



“Small Numbers, Big Ideas”

Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. By providing frequent and varied opportunities to build and apply this understanding - such as using manipulatives, including small pebbles and tens frames for organising counting - children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. It is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, ‘have a go’, talk to adults and peers about what they notice and not be afraid to make mistakes.

EYFS Programme of Study – Statutory Framework for EYFS 2021

Daily Opportunities to Develop Number:

- Calendar / Time / Sequencing: Days of the week, Number of days in a month, months, in the year, ordinal language (first, then and next)
- How many children are present/ absent? (whole class/part class)
- Birthdays
- Add a number whenever possible in instructions “please can you pass me 2 pencils?”
- Tidying up: Label pots with an appropriate number e.g. 5 pairs of scissors, then extend up to 10 when appropriate
- Lining up counting the class
- Counting down to the carpet or the end of a task
- Daily story/picture book: some days read it as a mathematician and explicitly tell them this – e.g. how many ducks in the ponds, time sequences, ordinal positioning – what maths can we see?

End of Year Early Learning Goals:

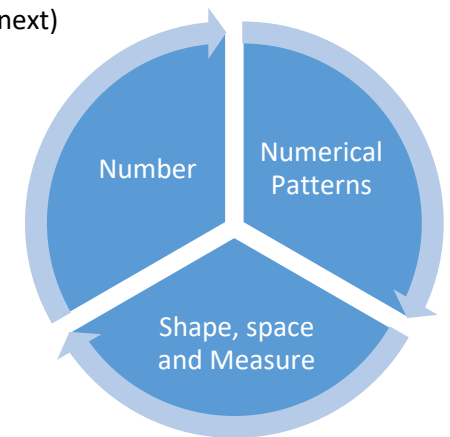
Number:

- 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:

- 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

Please note – No Early Learning Goal for Shape, Space and Measure



Possible Lines of Enquiry/ Continuous Provision Throughout the Year	<p>N: Nursery rhymes/ number songs/ number books, picture books, Dice Games, Dominoes, Numicon exploration, Counting things that cannot be moved, Counting things of different sizes, Counting of things that cannot be seen, numicon in continuous provision (printing, playdough, in sand, in water, rubbing), feely bags, matching tasks, sharing 'labelling' errors to correct, prediction tasks</p> <p>Number blocks: See overview for chapters to use and supporting PowerPoints</p> <p>Number Sense Maths: NP: See overview for daily number facts long term map</p> <p>Maths through stories website: https://www.mathsthroughstories.org/recommendations.html</p> <p>NP: Natural resources to create patterns with, forest schools, peg boards, Lego, construction, shapes, sharing sequence errors to fix, role play, digit cards and number tracks in continuous provision, beebots</p> <p>SSM: Nursery rhymes, picture books, story books, jigsaw, post boxes, printing, circuits e.g., complete train tracks, construction, puzzles, magnet shapers, hammer boards, shape games e.g., what is in the bag?, solving a design problem for a character e.g. Nursery rhymes/ number songs/ number books, picture books, making pictures with found materials as well as structured shapes and blocks, scales and measuring equipment to explore for a given purpose (linked to a theme), role play, junk modelling, tangrams, magnets, maps, treasure hunts, plans, beebots, remote controlled toys, small world, exploring shapes from various orientations</p> <p>Spatial Reasoning support and activity ideas: https://queensu.ca.panopto.com/Panopto/Pages/Viewer.aspx?id=ff1b524e-7b5a-4569-bc29-aeca00e95d77</p>
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Autumn 1	Knowledge and Skills to be Taught	Vocabulary and Stem Sentences (encourage full sentence responses where appropriate)	Key Representations	Assessment Checkpoints	Year 1 Autumn 1
Number (N)	<p>Note: Refer to NP and SSM to explore patterns and sorting prior to starting number skills</p> <ul style="list-style-type: none"> Anything can be counted up to 5 (abstract principle) The same things can be counted in any order (order irrelevance principle) Counting and saying how many up to 5 (cardinal principle) Composition of numbers up to 5: 0, 1, 2, 3, 4, 5 – know that all of the numbers can be made up of 1s Subitising numbers 1- 5 Linking the quantity and the 'label' of the number up to 5 	<p>Number</p> <p>Subitise</p> <p>Digit</p> <ul style="list-style-type: none"> What do you notice? How many can you see? Can you see ____? (A number in a real life image) Can you show me the same number on your fingers? I can see a group of ____. I know the number ____ is made up of ____ ones. This shows ____. This does not show ____. 	<p>Real life objects</p> <p>5 Frames</p> <p>Cubes to link and separate</p> <p>Regular dot patterns</p> <p>Irregular dot patterns</p> <p>Photos of real-life objects in a collection to subitise</p> <p>Numicon</p> <p>(Note: Numicon represents a quantity but is one piece and the 'holes' correct amount of parts so introduce this at an appropriate time and model use)</p>	<p>Can count a group of objects up to 5</p> <p>Can show 1:1 correspondence to 5</p> <p>Can recognise subitising patterns to 5 (regular patterns)</p>	<p>Place value within 10:</p> <p>Counting forwards and backwards</p> <p>Identify one more and one less and equal to</p> <p>Addition and subtraction within 10:</p> <p>Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs</p>

