St. John's Church of England Academy: Progression in Learning Framework – Mathematics

EYFS Statutory Educational Programme.

The curriculum needs to include:

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 r**elationships** 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.**

Knowledge	Skills
• ***Knowledge of Number – counting, cardinality, composition*** • ***Knowledge of shapes and space including properties of shapes and relationships between shapes*** • ***Knowledge of measure*** • ***Knowledge of pattern***	**Includes:** **counting, representing, subitising, comparing, creating patterns, partitioning, combining, sharing, measuring, describing, exploring, manipulating, reasoning, recall, abstract thinking**

Characteristics of Effective Learning that are relevant

Playing & Exploring	Active Learning	Creating and Thinking Critically
• Plan and think ahead about how they will explore or play with objects and resources • Make independent choices • Do things independently that they have been previously taught • Respond to new experiences that you bring to their attention • Apply learning to different contexts through their play and exploration	• Show goal-directed behaviour • Use a range of strategies to reach a goal they have set themselves • Begin to correct their mistakes themselves • Keep on trying when things are difficult	• Review their progress as they try to achieve a goal • Check how well they are doing • Solve real problems • Know more, so feel confident about coming up with their own ideas • Make more links between those ideas • Concentrate on achieving something that's important to them • Begin to predict sequences and patterns

ELG: Number	ELG: Numerical Patterns
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 to 5 (including subtraction facts) and some number bonds to 10, including double facts**	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 if 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**

Progression in Learning – Small Steps Nursery to KS1							
	Nursery			Reception			Interface with KS1
Number	Recites some numbers, not always in order	Recites numbers to 3 usually in the correct order	Recites numbers to 5 mostly in the right order.	Recites numbers to 5 from different starting points.	Mostly accurate reciting numbers to 10 from different starting points.	Confidently recites numbers to 120, from different starting points, in the right order. Recognises the pattern when counting.	*Includes:* Can count to and across 100, forwards and backwards Can count, read and write numbers to 100 in numerals; Can count in multiples of twos, fives and tens Can identify one more and one less Can use the language of: equal to, more than, less than (fewer), most, least Can read and write numbers from 1 to 20 in numerals and words
	Is beginning to use number names for each item, not always correctly	Can say number names for each item in order 1,2,3	'Tags' (reliably points or touches each item), using the stable order of 1,2,3,4,5 Can count things that cant be seen.	'Understands that when counting numbers are said in a certain order. Says one number for each item in order to 5. Counts out a smaller number from a larger group, knowing when to stop	Confident counting, crossing boundaries 9/10. Can count things that cannot be moved, such as birds at the bird table and says how many there might be before counting, and count to check (sets up to 10).	Can count, including crossing boundaries 9/10. Can count things that cannot be moved, such as birds at the bird table and says how many there might be before counting, and count to check (sets up to 10).	
	Attempts to count in play but may not understand the significance of the last number in the count	Counts in play and is beginning to understand the significance of the last number in the count	Says how many there are after counting and knows the last number counted is the total in the group.	Can link the number symbol with its cardinal value – to 5 Can sometimes recognise amounts that have been rearranged and is beginning to generalise that, if nothing has been added or taken away, then the amount is the same.	Can link the number symbol with its cardinal value – to 10. Can recognise amounts that have been rearranged and to generalise that still have the same amount. I understand that 0 (the number and the number symbol) represents nothing.	Can link the number symbol (numeral) with its cardinal number value – to 10 Can recognise amounts that have been rearranged and to generalise that still have the same amount almost all accurately. I understand that 0 (the number and the number symbol) represents nothing.	
	Can recognise groups of 1 without counting them individually	Can recognise up to 2 objects without counting them individually	Beginning to recognise up to 3 objects without having to count them individually	Is can quickly recognise up to 3 objects without having to count them individually with some accuracy and am beginning to recognise up to 5 objects without having to count them	Can recognise up to 5 objects without having to count them individually with some accuracy.	Can quickly recognise up to 5 objects accurately without having to count them individually.	

				individually with some accuracy.			
	Compares quantities – 'more than' – in play	Compares quantities – 'more than' 'fewer than' in play	Beginning to compare quantities (up to 5 objects) using words 'more than' 'less than' and fewer.	Compares quantities of objects of different sizes - 'more than' . 'less than' 'fewer' and 'the same as' 'equal (up to 5 objects) Can find 1 more and 1 less from a given number (within 5) and is beginning to understand the '1 more than/1 less than' relationship between sequential numbers.	Compares quantities of objects arranged in different ways - 'more than' 'less than' 'fewer' 'the same as' 'equal to', (up to 10 objects)	Compares quantities of objects arranged in different ways - 'more than' 'less than' 'fewer' 'the same as' 'equal to', (up to 10 objects)	
			Beginning to understand addition is the combining of sets of objects.	Understands the composition of numbers 2,3 Partitions sets of up to 3 objects using a part-part whole model Understands that addition is the combining of sets of objects	Mostly understands the composition of numbers 2,3,4 and 5. Can partition sets of up to 5 objects using part-part whole model with support. Understands that addition is the combining of sets of objects Beginning to explore and work out mathematical problems, using signs and strategies of own choice, including (when appropriate) standard numerals, tallies and '+' '_'.	Understands the composition of numbers 2,3,4 and 5. Can partition sets of up to 5 objects using part-part whole model with support. Understands that addition is the combining of sets of objects More confident exploring and working out mathematical problems, using signs and strategies of their own choice, including (when appropriate) standard numerals, tallies and "+" "-"	Can add and subtract one-digit and two-digit numbers to 20, including zero
	Experiments with own symbols and marks, which might include numerals	Experiments with recording quantities eg tallying, dots	Can write some numbers from 0-5	Can write numbers 0-5 mostly accurately.	Can write numbers 0-10 with some accuracy and recalls number bonds to 5 and some number bonds to 10.	Can write numbers 0-10 mostly accurately and can recall number bonds to 5 and most number bonds to 10.	Can represent and use number bonds
Fractions						Understands that halving is sharing into two equal parts	Recognises, and names a half as one of two equal parts of an object shape or quantity

