

Maths Skills Progression

End of EYFS Expectations

Number ELG

Children at the expected level of development will:

- Have a deep understanding of number to 10, including the composition of each number;
- Subitise (recognise quantities without counting) up to 5;
- 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.

Numerical Patterns ELG

Children at the expected level of development will:

- Verbally count beyond 20, recognising the pattern of the counting system;
- Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity;
- Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

Nursery and Pre-School (Range 4 and 5)

| Comparison | Counting/Composition | Cardinality | Spatial awareness | Shape | Pattern | Measures |
|---|--|---|--|---|---|---|
| <p>Beginning to compare and recognise changes in numbers of things, using words like more, lots or 'same'</p> <p>Compares two small groups of up to five objects, saying when there are the same number of objects in each group.</p> | <p>Begins to say numbers in order, some of which are in the right order (ordinality)</p> <p>Enjoy counting verbally as far as they can go</p> <p>Points or touches each item, saying one number for each item, using the stable order of 1,2,3,4,5.</p> <p>Uses some number names and number language within play, and may show fascination with large numbers</p> <p>Begin to recognise numerals 0 to 10</p> <p>Composition Through play and exploration, beginning to</p> | <p>In everyday situations, takes or gives two or three objects from a group</p> <p>Beginning to notice numerals (number symbols)</p> <p>Beginning to count on their fingers.</p> <p>Subitises one, two and three objects (without counting)</p> <p>Counts up to five items, recognising that the last number said represents the total counted so far</p> | <p>Moves their bodies and toys around objects and explores fitting into spaces</p> <p>Begins to remember their way around familiar environments</p> <p>Responds to some spatial and positional language</p> <p>Explores how things look from different viewpoints including things that are near or far away</p> | <p>Chooses puzzle pieces and tries to fit them in</p> <p>Recognises that two objects have the same shape</p> <p>Makes simple constructions</p> <p>Chooses items based on their shape which are appropriate for the child's purpose</p> <p>Responds to both informal language and common shape names</p> | <p>Joins in and anticipates repeated sound and action patterns</p> <p>Is interested in what happens next using the pattern of everyday routines</p> <p>Creates their own spatial patterns showing some organisation or regularity</p> <p>Explores and adds to simple linear patterns of two or three repeating items, e.g. stick,</p> | <p>Explores differences in size, length, weight and capacity</p> <p>Beginning to understand some talk about immediate past and future</p> <p>Beginning to anticipate times of the day such as mealtimes or home time</p> <p>In meaningful contexts, finds the longer or shorter, heavier or lighter and more/less full of two items</p> |

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| <p>learn that numbers are made up (composed) of smaller numbers</p> <p>Beginning to use understanding of number to solve practical problems in play and meaningful activities</p> <p>Beginning to recognise that each counting number is one more than the one before</p> <p>Separates a group of three or four objects in different ways, beginning to recognise that the total is still the same</p> | <p>Links numerals with amounts up to 5 and maybe beyond</p> <p>Explores using a range of their own marks and signs to which they ascribe mathematical meanings</p> | <p>Responds to and uses language of position and direction</p> <p>Predicts, moves and rotates objects to fit the space or create the shape they would like</p> | <p>Shows awareness of shape similarities and differences between objects</p> <p>Enjoys partitioning and combining shapes to make new shapes with 2D and 3D shapes</p> <p>Attempts to create arches and enclosures when building, using trial and improvement to select blocks</p> | <p>leaf (AB) or stick, leaf, stone (ABC)</p> <p>Joins in with simple patterns in sounds, objects, games and stories dance and movement, predicting what comes next</p> | <p>Recalls a sequence of events in everyday life and stories</p> |
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Key Vocabulary

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, more, less, same, share, half, now, next circle, triangle, square, rectangle, heavy, light, near, far

