...’ | Continue, copy and create repeating patterns. | <i>Recognise and create repeating patterns with objects and shapes</i> | order and arrange combinations of mathematical objects in patterns and sequences |
| Statistics | | | | |
| | | | | 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 |

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| Algebra | | | | |
| | | | <p><i>solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$</i></p> <p>(copied from Addition and Subtraction)</p> | <p><i>recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems.</i></p> <p>(copied from Addition and Subtraction)</p> |
| Sequences | | | | |
| | | | <p><i>sequence events in chronological order using language such as: before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening</i></p> <p>(copied from Measurement)</p> | <p><i>compare and sequence intervals of time</i></p> <p>(copied from Measurement)</p> <p><i>order and arrange combinations of mathematical objects in patterns</i></p> <p>(copied from Geometry: position and direction)</p> |