						Understand that doubling is adding the same number to itself	
Pattern	Talks about patterns in the environment with adult support Arranges items in their own patterns	Can identify patterns around them	Beginning to create and extend ABAB patterns with shapes and numbers.	Continue, copy and re-create repeated patterns, using shapes and numbers (ABAB) and attempt more challenging patterns (ABBC). Can spot patterns in the environment, identifying the pattern 'rule'	Continue, copy repeated patterns , spotting errors. Starting to talk about patterns of numbers within 10.	Continue, copy and create repeating patterns, spotting errors Can talk about patterns of numbers within 10.	Can recognise and create patterns in the number system with objects and with shapes
Shape	Explores 2D and 3D shapes e.g. through block play, puzzles, modelling, using some shape names and related mathematical language Selects shapes appropriately e.g. cube/cuboid for a house Combines shapes to make pictures and simple constructions	Explores 2D and 3D shapes using a range of shape names and related mathematical language e.g. through block play, puzzles, modelling Combines shapes to make other shapes Selects shapes appropriately e.g. square house with triangle roof	Beginning to recognise and describe some 2D and 3D shapes e.g. circle, rectangle, triangle, square e.g. cube, cuboid, cylinder, cone and sphere.	Can recognise and describe some 2D shapes and explore and describe how many corners and sides 2D shapes have. Can plan to make models, selecting blocks needed, visualising what to build.	Can recognise and describe some 3D shapes: cube cuboid cylinder, cone, sphere. Beginning to use language such as faces, vertices, edges to describe 3D shapes.	Can recognise and describe some 3D shapes: cube cuboid cylinder, cone, sphere. Explores which shapes will roll and which will slide. Beginning to explain why using the vocabulary 'curved' and 'flat'. Beginning to use language such as faces such as faces, vertices, edges to describe 3D shapes.	Can recognise a range of 3D and 2D shapes and talk about their properties
Space	Uses ordinal vocabulary 'first' and 'last' in play Talks about familiar places Begins to remember their way around familiar environments eg knows where to find their favourite activity	Understands some positional language such as 'in' 'out' 'on' 'under' 'next to' 'behind' and uses some of this vocabulary Recalls some parts of a familiar route	Uses some positional vocabulary. Describes a familiar route using directional language.	Uses positional vocabulary 'in between' 'over' 'above' 'beneath' 'beside' Uses ordinal numbers to describe position in a line		Uses spatial language, including relative terms depending on viewpoints Follows and gives directions Turns and flips objects in order to make shapes fit and create models; predicting and visualising how they will look (spatial reasoning)	Can describe position, direction and movement

Measure	Uses big and small to compare size Explores 'heavy' and 'light' in play Explores 'full' and 'empty' in play Anticipates times of the day, such as mealtimes or home time	Uses long and short to compare length and tall and short to compare height Uses 'heavy' and 'light' to compare mass Uses 'full' and 'empty' to compare capacity Sequences a small number of familiar events	Begins to order items by length and weight using non-standard measures using correct vocabulary.	Can order 2/3 items by length and weight using non-standard measures, correctly using • tallest, shortest • full, empty, half full/empty Orders and sequences events using everyday language related to time	Starting to use a range of non-standard units for measuring making sensible choices depending on what is being measured e.g. cubes, wooden planks, small/large balances, spoons, buckets, with support of an adult. Solves some problems involving prediction and discussion of comparisons of length, weight or capacity, paying attention to fairness and accuracy	Uses a range of non-standard units for measuring making sensible choices depending on what is being measured e.g. cubes, wooden planks, small/large balances, spoons, buckets Is beginning to experience measuring time with timers and calendars Solves problems involving prediction and discussion of comparisons of length, weight or capacity, paying attention to fairness and accuracy.	Can describe and solve practical problems involving length, height, weight, capacity and time
							Recognises and knows the values of different denominations of coins and notes
Matching and sorting/ fractions	With support, explains how two objects are the same.	Understands the word 'matching' and can explain how 2 objects are the same.	Selects objects and pictures which are the same from a small group and think of a way to sort objects into 2 groups.	Selects objects and pictures from a group that are the same and thinks of different ways to sort groups of objects and pictures based on similar properties. Explains the 'rule' created to sort objects.	Makes pairs and understands that pairs are two.	Can make pairs and understands that pairs are two. Can arrange small quantities into pairs and recognise when quantities have an odd one left over with no partner.	