Mathematics

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OUR CURRICULUM PROGRESSION

Educational Programme - 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 ten-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.

Our early years vision – *At Leverton Church of England Academy we want our children to have a deep understanding of the counting system, how to represent their ideas and how to approach problems that involve number, shape, space and measure. We recognise the importance of shape, space and measure and ensure that children are given opportunities to experience and explore these topics in more depth. We want our children to have gained the skills and knowledge within mathematics that prepare them for the next step in their educational journey. We ensure children have regular opportunities to explore with a variety of manipulatives and concrete objects to gain a thorough understanding of how mathematics builds upon each other and this is embedded before moving on to more pictorial representations of objects/numbers before adding in the abstract element of numerals and symbols. We want our children to leave EYFS with the ability to use the numerals and symbols required to fulfil the requirements of the National Curriculum*

Little Acorns 2-3yrs	Squirrels 3-4yrs	Owls - Reception
- To know and join in with some number songs and rhymes - To say numbers when playing - To count in everyday contexts - To begin to use fingers to show how many - To know when an amount has changed using words like 'more, lots, same' - To know parts can be combined such as blocks, animals etc - To know their way around a familiar environment such as going where to find things in Little Acorns - To know familiar routes such as going from Little Acorns to Willow class or from one part of the room to another - To know positional language and respond accordingly such as on top, under, inside - To match pieces in a puzzle - To match objects that are the same - To match silhouettes of objects - To match 2D shapes to one another, sometimes using their name - To notice differences in size – big, small - To notice differences in length – tall, short	- To recite numbers past 5 - To state without counting how many objects there are (up to 3) - To reliably count up to 5 objects using 1-1 correspondence - To know that the last number reached when counting objects is how many there are in total - To represent numbers 0-5 using fingers - To match the amount in a set to the numeral up to 5 - To show awareness of using symbols and marks as well as numerals - To solve simple real world problems related to addition with numbers up to 5 - To solve simple real world problems related to subtraction with numbers up to 5 - To know and identify the common 2D shapes – Triangle, square, circle, rectangle, - To use the language of straight, curved, round, flat to describe objects and shapes - To know and identify some 3D shapes – cube, sphere - To select shapes for a purpose. I.e. flat surfaces for building	**Number** **ELG – 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.** - To reliably count up to 20 objects using 1-1 correspondence - To reliably count up to 10 actions/sounds/pictures (that cannot be seen/moved) - To state without counting how objects there are (up to 5) - To verbally count forward to at least 20 - To know and name the numerals up to 10 - To write the numerals up to 10 - To order a set of quantities from 1-10 - To order a set of numerals from 1-10 - To match the amount in a set to the numeral up to 10 - To know and recall the number bonds to 5

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- To notice differences in capacity – empty, full - To know words related to time such as next, soon, later, after that	- To combine shapes for a purpose - To know language related to position through words along – under, on top, next to, behind, in front, over - To describe a familiar route using language of forward, sideways, up, down and other positional language - To make direct comparisons related to weight using the language of heavier/lighter - To make direct comparisons related to length using the language of longer/shorter - To make direct comparisons related to weight using the language of full/empty - To know that a pattern is something that repeats - To notice patterns in their environment and comment on these. (spotty, stripy) - To continue a simple repeating pattern ABAB - To begin to sequence events, real or fictional - To use the language of first, next, then to describe sequenced events	- To know when two sets of objects are the same amount - To know that doubling means making another set that is the same amount (within 10) - To know how to double numbers to double 5 **Numerical Patterns** **ELG – Verbally count beyond 30, 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.** - To know when there are different amounts/quantities - To know if there are more/less or the same amount when comparing groups - To compare two numerals and say which is greater than, less than or the same - To know that one less is the number that come before - To know that one more is the number that comes after - To find the number that is one less using a number line - To find the number that is one more using a number line - To count forward and backward on a number line - To find one more/less using number lines, objects and mental recall - To combine two parts to create 10 in different ways - To know and use a ten frame to create numbers up to 10 - To know that numbers beyond 10 will have at least one full 10 frame - To show awareness of how the teen numbers are made up of one ten and some ones - To know that 'whole' describes the total amount - To know that 'part' describes a portioned set of objects - To know that parts can be combined to make a whole - To use the part/part whole method to explore combining amounts and splitting amounts - To use the language of addition when combining groups - To use the language of subtraction when splitting groups

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		- To know amounts can be split into different groups and we call this sharing - To know when groups have not been shared fairly - To know that we can create different amounts of groups - To know that even numbers are numbers that can be split equally - To know and recall the even numbers to 10 - To know that odd numbers cannot be split equally - To know and recall the odd numbers to 10 - To know that halving is sharing into two equal parts - To know how to half numbers within 10 - To use mathematical knowledge to begin to solve real-world problems that include addition - To use mathematical knowledge to begin to solve real-world problems that include subtraction - To use mathematical knowledge to begin to solve real-world problems that include sharing/grouping SHAPE: - To know 2D shapes are flat shapes - To know 3D shapes are solid shapes - To know and identify the common 3D shapes – cube, cuboid, pyramid, cylinder, sphere - To know and identify the common 2D shapes – Triangle, square, circle, rectangle, hexagon, pentagon - To know and identify common 2D shapes when they have been rotated - To know 2D and 3D shapes can be manipulated and placed together to create new shapes - To create pictures using 2D shapes and discuss the reasons for my choice of shapes - To build using 3D shapes and explore the properties of these when building - To use vocabulary of sides, corner, straight, curved to describe and talk about shapes - To recognise a repeating pattern of shapes/objects - To copy a repeating pattern - To continue a repeating pattern ABAB, AABBAA - To create a repeating pattern

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		- To notice and correct an error in a repeating pattern - To know and use positional language – next to, on top, behind, under MEASURE: - To use a balance scale to compare weights understanding the lower side is heavier and the higher side is lighter - To know that if a balance scale is level the weight being compared is equal - To compare and order up to 3 objects in relation to their weight, length or capacity - To use non-standard units to measure objects and make comparisons - To use the language of today, yesterday, tomorrow to refer to the days before and after - To sequence familiar events and describe the sequence - To say the days of the week in order - To say the months of the year in order -