

Mathematics: Overview



Nursery 2	<ul style="list-style-type: none"> • Take part in finger rhymes with numbers. • React to changes of amount in a group of up to three items. • Counting-like behaviour, such as making sounds, pointing or saying some numbers in sequence. • Count in everyday contexts, sometimes skipping numbers - '1-2-3-5.' • Combine objects like stacking blocks and cups. Put objects inside others and take them out again. • Compare amounts, saying 'lots', 'more' or 'same'. • Climb and squeezing selves into different types of spaces. • Build with a range of resources. • Complete inset puzzles. • Compare sizes, weights etc. using gesture and language - 'bigger/little/smaller', 'high/low', 'tall', 'heavy'. • Notice patterns and arrange things in patterns.
Nursery 3-4	<ul style="list-style-type: none"> • Fast recognition of up to 3 objects, without having to count them individually ('subitising'). • Recite numbers past 5. • Say one number 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'). • 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. • Solve real world mathematical problems with numbers up to 5. • Compare quantities using language: 'more than', 'fewer than'. • 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'. • 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'. • Make comparisons between objects relating to size, length, weight and capacity. • 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. • Talk about and identifies 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...'

Reception	<ul style="list-style-type: none"> • Count objects, actions and sounds. • Subitise. • Link the number symbol (numeral) with its cardinal number value. • Count beyond ten. • Compare numbers. • Understand the 'one more than/one less than' relationship between consecutive numbers. • Explore the composition of numbers to 10. • Explore the composition of numbers to 10. • Automatically recall number bonds for numbers 0–10. • Select, rotate and manipulate shapes in order 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. • Continue, copy and create repeating patterns. • Compare length, weight and capacity.
ELG	<p>ELG: Number Children at the expected level of development will:</p> <ul style="list-style-type: none"> • 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. <p>ELG: Numerical Patterns Children at the expected level of development will:</p> <ul style="list-style-type: none"> • 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.



Mathematics: Termly Milestones



Number (1/4)

		Counting and Subitising	Comparing Number	Numerical Patterns
N2	Aut	<p>Counting Behaviours</p> <ul style="list-style-type: none"> Participates in number rhymes. Sometimes points to objects as they 'count'. Points to characters in a story and make sounds. Can spontaneously recite number names, sometimes missing out numbers e.g.: '1, 2, 4, 5' <p>Sorting Behaviours</p> <ul style="list-style-type: none"> Can place items into sets e.g.: put all the red items in a basket. 	<p>Developing vocabulary</p> <ul style="list-style-type: none"> Uses 'more', 'lots' and 'same' to describe amounts. Can compare visually without counting items. 	
	Spr	<p>Counting Behaviours</p> <ul style="list-style-type: none"> Starts to show counting behaviours in everyday contexts e.g: lunchtime and tidy up time. Repeats modelled counting language. Developing more accuracy when reciting number names. Can recite a small selection of number rhymes with some support. <p>Sorting Behaviours</p> <ul style="list-style-type: none"> Can attempt to count how many items in a set. Can think of own ways to sort items into sets (e.g.: colour, type of animal, large/small) 	<p>Developing vocabulary</p> <ul style="list-style-type: none"> Notices changes in amount in a group and can make comments using key vocabulary learnt e.g.: 'all gone', 'more bears'. 	
	Sum	<p>Counting Behaviours</p> <ul style="list-style-type: none"> Can count items in different arrangements and know there are the same number of objects in a set. (Irrelevance principle) Recites numbers to 5, usually with accuracy. Physically point at or touch each object in turn when counting (one-to-one correspondence). 	<p>Developing vocabulary</p> <ul style="list-style-type: none"> Link vocabulary to real life situation e.g.: 'we need one more plate for lunch'. 	



Mathematics: Termly Milestones



Number (2/4)

		Counting and Subitising	Comparing Number	Numerical Patterns
N3-4	Aut	<p>Match and Sort</p> <ul style="list-style-type: none"> • Begin to sort objects according to colour, size or shape. <p>Link numerals and amounts/Counting:</p> <ul style="list-style-type: none"> • Showing the right number of objects to match the numeral for 1 and 2. • Recite numbers to 5 • Begin to show 'finger numbers' up to 5 when joining number songs and rhymes • Say one number for each item in order: 1,2,3,4,5. • Recite numbers beyond 5 • Subitise small groups of objects. 		
	Spr	<p>Match and Sort</p> <ul style="list-style-type: none"> • Find and match objects which are the same. • Sort objects according to different criteria. • Sort the same set of objects according to different criteria. <p>Link numerals and amounts/Counting:</p> <ul style="list-style-type: none"> • Show 'finger numbers' up to 5 when joining number songs and rhymes • Say one number 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. • Experiment with their own symbols and marks as well as numerals. 		
	Sum	<ul style="list-style-type: none"> • Fast recognition of up to 3 objects, without having to count them individually ('perceptual subitising'). • Say when the number is the same. 	<ul style="list-style-type: none"> • Solve real world mathematical problems with numbers up to 5 • Compare quantities using language: 'more than', 'fewer than' 	