Numerical Patterns (NP)	<ul style="list-style-type: none"> Using shapes and objects: <ul style="list-style-type: none"> Continue simple patterns e.g. AB, ABB, ABBC on a line Continue simple patterns as stated above on a curved line (Link to SSM) Counting verbally to 5 (Link to N) 	Pattern Sequence Continue <ul style="list-style-type: none"> My pattern has ____. 		Shapes Real life objects Pegs Numicon: staircase	Can recite numbers to 5 Can repeat and make a simple repeating pattern	
Shape, Space and Measure (SSM) (Including Spatial Reasoning)	<ul style="list-style-type: none"> Sorting and grouping shapes and explaining their reasoning for the groups and ensure children understand it can be done by a range of attributes Shapes to explore and focus on when learning the number: <ul style="list-style-type: none"> Circle (1 side) Triangle (3 sides) Quadrilateral: Square and rectangle (4 sides) Pentagon (5 sides) 	Circle Triangle Quadrilateral Square Rectangle Pentagon	Sides Corners Straight Curved Face Equal Sort	Shapes Real life objects of various shapes Note: Ensure varied orientations and sizes so not to overgeneralise e.g., triangle properties are three straight sides and one face no matter how it is drawn – it is never an ‘upside down triangle’ Note: When a shape can be picked up it has 3D dimensions so make sure 2D examples are shown on paper/IWB	Can name taught 2D shapes and beginning to describe properties	
		<ul style="list-style-type: none"> What is the same and what is different? I know it is a _____ because it has _____ sides I have chosen to sort my shapes by _____. 				

Autumn 2	Knowledge and Skills to be Taught	Vocabulary and Stem Sentences (encourage full sentence responses where appropriate)		Key Representations	Assessment Checkpoints	Year 1 Autumn 2
Number (N)	<ul style="list-style-type: none"> 1:1 correspondence Fiveness of 5 Comparing quantity Large and small quantities onto requiring counting skills Numbers to 5 using manipulatives to see Number bonds to 5 Explore doubling and halving within 5 Estimation of identifying numbers up to 5 Continue linking the quantity and the 'label' of the number up to 5 Verbally counting to 20 and beyond using a known context e.g. number of children in the class 	Number Subitise Digit Double Half Equal Unequal Number Bonds Compare Larger/smaller More than/less than <ul style="list-style-type: none"> What do you notice? How many can you see? Can you see ____? (A number in a real-life image) This shows ____. This does not show ____. Can you show me the same number on your fingers? I can see a group of ____. I know the number ____ is made up of ____ ones. ____ and ____ make ____. 		Real life objects 5 Frames Cubes to link and separate Regular dot patterns Irregular dot patterns Numicon Note: Numicon represents a quantity but is one piece and the 'holes' correct amount of parts so introduce this at an appropriate time and model use	Can recognise subitising patterns to 5 (regular and irregular patterns) Can double a given number (0-5) Can explain we can halve an even number to create to equal whole number parts	Place Value within 20: Counting forwards and backwards Identify one more and one less and equal to Addition and Subtraction: Add and subtract one-digit and two-digit numbers to 20 Represent and use number bonds and related subtraction facts within 20
Numerical Patterns (NP)	<ul style="list-style-type: none"> Odd and even numbers to 5 Making patterns: AB, ABB, ABBC on a straight line, on a curve, within a square pattern, within a circle 	Pattern Sequence Continue Odd Even <ul style="list-style-type: none"> My pattern has ____. I know it is an even/odd number because ____. 		Numicon Shapes Real life objects	Can explain that some numbers are even and odd Can repeat and make a repeating pattern with more than 2 units	
Shape, Space and Measure (SSM)	<ul style="list-style-type: none"> Comparing quantity of objects through spatial awareness e.g., a few large objects taking up more 'space' than lots of small objects Identify 2D shapes that have taught so far on 3D shapes Positional language through a context 	Larger/smaller More than/less than Circle Triangle Quadrilateral	Corners Straight Curved Face Equal In	Real life examples of 3D shapes Building blocks in the construction area	Can state which group of objects has more.	2D and 3D shape: Recognise and name common 2-D and 3-D shapes

