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**

Birth to Three

- Combine objects like stacking blocks and cups. Put objects inside others and take them out again.
- Take part in finger rhymes with numbers.
- React to changes of amount in a group of up to three items.
- Compare amounts, saying 'lots', 'more' or 'same'.
- Develop counting-like behaviour, such as making sounds, pointing or saying some numbers in sequence.
- Count in everyday contexts, sometimes skipping numbers - '1-2-3-5.'
- Climb and squeeze themselves into different types of spaces.
- Build with a range of resources.
- Complete inset puzzles.
- Compare sizes, weights etc. using gesture and language - 'bigger/ little/smaller', 'high/low', 'tall', 'heavy'.
- Notice patterns and arrange things in patterns.

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...'

Children in Reception

- Count objects, actions and sounds.
- Subitise.
- Link the number symbol (numeral) with its cardinal number value.
- Count beyond ten.
- Compare numbers.
- Understand the 'one more than/one less than' relationship between consecutive numbers.
- Explore the composition of numbers to 10.
- Automatically recall number bonds for numbers 0–5 and some to 10.
- Select, rotate and manipulate shapes in order to develop spatial reasoning skills.
- Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can.
- Continue, copy and create repeating patterns.
- Compare length, weight and capacity.

Early Learning Goals

Number

- 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.

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?

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.

Subitising actually comes from the Latin word for suddenly; it may not be a word we hear very often but it's actually a crucial skill that many of us use on a daily basis without even realising it.

Subitising helps children to see, solve, and manipulate numbers in their head.
This develops their number sense and helps them master key calculation strategies at an early stage.

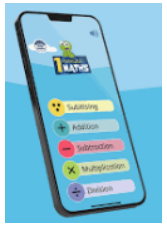
Often young children learn to count but don't fully understand the relationship between numbers and amounts.

Subitising

Perceptual

This is where children see an amount instantly. Eg, if you were watching two ducks swimming in a pond you would be able to see there were two just by looking at them.

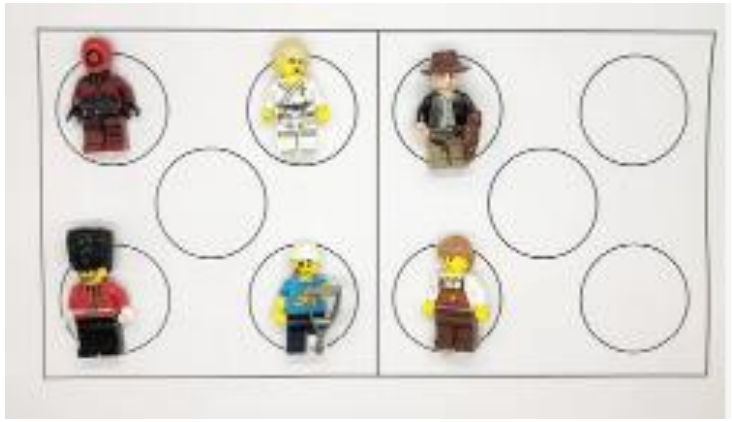
The White Rose 1 minute maths app (free) is brilliant for subitising practise!

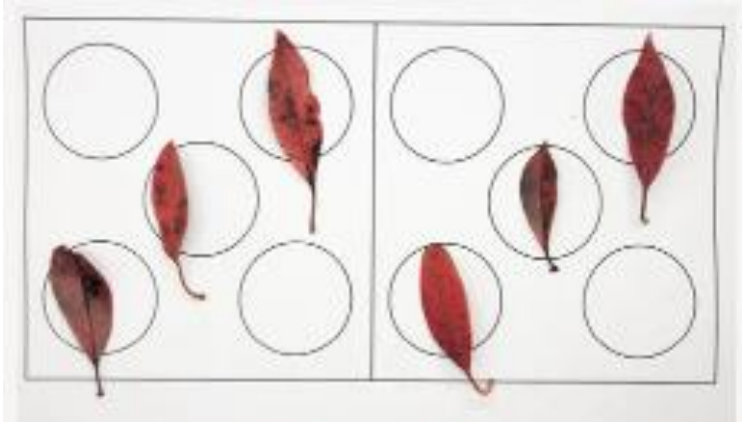


Conceptual

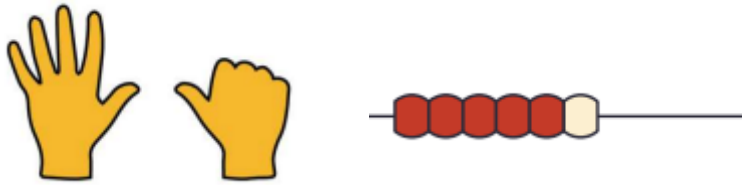
This is where children see larger patterns and can break down the amount into smaller groups using mental maths strategies. Eg, if there were 6 ducks swimming, you might subitise by splitting the group up into two smaller groups of 3, or even 3 groups of 2.
We recognise a whole quantity by breaking it into groups.