Mathematics: Termly Milestones



Number (3/4)

		Counting and Subitising	Comparing Number	Numerical Patterns
Reception	Aut	<p>Match and Sort</p> <ul style="list-style-type: none"> Find and match objects that are the same. Sort objects according to colour, size or shape. <p>Recognising 123 by counting or subitising:</p> <ul style="list-style-type: none"> Identify representations of 1,2 and 3 Match number names we say to numerals and quantities Count up to 3 objects in different arrangements by touching Use their own mark making to represent 1, 2 and 3 <p>Recognise a set of 4 and 5 objects by counting or subitising:</p> <ul style="list-style-type: none"> Identify representations of 4 and 5 Match number names we say to numerals and quantities. Count up to 4 and 5 objects in different arrangements by touching Use their own mark making to represent 4 and 5 	<ul style="list-style-type: none"> Use the vocabulary <i>fewer</i>, the <i>same</i> and <i>more</i>. <p>Compare 123:</p> <ul style="list-style-type: none"> Understand that as we count, each number is one more than the one before. Understand that as we count back, each number is one less than the one before. Make comparisons between groups of 1, 2 and objects. <p>Explore 1 more or 1 less than numbers to 5:</p> <ul style="list-style-type: none"> Understand the 'one more than/one less than' relationship between consecutive numbers.to 5 To compare groups of identical of objects using accurate mathematical vocabulary To compare groups of objects that are arranged differently and with objects of different sizes 	<p>Composition of 1,2 and 3:</p> <ul style="list-style-type: none"> Explore and notice the different compositions of 2 and 3.
	Spr	<p>Recognise 6 and 7 by counting or subitising:</p> <ul style="list-style-type: none"> Identify representations of 6 and 7 Count up to 6 and 7 objects in different arrangements by touching Match number names we say to numerals and quantities. Use their own mark making to represent 6 and 7 <p>Recognise 6 and 7 by counting or subitising:</p> <ul style="list-style-type: none"> Explore the composition of 6 and 7 <p>Recognise and represent 8 and 9:</p> <ul style="list-style-type: none"> Identify representations of 8 and 9 Match number names we say to numerals and quantities. <p>Recognise and represent 10:</p> <ul style="list-style-type: none"> Identify representations of 10 Match number names we say to numerals and quantities. 	<p>Compare numbers to 5:</p> <ul style="list-style-type: none"> Make comparisons between groups of 0-5 objects. Use the number name zero and numeral 0 accurately. To compare groups identical of objects and of objects that are arranged differently and with objects of different sizes. <p>Compare numbers to 10:</p> <ul style="list-style-type: none"> Make comparisons between groups of 0-10 objects by counting and comparing where they fall in the counting order Make comparisons between groups of objects by lining them up next to each other. 	<p>Composition of number:</p> <ul style="list-style-type: none"> Explore and notice the different compositions of 4 and 5. Explore the composition of 6 and 7 Explore the composition of 8 and 9 Begin to explore the composition of 10 <p>Number Bonds to 10:</p> <ul style="list-style-type: none"> Explore number bonds to 10 using real objects Find how many more to make 10
	Sum	<p>Count beyond 10:</p> <ul style="list-style-type: none"> Count verbally beyond 20, pausing at each multiple of 10 to draw out the structure. Count beyond 10 using number tracks. Spot patterns in 2-digit numbers. <p>Link the number symbol (numeral) with its cardinal number value.</p> <ul style="list-style-type: none"> Recognise numerals 0-10. Accurately count sets of objects to 10. Match sets of objects or actions with the correct numeral. 	<p>Comparing numbers to 10:</p> <ul style="list-style-type: none"> Divide numbers into equal groups. Use 'the same' to describe identical sized groups. 	<p>Continue explore the composition of numbers to 10:</p> <ul style="list-style-type: none"> Partition and recombine sets. <p>Automatically recall number bonds:</p> <ul style="list-style-type: none"> Automatically recall number bonds for numbers 0–5. Use visual models such as a 10's/ fingers frame to identify how many more to make numbers 0-10. Recall number bonds to 10.

Mathematics: Termly Milestones



Number (4/4)

	Counting and Subitising	Comparing Number	Numerical Patterns
Year 1	<p>In the National Curriculum for Year 1: Pupils should be taught to:</p> <ul style="list-style-type: none"> 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 Count in multiples of twos, fives and tens Identify and represent numbers using objects and pictorial representations including the number line Read and write numbers from 1 to 20 in numerals and words 	<p>In the National Curriculum for Year 1: Pupils should be taught to:</p> <ul style="list-style-type: none"> Given a number, identify one more and one less Use the language of: equal to, more than, less than (fewer), most, least 	<p>In the National Curriculum for Year 1: Pupils should be taught to:</p> <ul style="list-style-type: none"> 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. Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$. 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. 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.