(Including Spatial Reasoning)		Square Rectangle Pentagon Cube Cuboid Sphere Prism Cylinder Cone Sides	On Under In between Next to In front of Down Forwards/backwards	3D shapes	Can identify groups that are more, less or equal Can state which group of objects has more. Can say which is larger by counting or matching one-to-one	
		<ul style="list-style-type: none">• What is the same and what is different?• I know it is a _____ because it has _____ sides• I have chosen to sort my shapes by _____.			Can describe the location of something using accurate/ appropriate positional language – on, under, next to	

Spring 1	Knowledge and Skills to be Taught	Vocabulary and Stem Sentences (encourage full sentence responses where appropriate)	Key Representations	Assessment Checkpoints	Year 1 Spring 1
Number (N)	<ul style="list-style-type: none"> Exploring five and a bit Numbers to 10: <ul style="list-style-type: none"> Subitising Partitioning Composition Linking the quantity and the 'label' of the number up to 10 Estimation of numbers up to 10 Comparing numbers up to 10 discussing strategies – can we 'just look', subitise or do we need to count (ensure some groups are equal) Exploring part/part wholes through objects and understanding that some can be taken apart and some can't Exploring parts and wholes through number linked to composition of number Verbally counting to 20 and beyond 	All number vocabulary from Autumn Term Whole/parts <ul style="list-style-type: none"> What do you notice? How many can you see? Can you see ____? Can you show me the same number on your fingers? I can see a group of _____. I know the number ____ is made up of ____ ones. ____ and ____ make ____. I have 5 and ____ more. 5 and ____ make ____. ____ and ____ make ____. ____ is equal to ____ and ____. 	Real life objects 5 Frames 10 Frames Cubes to link and separate and to compare for more/less/equal to Regular dot patterns Irregular dot patterns Numicon Dice Part/Part/Whole diagrams to physically move objects on	Can practically represent number bonds to 10. Can recognise 1-10 and can exchange Numicon for correct number of objects. Recognising the pattern of the counting system.	Addition and subtraction within 20: Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations Missing number problems such as $7 = ? - 9$.

Numerical Patterns (NP)	<ul style="list-style-type: none"> Retrieval of counting forwards and backward to 10 	<p>Next Forwards Backwards Sequence Continue One more/one less</p> <ul style="list-style-type: none"> One more/less than ____ is ____. ____ is one more/less than ____. 	<p>Number tracks</p>  <p>Note: Number lines are not introduced to Year 1 until Spring/Summer</p> <p>Number beads</p>	<p>Can compare two numbers and say which is the larger.</p>	
Shape, Space and Measure (SSM) (Including Spatial Reasoning)	<ul style="list-style-type: none"> Recap known shapes so far Shapes to explore and focus on when learning the number: <ul style="list-style-type: none"> Hexagon (6 sides) Heptagon (7 sides) Octagon (8 sides) Further exploration of 2D shapes that the children can find in 3D shapes Measuring length and height: Comparing and ordering through estimation skills and aligning physical objects to compare and then using non-standard objects within 10 	<p>All shape vocabulary from Autumn Term Hexagon Heptagon Octagon Length, long, longer, longest, tall, taller, tallest, short, shorter, shortest</p> <ul style="list-style-type: none"> What is longer/taller than a ____ (given reference)? I wonder which ____ will the shortest/longest? What is the same and what is different? I know it is a ____ because it has ____ sides. 	<p>Real life examples of 3D shapes</p> <p>Building blocks in the construction area</p> <p>3D shapes</p> <p>Ropes/string etc. to support comparing length</p> <p>Cubes</p>	<p>Can name taught 2D shapes and begin to describe properties</p> <p>Can find something longer or shorter than a reference item</p> <p>Can use the language of measure e.g., longer, shorter, heavier etc.</p>	

