



## Mathematical Vocabulary

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| Birth to Three – babies, toddlers and young children will be learning to: | Communication and Language |          | <ul style="list-style-type: none"> <li>Copy your gestures and words.</li> <li>Understand simple questions about ‘who’, ‘what’ and ‘where’ (but generally not ‘why’).</li> </ul> |
| Three and Four-Year-Olds will be learning to:                             | Communication and Language |          | <ul style="list-style-type: none"> <li>Use a wider range of vocabulary.</li> <li>Understand ‘why’ questions, like: “why do you think the caterpillar is so fat?”</li> </ul>     |
| Children in Reception will be learning to:                                | Communication and Language |          | <ul style="list-style-type: none"> <li>Learn new vocabulary.</li> <li>Use new vocabulary throughout the day.</li> </ul>   |
| ELG   | Communication and Language | Speaking | <ul style="list-style-type: none"> <li>Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary.</li> </ul> |

## Number and Place Value

### Counting

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| Birth to Three – babies, toddlers and young children will be learning to: | Mathematics |                    | <ul style="list-style-type: none"> <li>Take part in finger rhymes with numbers.</li> <li>Develop counting-like behaviour, such as making sounds, pointing or saying some numbers in sequence.</li> <li>Count in everyday contexts, sometimes skipping numbers – ‘1-2-3-5’.</li> </ul>      |
| Three and Four-Year-Olds will be learning to:                             | Mathematics |                    | <ul style="list-style-type: none"> <li>Recite numbers past 5.</li> <li>Say one number name for each item in order: 1, 2, 3, 4, 5.</li> <li>Know that the last number reached when counting a small set of objects tells you how many there are in total (‘cardinal principle’).</li> </ul> |
| Children in Reception will be learning to:                                | Mathematics |                    | <ul style="list-style-type: none"> <li>Count objects, actions and sounds.</li> <li>Count beyond ten.</li> </ul>  |
| ELG   | Mathematics | Numerical Patterns | <ul style="list-style-type: none"> <li>Verbally count beyond 20, recognising the pattern of the counting system.</li> </ul>  |

### Identifying, Representing and Estimating Numbers

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| Birth to Three – babies, toddlers and young children will be learning to: | Mathematics | <ul style="list-style-type: none"> <li>• React to changes of amount in a group of up to three items.</li> <li>• Combine objects like stacking blocks and cups. Put objects inside others and take them out again.</li> </ul> |
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| Three and Four-Year-Olds will be learning to: | Mathematics | <ul style="list-style-type: none"> <li>• Develop fast recognition of up to 3 objects, without having to count them individually ('subitising').</li> <li>• Show 'finger numbers' up to 5.</li> <li>• Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5.</li> <li>• Experiment with their own symbols and marks as well as numerals.</li> </ul> |
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|  |             |   |
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| Children in Reception will be learning to: | Mathematics | <ul style="list-style-type: none"> <li>• Subitise.</li> <li>• Link the number symbol (numeral) with its cardinal number value.</li> </ul> |
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| ELG | Mathematics | Number | <ul style="list-style-type: none"> <li>• Subitise (recognising quantities without counting) up to 5.</li> </ul> |
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### Reading and Writing Numbers

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| Birth to Three – babies, toddlers and young children will be learning to: | Expressive Arts and Design | <ul style="list-style-type: none"> <li>• Start to make marks intentionally. Explore paint, using fingers and other parts of their bodies as well as brushes and other tools. Express ideas and feelings through making marks, and sometimes give a meaning to the marks they make.</li> </ul> |
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| Three and Four-Year-Olds will be learning to: | Mathematics | <ul style="list-style-type: none"> <li>• Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5.</li> <li>• Experiment with their own symbols and marks as well as numerals.</li> </ul> |
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|  |             |  |
|--|-------------|--|
| Children in Reception will be learning to: | Mathematics | <ul style="list-style-type: none"> <li>• Link the number symbol (numeral) with its cardinal number value.</li> </ul> |
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### Compare and Order Numbers