The Hungarian Number Frame

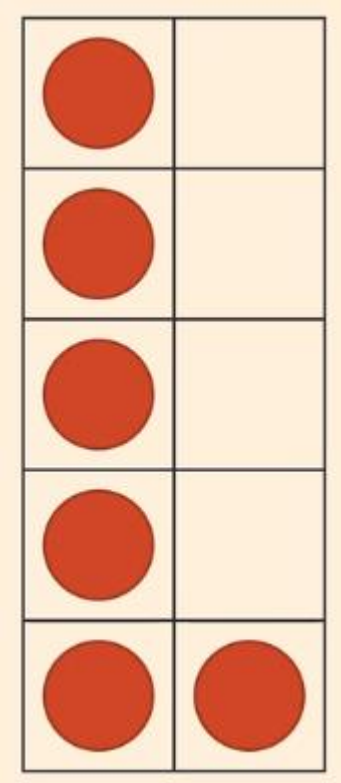




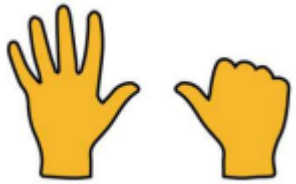
Making numbers on the Hungarian number frame promotes subitising and exposes different structures, allowing children to develop an appreciation of how numbers are composed. The composition can also be linked to the fingers.



Ten frames



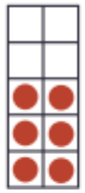
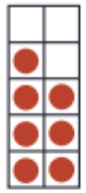
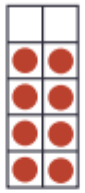
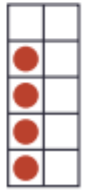
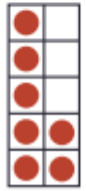
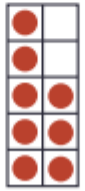
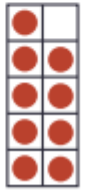
- Five-and-a bit numbers
- 5 and 1 more



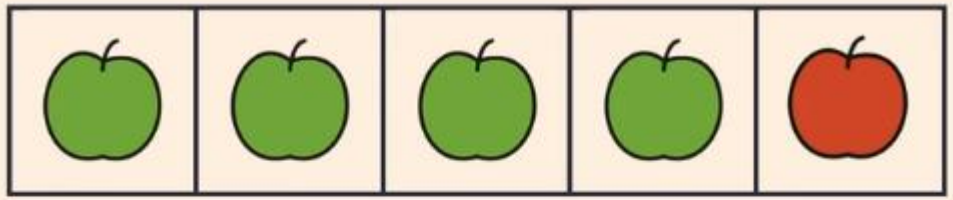
- Number bonds to 10 (**6** spots and **4** gaps)

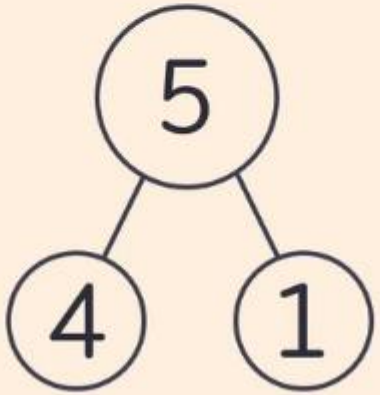
Ten frames

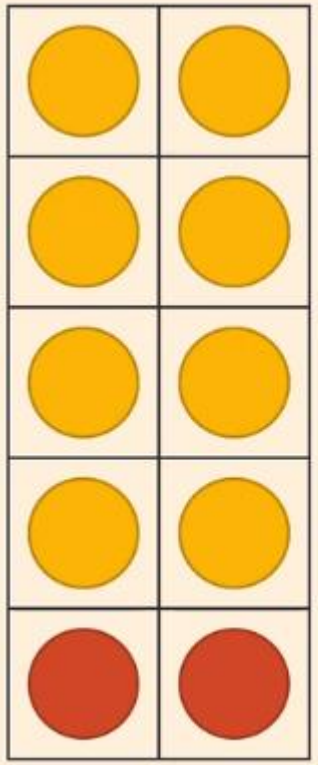
Odd and even numbers (odd tops/ flat tops)

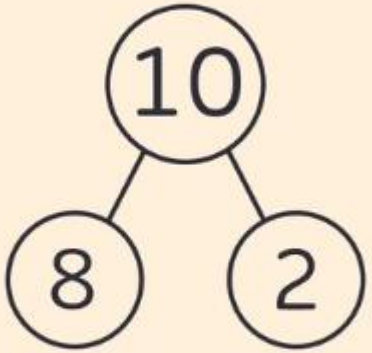
Twos wise										
	1	2	3	4	5	6	7	8	9	10
Fives wise										