Spring 2	Knowledge and Skills to be Taught	Vocabulary and Stem Sentences (encourage full sentence responses where appropriate)	Key Representations	Assessment Checkpoints	Year 1 Spring 2
Number (N)	<ul style="list-style-type: none"> Number bonds to 10 Explore addition and understand that when we add we get 'more' (to be taught after one less, one more as stated in NP) Explore adding one and how this has a difference of 1 Explore adding more than one with numbers within 10 Explore doubling and halving within 10 (Double 1, 2, 3, 4, 5 and halve 0-10) Estimation discussions where appropriate Verbally counting to 20 and beyond 	<p>All number vocabulary taught so far.</p> <ul style="list-style-type: none"> What do you notice? How many can you see? Can you show me the same number on your fingers? I can see a group of ____. I know the number ____ is made up of ____ ones. ____ is equal to ____. I have 5 and ____ more. ____ and ____ make ____. One more than ____ is ____. ____ is one more than ____. When we add ____ more to ____ we get ____. ____ and ____ make ____. Double ____ is ____. Half of ____ is ____. I have 2 equal groups. I have 2 unequal groups. 	<p>Real life objects</p> <p>10 Frames</p> <p>Numicon</p> <p>Cubes</p> <p>Counters/Double sided counters</p> <p>Number Tracks</p> <p>Rekenreks</p> <p>Dice</p> <p>Dominoes</p>	<p>Can show addition and subtraction and talk about it, explaining their reasoning.</p>	<p>Place Value within 50:</p> <p>Counting forwards and backwards</p> <p>Identify one more and one less and equal to</p>
Numerical Patterns (NP)	<ul style="list-style-type: none"> Odd and even numbers to 10 One more and one less to understand consecutive numbers having a difference of one 	<p>Sequence</p> <p>Continue</p> <p>One more/one less</p> <p>Difference</p> <p>Odd/even</p> <ul style="list-style-type: none"> I know it is an even/odd number because ____. 	<p>Numicon</p> <p>Number Tracks</p>	<p>Can predict how many there will be if you add or take away one.</p>	

Shape, Space and Measure (SSM) (Including Spatial Reasoning)	<ul style="list-style-type: none"> Explore properties of 3D shapes e.g., what is the best shape to And why? E.g., to build a bridge or roll an object Describe the properties of 3D shapes Identifying and securing the names of 3D shapes: Cube, Cuboid, Sphere, Prism, Cone, Cylinder 	All shape vocabulary taught so far. Properties <ul style="list-style-type: none"> I have chosen to use a _____ because _____ 	Real life examples of 3D shapes Building blocks in the construction area 3D shapes	Can name taught 2D and 3D shapes and describe their properties Can show intentionality in selecting shapes for a purpose, such as cylinders to roll? Can use the language of measure e.g., longer, shorter, heavier etc.	Length and Height: Compare, describe and solve practical problems. Measure and begin to record lengths and heights Weight and Volume: Compare, describe and solve practical problems. Measure and begin to record mass, weight and volume
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Summer 1	Knowledge and Skills to be Taught	Vocabulary and Stem Sentences (encourage full sentence responses where appropriate)	Key Representations	Assessment Checkpoints	Year 1 Summer 1
Number (N)	<ul style="list-style-type: none"> Exploring number problems to 10 including addition (Ensure use of graphical representation to represent mathematical thinking rather than modelling written number sentences) Exploring subtraction – recap one less from last term Explore how we can subtract more than one Estimation discussions where appropriate to support number sense and to build concept that the sum will be larger than their starting point Verbally counting to 20 and beyond 	<p>All number vocabulary taught so far.</p> <ul style="list-style-type: none"> One more than ____ is ____. One less than ____ is ____. ____ is one more than ____. ____ is one less than ____. When we add ____ more to ____ we get ____. ____ and ____ make ____. 	<p>10 Frames</p> <p>Part/Part/Whole diagrams to physically move objects on</p> <p>Number tracks</p> <p>Cubes</p> <p>Counters</p> <p>Numicon</p>	<p>Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as other quantity.</p> <p>Can apply their mathematical knowledge e.g., of number bonds in mathematical exploration</p>	<p>Fractions: Recognising, find and name $\frac{1}{2}$ and $\frac{1}{4}$ of an object, shape or quantity</p>
Numerical Patterns (NP)	<ul style="list-style-type: none"> Within in 10 explore patterns physically when adding: <ul style="list-style-type: none"> Even numbers to an even number Even number to an odd number Odd number to an odd number 	<ul style="list-style-type: none"> What do you notice? An ____ and an ____ make an ____ number e.g., an even and an even number make an even number 	<p>Numicon</p> <p>10 Frames</p>		<p>Multiplication: Counting on 2s, 5 and 10s</p>
Shape, Space and Measure (SSM) (Including Spatial Reasoning)	<ul style="list-style-type: none"> Making their own 3D shapes from 2D shapes and describe these using properties Explore relationships within shapes e.g., triangles in a hexagon Understand how to recreate images from someone else's view Build structures by copying pictures e.g. using instruction diagrams to build a castle using blocks Capacity and weight – comparing and measuring using estimation and then exploration with non-standard units 	<p>All shape vocabulary taught so far.</p> <p>Weight Heavy, heavier Light, lighter Capacity Volume</p> <ul style="list-style-type: none"> I can make a ____ (shape) from ____ (number) ____ (shape). E.g., I can make a hexagon from 6 triangles. I wonder which ____ will be the lightest/heaviest? 	<p>Real life examples of 3D shapes</p> <p>Building blocks in the construction area</p> <p>3D shapes</p> <p>Tangrams</p> <p>Scales</p> <p>Cubes</p>	<p>Can name some 2D and 3D shapes and beginning to describe properties</p> <p>Can use 2D shapes to make other shapes and name accordingly e.g. I used 6 squares to make a cube, or I used 6 triangles to make a hexagon.</p> <p>Can use the language of measure e.g., longer, shorter, heavier etc.</p>	<p>Position and Direction: Describe position, direction and movement e.g., whole, half and quarter and three-quarter turns</p>

