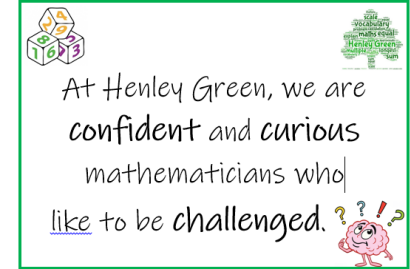


EYFS Progression Map for Maths from Birth to End of Reception



‘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.’

Early Years Foundation Stage Statutory Framework.

This document outlines the progression in the six key concepts, which underpin the early mathematics curriculum. The objectives from Developments Matters have been matched to these six key areas and the progression of these objectives towards the ELG at the end of reception have been mapped out.

Mathematical Concept: Cardinality and Counting					
The cardinal value of a number refers to the quantity of things it represents, e.g. the numerosity, 'howmanyness', or 'threeness' of three. When children understand the cardinality of numbers, they know what the numbers mean in terms of knowing how many things they refer to. Counting is one way of establishing how many things are in a group, because the last number you say tells you how many there are. Children enjoy learning the sequence of counting numbers long before they understand the cardinal values of the numbers. Subitising is another way of recognising how many there are, without counting					
Typical Progression within this concept →	Counting: Saying number words in sequence	Counting: tagging each object with one number word	Counting: Knowing the last number counted gives the total so far	Subitising: recognising small quantities without needing to count them all	Numeral meanings
Birth to three	Develop counting like behaviour, such as making sounds, point or saying some numbers in sequence. Count in everyday contexts, sometimes skipping numbers – '1,2,3,5' Notice patters and arrange things in patterns	Take part in finger rhymes with numbers		Reacting to changes of amount in a group of up to three items.	
3-4 year olds	Recite numbers past 5. Take part in number rhymes. Talk about and identify the patterns around them. Extend and create ABAB patterns. Notice and correct an error in a repeating pattern.	Say one number of each item in order: 1,2,3,4,5. Take part in number rhymes.	Know that the last number reached when counting a small set of objects tells you how many there are in total (cardinal principle).	Develop fast recognition of up to 3 objects, without having to count them individually (subitising) Show 'finger numbers' up to 5.	Link numerals to 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.
Reception	Count beyond 20 Continue, copy and create repeating patterns.	Count objects, actions, and sounds. Take part in number rhymes.	Link the number symbol with its cardinal number value.	Subitise	Link the number symbol with its cardinal number value.
ELG	Verbally count beyond 20, recognising the pattern of the counting system	Have a deep understanding of number to 10, including the composition of each number. Subitise (recognise quantities without counting) up to 5			

Mathematical Concept: Comparison		
Comparing numbers involves knowing which numbers are worth more or less than each other. This depends both on understanding cardinal values of numbers and also knowing that the later counting numbers are worth more (because the next number is always one more). This understanding underpins the mental number line which children will develop later, which represents the relative value of numbers, i.e. how much bigger or smaller they are than each other		
Typical Progression within this concept →	More than/less than Identifying groups with the same number of things	Knowing the 'one more than/one less than' relationship between counting numbers.
Birth to three	Compare amounts, saying 'lots', 'more' or 'same'	Take part in finger rhymes with numbers.
3-4 year olds	Compare quantities using language: 'more than', 'fewer than'	
Reception	Compare numbers	Understand the 'one more than/less than' relationship between consecutive numbers.
ELG	Numerical Patterns: 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.	

Mathematical Concept: Composition			
Knowing numbers are made up of two or more other smaller numbers involves 'part-whole' understanding. Learning to 'see' a whole number and its parts at the same time is a key development in children's number understanding. Partitioning numbers into other numbers and putting them back together again underpins understanding of addition and subtraction as inverse operations			
Typical Progression within this concept →	Part-whole: identifying smaller numbers within a number (conceptual subitising – seeing groups and combining to a total)	A number can be partitioned into different pairs of numbers (can include odd/even and doubles)	Number bonds: knowing which pairs made a given number
Birth to three			
3-4 year olds			
Reception	Subitise Explore the composition of numbers to 10	Explore the composition of numbers to 10	Automatically recall number bonds for numbers 0-5 and some to 10.
ELG	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. Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.		