Reception (Range 6)

| Comparison | Counting/Composition | Cardinality | Spatial awareness | Shape | Pattern | Measures |
|--|---|---|--|--|---|---|
| <p>Uses number names and symbols when comparing numbers, showing interest in large numbers</p> <p>Estimates of numbers of things, showing understanding of relative size</p> | <p>Enjoys reciting numbers from 0 to 10 (and beyond) and back from 10 to 0</p> <p>Increasingly confident at putting numerals in order 0 to 10 (ordinality)</p> <p>Composition</p> <p>Shows awareness that numbers are made up (composed) of smaller numbers, exploring partitioning in different</p> | <p>Engages in subitising numbers to four and maybe five</p> <p>Counts out up to 10 objects from a larger group</p> <p>Matches the numeral with a group of items to show how many there are (up to 10)</p> | <p>Uses spatial language, including following and giving directions, using relative terms and describing what they see from different viewpoints</p> <p>Investigates turning and flipping objects in order to make shapes fit and create models; predicting and visualising how they</p> | <p>Uses informal language and analogies, (e.g. heart-shaped and hand-shaped leaves), as well as mathematical terms to describe shapes</p> <p>Enjoys composing and decomposing shapes, learning which shapes combine to make other shapes</p> | <p>Spots patterns in the environment, beginning to identify the pattern "rule"</p> <p>Chooses familiar objects to create and recreate repeating patterns beyond AB patterns and begins to identify the unit of repeat</p> | <p>Enjoys tackling problems involving prediction and discussion of comparisons of length, weight or capacity, paying attention to fairness and accuracy</p> <p>Becomes familiar with measuring tools in everyday experiences and play</p> |

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| | <p>ways with a wide range of objects</p> <p>Begins to conceptually subitise larger numbers by subitising smaller groups within the number.</p> <p>In practical activities, adds one and subtracts one with numbers to 10</p> <p>Begins to explore and work out mathematical problems, using signs and strategies of their own choice, including standard numerals, tallies and "+" or "-"</p> | | <p>will look (spatial reasoning)</p> <p>May enjoy making simple maps of familiar and imaginative environments, with landmarks</p> | <p>Uses own ideas to make models of increasing complexity, selecting blocks needed, solving problems and visualising what they will build</p> | | <p>Is increasingly able to order and sequence events using everyday language related to time</p> <p>Beginning to experience measuring time with timers and calendars</p> |
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Key Vocabulary

Number, zero, one, two, three... to twenty and beyond zero, ten, twenty... one hundred, none, how many...? count, count (up) to, count on (from, to) count back (from, to) more, less, many, odd, even, pattern, pair, guess, subitise, how many, estimate, add, more, make, total altogether, double, equal, same, same as, order, first, second, third... tenth, last, first, before, after, between above, below

End of KS1 National Curriculum Expectations

Children working at the end of year expected standard will be able to:

- read scales*1 in divisions of ones, twos, fives and tens
- partition any two-digit number into different combinations of tens and ones, explaining their thinking verbally, in pictures or using apparatus
- add and subtract any 2 two-digit numbers using an efficient strategy, explaining their method verbally, in pictures or using apparatus (e.g. $48 + 35$; $72 - 17$)
- recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships (e.g. If $7 + 3 = 10$, then $17 + 3 = 20$; if $7 - 3 = 4$, then $17 - 3 = 14$; leading to if $14 + 3 = 17$, then $3 + 14 = 17$, $17 - 14 = 3$ and $17 - 3 = 14$)
- recall multiplication and division facts for 2, 5 and 10 and use them to solve simple problems, demonstrating an understanding of commutativity as necessary
- identify $1/4$, $1/3$, $1/2$, $2/4$, $3/4$ of a number or shape, and know that all parts must be equal parts of the whole
- use different coins to make the same amount
- read the time on a clock to the nearest 15 minutes
- name and describe properties of 2-D and 3-D shapes, including number of sides, vertices, edges, faces and lines of symmetry.