Summer 2	Knowledge and Skills to be Taught	Vocabulary and Stem Sentences (encourage full sentence responses where appropriate)	Key Representations	Assessment Checkpoints	Year 1 Summer 2
Number (N)	<ul style="list-style-type: none"> Explore the relationship between addition and subtraction Exploring number problems to 10 including addition and subtraction (Ensure use of graphical representation to represent mathematical thinking rather than modelling written number sentences) Estimation discussions where appropriate to support number sense and to build concept that the sum will be larger/smaller than their starting point depending on the operation they are working on Explore equal distribution of quantities: identifying and making equal quantities Verbally counting to 20 and beyond Sharing: Exploring through physical exploration e.g., the picnic activity with a variety of objects to halve e.g., a liquid, a quantity, a whole (N Link) 	<p>All number vocabulary taught so far.</p> <ul style="list-style-type: none"> How could we draw this problem? Do we need to add or take away? How do you know? ___ is one more than ___. ___ is one less than ___. When we add ___ more to ___ we get ___. ___ and ___ make ___. When I add two whole numbers the total gets larger When I take away a whole number the total gets smaller ___ equal groups of ___ 	<p>Numicon</p> <p>10 Frames</p> <p>Part/Part/Whole diagrams</p> <p>Rekenreks</p> <p>Real life objects</p>	<p>Knows one more/less than a given number to 10</p> <p>Can show conceptual understanding of addition and subtraction by talking about it, explaining/showing their reasoning. (note: children are not required to use +, - and = symbols fluidly until Year 1 (See graphical representation support documentation for guidance))</p>	<p>Place Value to 100 Counting forwards and backwards Identify one more and one less and equal to Division: Distribute items fairly, e.g., put 3 marbles in each bag. Recognise when items are distributed unfairly.</p>
Numerical Patterns (NP)	<ul style="list-style-type: none"> Explore odd and even numbers e.g. children to make patterns of their own. Can they make a pattern where don't repeat the same number? Begin to explore patterns in numbers beyond 20 e.g. what do they notice on a hundred square or on a longer number track? What is the same and what is different? (e.g. with the teen numbers) 	<p>Equal groups</p> <p>Unequal groups</p> <p>Pairs</p> <p>odd</p> <p>Even</p>	<p>Real life examples of pairs</p> <p>Numicon</p> <p>10 Frames</p> <p>Number Tracks</p>		<p>Multiplication: Solve one-step problems involving multiplication and division using concrete objects, pictorial representations and arrays with the support of the teacher</p>

Shape, Space and Measure (SSM) (Including Spatial Reasoning)	<ul style="list-style-type: none"> Time: <ul style="list-style-type: none"> sequencing of daily events early exposure to know a clock tells us the time exploring the sense of size of a minute 	Share Divide Equal Unequal Groups Whole/parts Before After First, then, next Today Tomorrow <ul style="list-style-type: none"> _____ was before _____. Before I _____ I _____. First _____, then _____, next _____. A Clock can tell us what time of day it is. 	Real life objects to share Cubes Counters Variety of clocks	Can use the language of time e.g., yesterday and tomorrow	Time: Sequence events in chronological order using language e.g., before, after, next today and yesterday. Recognise and use language relating to dates Tell the time to the hour and half past the hour and draw the hands on a clock face Money: Recognise and know the value of different denominations of coins and notes
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Supporting Documents:

Appendix I: Numberblocks Overview/links – programs and PPTs

Appendix II: Principles of counting

Appendix III: Graphical Representation Support Guidance

Appendix IV: Pattern progression training PPT