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| Birth to Three – babies, toddlers and young children will be learning to: | Mathematics | <ul style="list-style-type: none"> <li>• Compare amounts, saying 'lots', 'more' or 'same'.</li> </ul> |
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| Three and Four-Year-Olds will be learning to:                             | Mathematics |                    | <ul style="list-style-type: none"> <li>• Compare quantities using language: 'more than', 'fewer than'.</li> <li>• Creates their own spatial patterns showing some organisation or regularity</li> </ul> |
| Children in Reception will be learning to:                                | Mathematics |                    | <ul style="list-style-type: none"> <li>• Compare numbers.</li> <li>• Understand the 'one more than/one less than' relationship between consecutive numbers.</li> </ul>                                  |
| ELG   | Mathematics | Numerical Patterns | <ul style="list-style-type: none"> <li>• Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.</li> </ul>      |
| <b>Understanding Place Value</b>  |             |                    |   |
| Birth to Three – babies, toddlers and young children will be learning to: |             |                    |   |
| Three and Four-Year-Olds will be learning to:                             |             |                    |   |
| Children in Reception will be learning to:                                | Mathematics |                    | <ul style="list-style-type: none"> <li>• Understand the 'one more than/one less than' relationship between consecutive numbers.</li> <li>• Explore the composition of numbers to 10.</li> </ul>         |
| ELG   | Mathematics | Number             | <ul style="list-style-type: none"> <li>• Have a deep understanding of numbers to 10, including the composition of each number.</li> </ul>   |
| <b>Solve Problems</b>   |             |                    |   |
| Birth to Three – babies, toddlers and young children will be learning to: | Mathematics |                    | <ul style="list-style-type: none"> <li>• Combine objects like stacking blocks and cups. Put objects inside others and take them out again.</li> </ul>   |
| Three and Four-Year-Olds will be learning to:                             | Mathematics |                    | <ul style="list-style-type: none"> <li>• Solve real world mathematical problems with numbers up to 5.</li> </ul>  |
| Children in Reception will be learning to:                                | Mathematics |                    | <ul style="list-style-type: none"> <li>• Automatically recall number bonds for numbers 0–5 and some to 10.</li> </ul>   |

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| ELG | Mathematics | Number             | <ul style="list-style-type: none"> <li>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</li> </ul> |
|     | Mathematics | Numerical Patterns | <ul style="list-style-type: none"> <li>Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally</li> </ul>                                      |

| Addition and Subtraction                   |             |                    |  |
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| Mental Calculations                        |             |                    |  |
| Children in Reception will be learning to: | Mathematics |                    | <ul style="list-style-type: none"> <li>Automatically recall number bonds for numbers 0-5 and some to 10.</li> </ul>  |
| ELG  | Mathematics | Number             | <ul style="list-style-type: none"> <li>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.</li> </ul> |
| Solve Problems                             |             |                    |  |
|  | Mathematics | Numerical Patterns | <ul style="list-style-type: none"> <li>Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed evenly.</li> </ul>                                       |

| Measurement   |             |  |   |
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| Describe, Measure, Compare and Solve (All Strands)                        |             |  |   |
| Birth to Three – babies, toddlers and young children will be learning to: | Mathematics |  | <ul style="list-style-type: none"> <li>Compare amounts, saying 'lots', 'more' or 'same'</li> </ul>                                |
| Three and Four-Year-Olds will be learning to:                             | Mathematics |  | <ul style="list-style-type: none"> <li>Make comparisons between objects relating to size, length, weight and capacity.</li> </ul> |

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| Children in Reception will be learning to: | Mathematics | <ul style="list-style-type: none"> <li>• Compare length, weight and capacity.</li> </ul> |
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## Telling the Time

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| Three and Four-Year-Olds will be learning to: | Mathematics | <ul style="list-style-type: none"> <li>• Begin to describe a sequence of events, real or fictional, using words, such as 'first', 'then...'</li> </ul> |
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## Properties of Shapes

### Recognise 2D and 3D Shapes and their Properties

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| Birth to Three – babies, toddlers and young children will be learning to: | Mathematics | <ul style="list-style-type: none"> <li>• Complete inset puzzles.</li> </ul>  |
| Three and Four-Year-Olds will be learning to:                             | Mathematics | <ul style="list-style-type: none"> <li>• 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'.</li> <li>• Select shapes appropriately: flat surfaces for a building, a triangular pattern for a roof, etc.</li> <li>• Combine shapes to make new ones – an arch, a bigger triangle, etc.</li> </ul> |
| Children in Reception will be learning to:                                | Mathematics | <ul style="list-style-type: none"> <li>• Select, rotate and manipulate shapes in order to develop spatial reasoning skills.</li> </ul>   |

### Compare and Classify Shapes

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| Reception | Mathematics | <ul style="list-style-type: none"> <li>• Compose and decompose shapes so that children can recognise a shape can have other shapes within it, just as numbers can.</li> </ul> |
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## Position and Direction