Year 1

Maths Skills Progression

| Number and place value | Addition and subtraction | Multiplication and division | Fractions | Measurement | Geometry- property of shape | Statistics |
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| <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>Given a number, identify one more and one less</p> <p>Use the language of: equal to, more than, less than (fewer), most, least</p> <p>Identify and represent numbers using objects and pictorial representations including the number line</p> <p>Read and write numbers from 1 to 20 in numerals and words.</p> | <p>Represent and use number bonds and related subtraction facts within 20</p> <p>Add and subtract one-digit and two-digit numbers to 20, including zero</p> <p>Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs</p> <p>Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 - \square = 9$</p> | <p>Count in multiples of twos, fives and tens</p> <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>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>Compare, describe and solve practical problems for:</p> <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] <p>Sequence events in chronological order using language [e.g. before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]</p> <p>Measure and begin to record the following:</p> <ul style="list-style-type: none"> * lengths and heights * mass/weight * capacity and volume | <p>Recognise and name common 2-D and 3-D shapes, including:</p> <ul style="list-style-type: none"> * 2-D shapes [e.g. rectangles (including squares), circles and triangles] * 3-D shapes [e.g. cuboids (including cubes), pyramids and spheres]. <p>Describe position, direction and movement, including half, quarter and three-quarter turns.</p> | |

Maths Skills Progression

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| | | | | <p>* time (hours, minutes, seconds)</p> <p>Recognise and know the value of different denominations of coins and notes</p> <p>Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.</p> <p>Recognise and use language relating to dates, including days of the week, weeks, months and years</p> | | |
| Key Vocabulary | | | | | | |
| <p>zero, one, two, three... to twenty and beyond zero, ten, how many...? count, count (up) to count on (from, to) count back (from, to) count in many, few units, ones tens exchange digit 'teens' number</p> | <p>+, add, more, plus make, sum, total altogether double, near double one more, two more... ten more how many more to make...? how many more is... than...? how much more is...? -, subtract, take (away), minus leave how many are left/left over?</p> | <p>double, near double half, halve count in array Groups of/equal groups altogether/total columns/rows share/share equally</p> | <p>whole half/ halves quarter/s equal parts share groups of split</p> | <p>Measure Size Compare guess, estimate nearly, roughly, close to, about the same as just over, just under length, width, height, long, short, tall high, low wide, narrow longer, shorter, taller, higher longest, shortest, tallest, highest</p> | <p>shape, pattern flat curved, straight round hollow, solid corner point, pointed face, side, edge, end sort make, build, draw cube cuboid pyramid sphere cone cylinder</p> | |

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| <p>the same number as, as many as equal to Of two objects/amounts: greater, more, larger, bigger less, fewer, smaller Of three or more objects/amounts: greatest, most, biggest, largest least, fewest, smallest</p> <p>one more, ten more one less, ten less compare order size before, after next between above, below</p> | <p>how many have gone? one less, two less, ten less... how many fewer is... than...? how much less is...? difference between half, halve =, equals, sign, is the same as</p> | | | <p>centimetres, cm weigh, weighs, balances heavy/light, heavier/lighter, heaviest/lightest balance, scales, weight capacity volume full half full empty holds container o'clock half past time</p> | <p>circle triangle square rectangle star size bigger, larger, smaller pattern repeating pattern match</p> | |
| Year 2 | | | | | | |
| Number and place value | Addition and subtraction | Multiplication and division | Fractions | Measurement | Geometry- property of shape | Statistics |
| <p>Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward</p> <p>Compare and order numbers from 0 up to 100; use and = signs</p> | <p>Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100</p> <p>Add and subtract numbers using concrete objects,</p> | <p>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)</p> <p>Recall and use multiplication and division facts for the</p> | <p><i>Pupils should count in fractions up to 10, starting from any number and using the 1/2 and 2/4 equivalence on the number line (Non Statutory Guidance)</i></p> | <p>Compare and order lengths, mass, volume/capacity and record the results using >, < and = Compare and sequence intervals of time</p> <p>Choose and use appropriate</p> | <p>Identifying shapes and their properties Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line</p> | <p>Interpret and construct simple pictograms, tally charts, block diagrams and simple tables</p> <p>Ask and answer simple questions by counting the number of objects</p> |

