Hollyfast : 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 5 usually in the correct order	Recites numbers past 5 Has fun counting as far as they can go and is fascinated with large numbers	Recites numbers to 20 mostly in the right order	Recites numbers to 20 in the right order, and from different starting points Understands when counting that numbers are said in a certain order	Recites numbers beyond 20, from different starting points, in the right order Recognises the pattern when they are 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 of different sizes	'Tags' (reliably points or touches each item), using the stable order to 10 Can count things that can't be seen such as sounds, actions, words Can say how many there might be before counting, though not always accurately (sets up to 10)	Can say one number for each item in order, to 20 Counts out a smaller number from a larger group, knowing when to stop Can say, with some accuracy, how many there might be, before counting (sets up to 10)	Can count, including crossing boundaries 19/20 and 29/30. Can count things that cannot be moved, such as birds at the bird table	
	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 significant of the last number in the count	Know that the last number reached when counting a small set of objects tells you how many there are in total (cardinal principle)	Can say how many there are after counting, knowing that the last number in the count indicates the total number in a group	Can link the number symbol with its cardinal value – to 10 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 (numeral) with its cardinal number value – to 20 Can recognise amounts that have been rearranged and to generalise that, if nothing has been added or taken away, then the amount is the same.	
	Can recognise groups of 1 or 2 objects without counting them individually	Can recognise up to 3 objects without counting them individually	Can quickly recognise up to 3 objects without having to count them individually	Is beginning to recognise up to 5 objects without having to count them individually with some accuracy	Can recognise up to 5 objects without having to count them individually	Can quickly recognise amounts up to 5 when they are not in the 'regular' arrangement	
	Compares quantities – 'more than' – in play	Compares quantities – 'more than' 'fewer than' in play	Compares quantities where amounts in the groups are *obviously very different,* - 'more than' 'fewer than' 'the same'	Compares quantities where the *difference in amounts is less* - 'more than' 'less than' 'fewer' 'the same as' to compare collections (up to 10 objects)	Compares quantities of objects of different sizes - 'more than' . 'less than' 'fewer' and 'the same as' 'equal (up to 10 objects) Can find 1 more and 1 less from a given number and is	Compares quantities of objects arranged in different ways - 'more than' 'less than' 'fewer' 'the same as' 'equal to', (up to 10 objects)	

				Can find '1 more' from a given number within 10	beginning to understand the '1 more than/1 less than' relationship between sequential numbers	Can explain the '1 more than/ 1 less than' relationship between sequential numbers within 10	
			Is beginning to understand the composition of numbers 2 and 3 Partitions sets of 2 and 3 objects using a part-part whole model	Understands the composition of numbers 2,3,4,5 Partitions sets of up to 5 objects using a part-part whole model Understands that addition is the combining of sets of objects	Can partition sets of up to 10 into two groups, and recombine to make the same total Understands that subtraction is removing objects	Can partition sets of up to 10 into two groups, and recognises that the whole number can be recombined as pairs of numbers to make the same total Begins to explore and work 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	Experiments with writing numbers of personal significance	Know which pairs make a given number within 5 Can automatically recall double facts 1+1, 2+2 Can write numbers 0-5	Can automatically recall double facts within 10 Can write numbers 0-10	Can recall most number bonds to 10, including all double facts Can explain the pattern Can write numbers 0-20	Can represent and use number bonds
Fractions			Can 'share' from a whole or a quantity of objects with friends	Understands how to share a whole in equal parts	Understands how to share a whole or a quantity of objects into equal parts	Understands that halving is sharing into two equal parts Understand that doubling is adding the same number to itself	Recognises, and names a half as one of two equal parts of an object shape or quantity
Pattern	Talks about patterns in the environment with adult support Arranges items in their own patterns	Can identify patterns around them	Extend and create ABAB patterns with shape and number Can spot and correct an error in a ABAB pattern Creates their own spatial patterns showing some organisation or regularity	Continue, copy and re-create repeated patterns, using shapes and numbers (ABB) Can spot patterns in the environment, identifying the pattern 'rule'	Continue, copy and re-create repeated patterns using shapes and numbers (ABBC) Makes border patterns where the repeating pattern continues around an object or frame Can talk about some patterns of numbers within 10	Continue, copy and create repeating patterns, spotting errors Can talk about patterns of numbers within 10, including odds and evens and number facts	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 Makes simple constructions	Explores 2D and 3D shapes e.g. through block play, puzzles, modelling, using a range of shape names and related mathematical language Combines shapes to make other shapes Selects shapes appropriately e.g. square house with triangle roof	Explores and talks about 2D and 3D shapes e.g. circle, rectangle, triangle, square e.g. cube, cuboid, cylinder, cone using mathematical language e.g. sides, corners, flat, round Chooses items based on shape so they are appropriate for specific tasks Partitions and combines shapes to make new shapes using 2D and 3D shapes	Explores which shapes will roll and which will slide and is beginning to explain why using the vocabulary 'curved' and 'flat' Can recognise and describe 3D shapes: cube, cuboid, cylinder, cone, sphere Can recognise and describe 2D shapes: circle, rectangle, square, triangle,	Can recognise that the faces on a 3D shape often comprise of 2D shapes Explores and describes how many corners and sides 2D shapes have Can identify and describe a pentagon, a hexagon and an octagon Plans to make models, selecting blocks needed and visualising what they will build	Uses language such as faces, vertices, edges to describe 3D shapes Can recognise a wider range of 3D shapes, such as pyramids and triangular prisms Is able to compose and decompose 2D shapes recognising that a shape can have other shapes within it and which shapes combine to make other 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	Understands and uses positional language 'in' 'out' 'on' 'under' 'next to' 'behind' Predicts, moves and rotates objects to fit the space or create the shape they would like Describes a familiar route eg in a story using simple directional language	Is beginning to use positional vocabulary 'in between' 'over' 'above' 'beneath' 'beside' Describe a familiar route using directional language	Uses positional vocabulary 'in between' 'over' 'above' 'beneath' 'beside' Uses ordinal numbers to describe position in a line Engages with 3D and 2D map-making in familiar environments, sequencing landmarks and designing small worlds	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	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	Makes simple comparisons about: • length using longer, shorter, • height using taller, shorter, • weight using , heavier, lighter	Can order three items by length and weight using non-standard measures, correctly using • longest, shortest, • heaviest, lightest	Can order three items by height and capacity using non-standard measures, using • tallest, shortest • full, empty, half full/empty	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	Can describe and solve practical problems involving length, height, weight, capacity and time

	Anticipates times of the day, such as mealtimes or home time	**Sequences a small number of familiar events**	• **capacity using more/less full/empty** **Begins to respond to and use words such as 'before' 'after' 'soon' or 'later'**		**Orders and sequences events using everyday language related to time**	**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**	
	Explores money in play	**Explores money through first-hand experiences**	**Understands that items need to be paid for and can talk about what they would like to buy**	**Knows about the different ways we can pay for things**	**Recognises that there are different coins and notes**	**Can pay for items using 1p, 5p and 10p coins** **Can pay for items using £1 coins**	**Recognises and knows the values of different denominations of coins and notes**