### Position, Direction and Movement

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| Birth to Three – babies, toddlers and young children will be learning to: | Mathematics             | <ul style="list-style-type: none"> <li>• Climb and squeeze themselves into different types of spaces.</li> </ul>   |   |
| Three and Four-Year-Olds will be learning to:                             | Mathematics             | <ul style="list-style-type: none"> <li>• Understand position through words alone – for example, “The bag is under the table,” – with no pointing.</li> <li>• Describe a familiar route.</li> <li>• Discuss routes and locations, using words like ‘in front of’ and ‘behind’.</li> </ul>   |   |
| Children in Reception will be learning to:                                | Understanding the World | <ul style="list-style-type: none"> <li>• Draw information from a simple map.</li> </ul>  |   |
|   | Mathematics             | <ul style="list-style-type: none"> <li>• Select, rotate and manipulate shapes to develop spatial reasoning skills.</li> </ul>  |   |
| <b>Patterns</b>   |                         |  |   |
| Birth to Three – babies, toddlers and young children will be learning to: | Mathematics             | <ul style="list-style-type: none"> <li>• Notice patterns and arrange things in patterns.</li> </ul>  |   |
| Three and Four-Year-Olds will be learning to:                             | Mathematics             | <ul style="list-style-type: none"> <li>• 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.</li> <li>• Extend and create ABAB patterns – stick, leaf, stick, leaf.</li> <li>• Notice and correct an error in a repeating pattern.</li> </ul> |   |
| Children in Reception will be learning to:                                | Mathematics             | <ul style="list-style-type: none"> <li>• Continue, copy and create repeating patterns.</li> </ul>  |   |
| ELG   | Mathematics             | Numerical Patterns   | <ul style="list-style-type: none"> <li>• Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.</li> </ul> |

## Statistics

### Record, Present and Interpret Data

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|--|--|--|---|
| <p>Birth to Three – babies, toddlers and young children will be learning to:</p> | <p>Expressive Arts and Design</p>  |  | <ul style="list-style-type: none"> <li>• Start to make marks intentionally. Explore paint, using fingers and other parts of their bodies as well as brushes and other tools. Express ideas and feelings through making marks, and sometimes give a meaning to the marks they make.</li> </ul>   |
| <p>Three and Four-Year-Olds will be learning to:</p>                             | <p>Mathematics</p>   |  | <ul style="list-style-type: none"> <li>• Experiment with their own symbols and marks, as well as numerals.</li> </ul>   |
| <p>Children in Reception will be learning to:</p>                                | <p>Mathematics</p>   |  | <ul style="list-style-type: none"> <li>• Link the number symbol (numeral) with its cardinal number value.</li> </ul>  |
| <p>ELG</p>   | <p>Mathematics</p>   | <p>Numerical patterns</p>              | <ul style="list-style-type: none"> <li>• Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity</li> </ul>   |
| <p>Year 1</p>  | <p>Mathematics<br/><i>The principal focus of mathematics teaching in key stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the four operations, including with practical resources [for example, concrete objects and measuring tools]. At this stage, pupils should develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money. By the end of year 2, pupils should know the number bonds to 20 and be precise in using and understanding place value. An emphasis on practice at this early stage will aid fluency. Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling</i></p> | <p>Number - number and place value</p> | <div data-bbox="751 813 1374 846" style="background-color: #004a7c; color: white; padding: 2px;"><b>Number – number and place value</b></div> <div data-bbox="751 869 1374 1167" style="border: 1px solid #004a7c; padding: 5px;"> <p><b>Statutory requirements</b></p> <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>• count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number</li> <li>• count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens</li> <li>• given a number, identify one more and one less</li> <li>• 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</li> <li>• read and write numbers from 1 to 20 in numerals and words.</li> </ul> </div> <div data-bbox="751 1189 1374 1487" style="border: 1px solid #004a7c; padding: 5px;"> <p><b>Notes and guidance (non-statutory)</b></p> <p>Pupils practise counting (1, 2, 3...), ordering (for example, first, second, third...), and to indicate a quantity (for example, 3 apples, 2 centimetres), including solving simple concrete problems, until they are fluent.</p> <p>Pupils begin to recognise place value in numbers beyond 20 by reading, writing, counting and comparing numbers up to 100, supported by objects and pictorial representations.</p> <p>They practise counting as reciting numbers and counting as enumerating objects, and counting in twos, fives and tens from different multiples to develop their recognition of patterns in the number system (for example, odd and even numbers), including varied and frequent practice through increasingly complex questions.</p> <p>They recognise and create repeating patterns with objects and with shapes.</p> </div> |