Mathematics: Termly Milestones



Shape, Space and Measure (1/3)

		Position and Direction	Measure	Pattern	Shape and Space
N2	Aut			<ul style="list-style-type: none"> Observes naturally occurring patterns Follow patterns of movements 	<ul style="list-style-type: none"> Can create a tower with stacking cups. Puts stacking cups back inside each other.
	Spr	<ul style="list-style-type: none"> Can climb 'up' and 'down' a ladder on a vocal or visual instruction. Can place teddy 'inside' or 'outside' a box on a vocal or visual instruction. 	<ul style="list-style-type: none"> Describe sizes of objects using words 'big/small'. Describe height of objects using 'high/low'. Describe mass of objects using 'heavy/light'. 	<ul style="list-style-type: none"> Can copy a simple pattern modelled by an adult. 	<ul style="list-style-type: none"> Can select a container to fit a certain object. Climbs into a variety of different types of spaces. Can complete a simple inset puzzle.
	Sum		<ul style="list-style-type: none"> Compare sizes of objects when provided with objects with a marked difference in size and height. Use bucket scales to weigh objects. Use bucket scales to decide which object is heavier/lighter. 	<ul style="list-style-type: none"> Recreate patterns observed in real life or in pictures. 	<ul style="list-style-type: none"> Can build tower and select blocks of appropriate size and shape.
N3-4	Aut	<ul style="list-style-type: none"> Understand position through words alone – for example, "The bag is under the table," – with visual cues. 	<ul style="list-style-type: none"> Make comparisons between objects relating to size, length, weight and capacity. 	<ul style="list-style-type: none"> Talk about and identifies the patterns around them. For example: stripes on clothes, designs on rugs and wallpaper. Use informal language like 'pointy', 'spotty', 'blobs' etc. 	<ul style="list-style-type: none"> Select shapes appropriately: flat surfaces for building, a triangular prism for a roof etc. Notice and talk about shapes in environment. Talk about and explore 2D shapes (for example, circles, rectangles, and triangles) using informal and mathematical language: 'sides', 'corners'; 'straight', 'flat', 'round'
	Spr		<ul style="list-style-type: none"> Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then...' 	<ul style="list-style-type: none"> Extend and create ABAB patterns – stick, leaf, stick, leaf. 	<ul style="list-style-type: none"> Talk about and explore 3D shapes using informal and mathematical language: 'sides', 'corners'; 'straight', 'flat', 'round'. Combine shapes to make new ones – an arch, a bigger triangle etc.
	Sum	<ul style="list-style-type: none"> Describe a familiar route using spatial words. Discuss routes and locations, using words like 'in front of' and 'behind'. Understand and use positional language through words alone. 	<ul style="list-style-type: none"> Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then...' 		





Shape, Space and Measure (2/3)

		Position and Direction	Measure	Pattern	Shape and Space
Reception	Aut		<ul style="list-style-type: none"> Compare and order objects according to their size. Use mathematical language to describe size <p>Compare length, weight, and capacity:</p> <ul style="list-style-type: none"> Compare length using appropriate mathematical vocabulary <p>Time and Sequencing:</p> <ul style="list-style-type: none"> Use time related vocabulary to talk about their day 	<ul style="list-style-type: none"> Copy, continue and create simple repeating patterns. Explore AB patterns in a range of contexts. 	<ul style="list-style-type: none"> Find 2D shapes within 3D shapes.
	Spr		<p>Compare length, weight, and capacity:</p> <ul style="list-style-type: none"> Compare mass using appropriate mathematical vocabulary. Compare the capacity of different containers. 	<ul style="list-style-type: none"> Talk about patterns in the environment. spatial reasoning skills. Copy and continue repeating patterns with varying rules (including AB, ABB and ABBC) 	<p>Rectangles and Squares:</p> <ul style="list-style-type: none"> Recognise shapes in everyday objects and the environment. Describe some properties of rectangles and squares <p>Shape and Spatial Reasoning:</p> <ul style="list-style-type: none"> Select, rotate and manipulate shapes in order to develop spatial reasoning skills.
	Sum		<p>Compare length, weight and capacity.</p> <ul style="list-style-type: none"> Use comparative language accurately. Make a reasonable estimate about capacity. Make a reasonable estimate about length of something. (non-standard units such as footsteps) 	<ul style="list-style-type: none"> Continue and create repeating patterns with varying rules (including AB, ABB and ABBC) 	<ul style="list-style-type: none"> Copy complex 2D pictures with 3D resources <p>Compose and decompose shapes</p> <ul style="list-style-type: none"> Investigate how shapes can be combined to make new shapes. Identify shapes within shapes. Predict what shapes they will make when paper is folded.





Shape, Space and Measure (3/3)

	Position and Direction	Measure	Pattern	Shape and Space
Year 1		<p>In the National Curriculum for Year 1: Pupils should be taught to:</p> <ul style="list-style-type: none"> 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] Measure and begin to record the following: lengths and heights, mass/weight, capacity and volume, time (hours, minutes, seconds) 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 		<p>In the National Curriculum for Year 1: Pupils should be taught to:</p> <ul style="list-style-type: none"> Recognise and name common 2-D and 3-D shapes, including: 2-D shapes [for example, rectangles (including squares), circles and triangles] and 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]. Describe position, direction and movement, including whole, half, quarter and threequarter turns