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| <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>Recognise the place value of each digit in a two-digit number (tens, ones)</p> <p>Use place value and number facts to solve problems</p> | <p>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 * adding three one-digit numbers <p>Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot</p> <p>Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.</p> <p>Solve problems with addition and subtraction: using concrete objects and pictorial representations, including those</p> | <p>2, 5 and 10 multiplication tables, including recognising odd and even numbers</p> <p>Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot</p> <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>Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts</p> | <p>Recognise, find, name and write fractions $1/3$, $1/4$, $2/4$ and $3/4$ of a length, shape, set of objects or quantity</p> <p>Write simple fractions e.g. $1/2$ of $6 = 3$ and recognise the equivalence of $2/4$ and $1/2$</p> | <p>standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature ($^{\circ}\text{C}$); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels</p> <p>Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value</p> <p>Find different combinations of coins that equal the same amounts of money</p> <p>Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change</p> <p>Tell and write the time to five minutes, including quarter past/to the hour</p> | <p>Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces</p> <p>Identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]</p> <p>Compare and sort common 2-D and 3-D shapes and everyday objects</p> <p>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)</p> <p>Order and arrange combinations of</p> | <p>in each category and sorting the categories by quantity</p> <p>Ask and answer questions about totalling and comparing categorical data</p> |
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| | involving numbers, quantities and measures applying their increasing knowledge of mental and written methods | | | 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. | mathematical objects in patterns and sequences | |
| Key Vocabulary | | | | | | |
| units, ones, tens, hundreds digit one-, two- or three-digit number 'teens' number place, place value stands for, represents exchange the same number as, as many as equal to Of two objects/amounts: greater, more, larger, bigger less, fewer, smaller Of three or more objects/amounts: greatest, most, biggest, largest least, fewest, smallest one more, ten more one less, ten less compare order | +, add, addition, more, plus make, sum, total altogether double, near double one more, two more... ten more... one hundred more how many more to make...? how many more is... than...? how much more is...? -, subtract, subtraction, take (away), minus leave, how many are left/left over? one less, two less... ten less... one hundred less how many fewer is... than...? how much less is...? difference between half, halve | Equal, unequal, groups, repeated addition, multiply, multiplication, lots of, array, multiplied by, multiple, share, grouping, division, divide by, times table, commutative, commutativity | part, equal parts fraction one whole one half, two halves one quarter, two... three... four quarters One third, two..three Unit fraction Non-unit fraction Numerator demonimator | length, width, height, long, short, tall, high, low wide, narrow, deep, shallow, thick, thin longer, shorter, taller, higher longest, shortest, tallest, highest... metre (m), centimetre (cm) ruler, metre stick, tape measure weigh, weighs, balances heavy/light, heavier/lighter, heaviest/lightest kilogram (kg), half-kilogram, gram (g) balance, scales, weight capacity full, half full empty holds, contains litre (l), half-litre, millilitre (ml) container | 2-D shape, 3-D shape, sides, vertex, vertices, line of symmetry, vertical, horizontal, circle, semi-circle, triangle, square, rectangle, oblong, quadrilateral, pentagon, hexagon, heptagon, octagon, sphere, pyramid, square-based pyramid, triangular-based pyramid, cube, cuboid, triangular prism, pentagonal prism, hexagonal prism, cylinder, cone, polygon, odd, faces, edges, sort, group, curved surface, pattern, repeating pattern, symmetrical pattern. | count, tally, sort, vote graph, block graph, pictogram represent group, set same, different list, table label, title most popular, most common least popular, least common |

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| <p>size first, second, third... tenth... twentieth twenty-first, twenty-second... last, last but one before, after next between, half-way between above, below</p> | <p>=, equals, sign, is the same as tens</p> | | | <p>Temperature °C, Celsius, degrees Pound, pence, combine, value, worth, change, spend, difference, equal, amount, purchase, buy, greater value, lesser value, bar model, part-whole model, counting on, counting back, number line, coins, notes, swap, exchange, fewest, highest, most, least, more (as difference), combination, time hour, minute/s, second o'clock, half past, quarter to, quarter past watch, hands clock/watch,</p> | | |
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