Mathematical Concept: Pattern			
The focus in this section is on repeating patterns, progressing from children copying simple alternating AB patterns to identifying different structures in the 'unit of repeat', such as ABB or ABBC. Patterns can be made with objects like coloured cubes, small toys, buttons and keys, and with outdoor materials like pine cones, leaves or large blocks, as well as with movements and sounds, linking with music, dance, phonics and rhymes. Children can also spot and create patterns in a range of other contexts, such as printed patterns, timetables, numbers and stories.			
Typical Progression within this concept →	Pattern-Spotting around us	Continue/Make their own pattern	Spotting an error in a pattern
Birth to three	Notice patterns and arrange things in a pattern.	Notice patterns and arrange things in a pattern.	
3-4 year olds	Talk about and identify 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. Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then...'	Notice and correct an error in a repeating pattern.
Reception		Continue, copy, and create repeating patterns	Continue, copy and create repeating patterns
ELG			

Mathematical Concept: Shape and Space					
Mathematically, the areas of shape and space are about developing visualising skills and understanding relationships, such as the effects of movement and combining shapes together, rather than just knowing vocabulary. Spatial skills are important for understanding other areas of maths and children need structured experiences to ensure they develop these. Here, the focus is on actively exploring spatial relations and the properties of shapes, in order to develop mathematical thinking (rather than on shape classification, which requires prior knowledge of properties). This section is concerned with developing the two aspects of spatial awareness and shape awareness, with some progression identified within each.					
Typical Progression within this concept →	Developing spatial awareness	Developing spatial vocabulary	Developing shape awareness	Developing awareness of the properties of shape	Developing an awareness of the relationship between shapes
Birth to three	Combine objects like stacking blocks and cups. Put objects inside others and take them out again.	Climb and squeeze themselves into different types of spaces.	Build with a range of resources. Complete inset puzzles		
3-4 year olds		Understand position through words alone. Discuss routes and locations, using words like 'in front of' and 'behind'.	Select shapes appropriately: flat surfaces for building, a triangular prism for a roof.	Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal mathematical language: 'sides', 'corners', 'straight', 'flat', 'round'.	Combine shapes to make new ones – an arch, a bigger triangle.
Reception			Select, rotate and manipulate shapes to develop spatial reasoning skills.		Compose and decompose shapes so that children recognise a shape can have other shapes <i>within</i> it, just as numbers can.
ELG					

Mathematical Concept: Measures

Mathematically, measuring is based on the idea of using numbers of units in order to compare attributes, such as length or capacity. Although young children engage with using rulers and experience being measured in centimetres, kilos – and years! – the measuring units themselves are hard to understand. Children need to realise which attribute is being measured, e.g. weight as opposed to size, and the idea of conservation: that the amount stays the same, even if the appearance alters, e.g. if dough is stretched out or in bits. In order to understand units, they need to realise that two items can be compared using a third item, or ‘go between’, such as a stick. Finally, children need to understand how equal size units are used repeatedly to express an amount as a number. While young children can engage actively in making comparisons and exploring equivalence of length, volume, capacity and weight in different ways, some of these ideas are challenging and will develop later in primary school. For instance, weight (mass or density) is difficult to distinguish from size since it is invisible, and the concept of conservation is harder to understand for weight and capacity. Measuring with non-standard units of different sizes in order to appreciate the need for equal units is less effective with younger children, so centimetre cubes are recommended as accessible units. While time is also elusive to measure, young children can sequence events and, for example, count ‘sleeps’.

Typical Progression within this concept →	Comparison	Begin to use time.
Birth to three	Compare sizes, weight etc, using gestures and language –‘bigger/little/smaller’, ‘high/low’, ‘tall’, ‘heavy’.	
3-4 year olds	Make comparisons between objects relating to size, length, weight and capacity.	Begin to describe a sequence of events, real or fictional, using words such as ‘first’, ‘then...’;
Reception	Compare length, weight, and capacity	
ELG		