How we teach Maths and Enquiry in Reception





The EYFS framework says:

Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically.

A developmental journey from birth to the end of Reception...

EYFS Development Matters 2020 Statements and ELGs Mathematics

Three and Four-Year-Olds	Children in Reception				
 Develop fast recognition of up to 3 objects, without having to count them individually ('subitising'). 	Count objects, actions and sounds.				
Recite numbers past 5. Say one number for each item in order: 1,2,3,4,5.	Subitise. Link the number symbol (numeral) with its cardinal number value.				
 Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle'). 	Count beyond ten.				
 Show 'finger numbers' up to 5. Link numerals and amounts: for example, showing the right number of 	Compare numbers.				
objects to match the numeral, up to 5.	 Understand the 'one more than/one less than' relationship between consecutive numbers. 				
 Solve real world mathematical problems with numbers up to 5. 	Explore the composition of numbers to 10.				
Compare quantities using language: 'more than', 'fewer than'.	Automatically recall number bonds for numbers 0-5 and some to 10.				
 Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners'; 'straight', 'flat', 'round'. 	 Select, rotate and manipulate shapes in order to develop spatial reasoning skills. 				
 Understand position through words alone – for example, "The bag is under the table" – with no pointing. 	 Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can. 				
	 Three and Four-Year-Olds Develop fast recognition of up to 3 objects, without having to count them individually (subitising'). Recite numbers past 5. Say one number for each item in order: 1,2,3,4,5. Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle'). Show 'finger numbers' up to 5. Link numerals and 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. Solve real world mathematical problems with numbers up to 5. Compare quantities using language: 'more than', 'fewer than'. Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners'; 'straight', 'flat', 'round'. Understand position through words alone – for example, "The bag is under the table." – with no pointing. 				

- Describe a familiar route.
- Discuss routes and locations, using words like 'in front of' and 'behind'.
- Make comparisons between objects relating to size, length, weight and capacity.
- Select shapes appropriately: flat surfaces for building, a triangular prism for a roof, etc.
- Combine shapes to make new ones an arch, a bigger triangle, etc.
- Talk about and identifies 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.
- Notice and correct an error in a repeating pattern.
- Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then...'

Number

Early Learning Goals

- Have a deep understanding of number to 10, including the composition of each number.
- Subitise (recognise quantities without counting) up to 5.

Continue, copy and create repeating patterns.

Compare length, weight and capacity.

 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.

How do we help the children to gain a deep understanding of quantities and numbers to 10?







The five frame highlights number combinations to five and helps students in visualising numbers to develop number sense.







- 2 five frames
- Five-and-a bit numbers
- 5 and 1 more







Odd and even numbers (odd tops/ flat tops)



Five-and-a-bit numbers









Part whole model



Subitising

Subitising is when you are able to look at a group of objects and realise how many there are without counting. This only works with small groups of numbers, as we can only subitise up to 5 things. It was first introduced by a Swiss psychologist called Piaget.

	•	•	•••	
One - I know it is one because I can snap it with one hand.	Two - I know it is two because I can snap them with two hand.	Three - I know it is three because I can move them to make a triangle.	Four - I know it is four because I can move them to make a square.	Five - I know it is five because I can make a square with one more.



Shape, spatial reasoning, positional language...







Teddy is under the table.









Lots of hands on exploratory activities with a big emphasis on **vocabulary**

Repeating patterns





ABC pattern



ABBC pattern

Numberblocks



The Numberblocks episodes are carefully planned to be progressive and build up children's awareness and knowledge. We watch every episode, in the order they were written to help provide a progressive journey through mathematics. The episodes we watch correspond to the learning focus in lessons.

Our aim is for all Reception children to meet the Early Learning Goal in Number and Numerical Patterns at the end of the year.

	NUMBER	NUMERICAL PATTERNS
	 Have a deep understanding of 	•Verbally count beyond 20,
	number to 10, including the	recognising the pattern of the
	composition of each number.	counting system.
	• Subitise (recognise quantities	• Compare quantities up to 10 in
	without counting) up to 5.	different contexts, recognising when
	 Automatically recall (without 	one quantity is greater than, less
FIG	reference to rhymes, counting or	than or the same as the other
	other aids) number bonds up to 5	quantity.
	(including subtraction facts) and	• Explore and represent patterns
	some number bonds to 10, including	within numbers up to 10, including
	double facts.	evens and odds, double facts and
		how quantities can be distributed
		equally



Enquiries in Reception

Each term, we ask the children at least one big question that is too big to answer in one go but not too big that they don't understand. We guide learners through 'being' something to answer the big question...

The states of being



artist



athlete

ete

author



geographer



historian





RATE AT SEA OF A SEA

reader



scientist

mathematician

musician



Term 1 – Who are we? What is darkness?

Term 2 – What stories do we know?

Term 3 – What is a celebration?

Term 4 – What is growing?

Term 5 – How do we care for pets?

Term 6 – Who helps us?

Look out for enquiry webs on our website and attached to emails. We are always keen to hear from parents/carers who might be able to come in and contribute to our enquiry learning!



Each enquiry starts with an 'engage' activity which may include asking for something from home ③

Each enquiry ends with a 'challenge'. We will invite you to join us for the challenges where possible.

Keep an eye of Facebook for photos!