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|  | <i>knowledge at key stage 1.</i> |                                      |  |
|  |                                  | Number – addition and subtraction    | <p><b>Number – addition and subtraction</b></p> <p><b>Statutory requirements</b></p> <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs</li> <li>represent and use number bonds and related subtraction facts within 20</li> <li>add and subtract one-digit and two-digit numbers to 20, including zero</li> <li>solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as <math>7 = \square - 9</math>.</li> </ul> <p><b>Notes and guidance (non-statutory)</b></p> <p>Pupils memorise and reason with number bonds to 10 and 20 in several forms (for example, <math>9 + 7 = 16</math>; <math>16 - 7 = 9</math>; <math>7 = 16 - 9</math>). They should realise the effect of adding or subtracting zero. This establishes addition and subtraction as related operations.</p> <p>Pupils combine and increase numbers, counting forwards and backwards.</p> <p>They discuss and solve problems in familiar practical contexts, including using quantities. Problems should include the terms: put together, add, altogether, total, take away, distance between, difference between, more than and less than, so that pupils develop the concept of addition and subtraction and are enabled to use these operations flexibly.</p> |
|  |                                  | Number – multiplication and division | <p><b>Number – multiplication and division</b></p> <p><b>Statutory requirements</b></p> <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>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.</li> </ul> <p><b>Notes and guidance (non-statutory)</b></p> <p>Through grouping and sharing small quantities, pupils begin to understand: multiplication and division; doubling numbers and quantities; and finding simple fractions of objects, numbers and quantities.</p> <p>They make connections between arrays, number patterns, and counting in twos, fives and tens.</p>  |
|  |                                  | Fractions                            | <p><b>Number – fractions</b></p> <p><b>Statutory requirements</b></p> <p>Pupils should be taught to:</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><b>Notes and guidance (non-statutory)</b></p> <p>Pupils are taught half and quarter as 'fractions of' discrete and continuous quantities by solving problems using shapes, objects and quantities. For example, they could recognise and find half a length, quantity, set of objects or shape. Pupils connect halves and quarters to the equal sharing and grouping of sets of objects and to measures, as well as recognising and combining halves and quarters as parts of a whole.</p>   |
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|  |  | <p>Measurements</p> | <p><b>Measurement</b></p> <p><b>Statutory requirements</b></p> <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>▪ compare, describe and solve practical problems for: <ul style="list-style-type: none"> <li>▪ lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]</li> <li>▪ mass/weight [for example, heavy/light, heavier than, lighter than]</li> <li>▪ capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]</li> <li>▪ time [for example, 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 [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]</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> </ul> <p><b>Notes and guidance (non-statutory)</b></p> <p>The pairs of terms: mass and weight, volume and capacity, are used interchangeably at this stage.</p> <p>Pupils move from using and comparing different types of quantities and measures using non-standard units, including discrete (for example, counting) and continuous (for example, liquid) measurement, to using manageable common standard units.</p> <p>In order to become familiar with standard measures, pupils begin to use measuring tools such as a ruler, weighing scales and containers.</p> <p>Pupils use the language of time, including telling the time throughout the day, first using o'clock and then half past.</p> |
|  |  | <p>Geometry</p>     | <p><b>Geometry – properties of shapes</b></p> <p><b>Statutory requirements</b></p> <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>▪ recognise and name common 2-D and 3-D shapes, including: <ul style="list-style-type: none"> <li>▪ 2-D shapes [for example, rectangles (including squares), circles and triangles]</li> <li>▪ 3-D shapes [for example, cuboids (including cubes), pyramids and spheres].</li> </ul> </li> </ul> <p><b>Notes and guidance (non-statutory)</b></p> <p>Pupils handle common 2-D and 3-D shapes, naming these and related everyday objects fluently. They recognise these shapes in different orientations and sizes, and know that rectangles, triangles, cuboids and pyramids are not always similar to each other.</p> <p><b>Geometry – position and direction</b></p> <p><b>Statutory requirements</b></p> <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>▪ describe position, direction and movement, including whole, half, quarter and three-quarter turns.</li> </ul> <p><b>Notes and guidance (non-statutory)</b></p> <p>Pupils 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.</p> <p>Pupils make whole, half, quarter and three-quarter turns in both directions and connect turning clockwise with movement on a clock face.</p>  |