Five-and-a-bit numbers

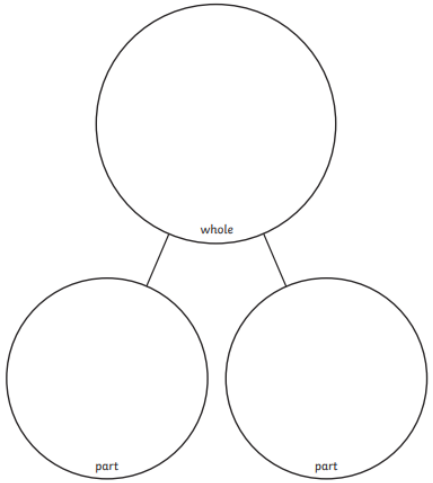








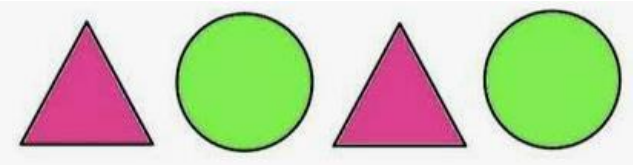
Part whole model



Non-number lessons

- Pattern
- Measure
- Shape
- Spatial awareness

Repeating patterns



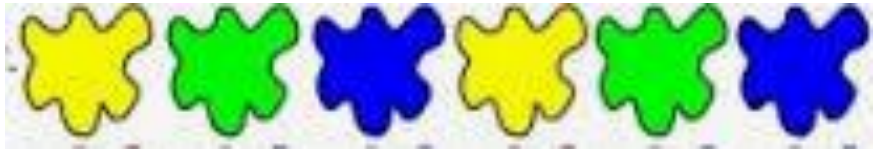
AB pattern

Continue

Copy

Create

Spot the mistake

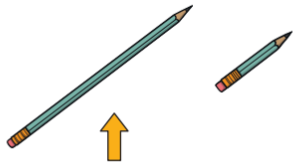


ABC pattern

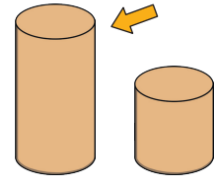
ABBC pattern

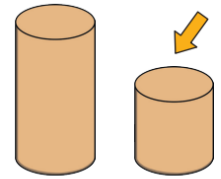
ABB pattern

Measures

long 

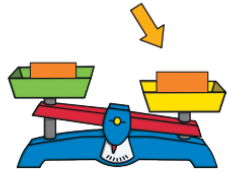
short 

taller 

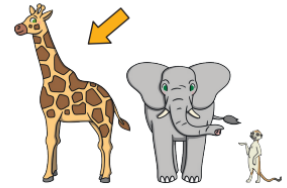
shorter 

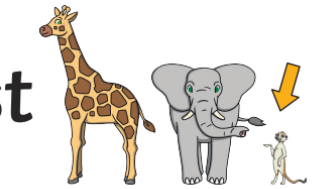
full 

empty 

heavy 

light 

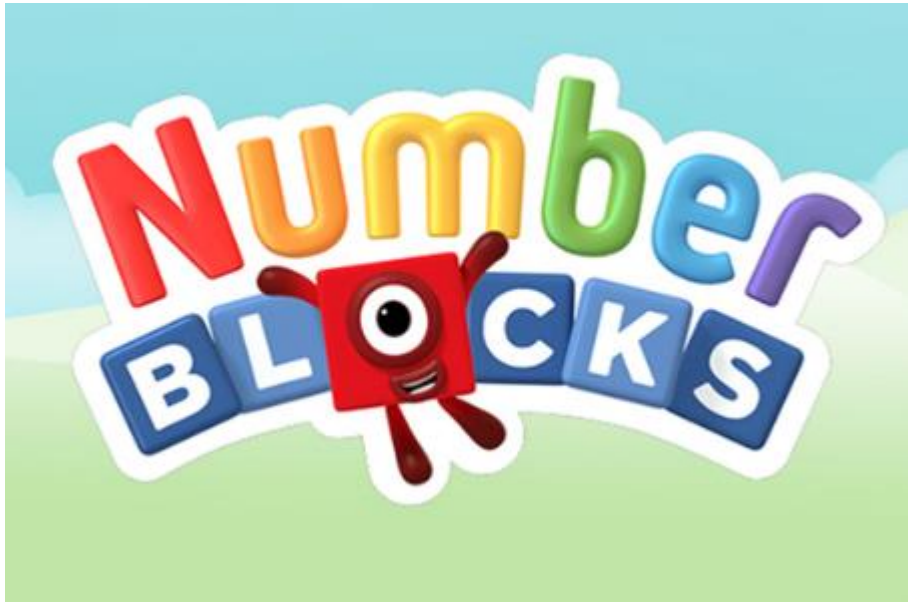
tallest 

shortest 

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

Shape, spatial reasoning, positional language...

Numberblocks



The Numberblocks episodes are carefully planned to be progressive and build up children's awareness and knowledge.

https://www.learningblocks.tv/numberblocks/episodes

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
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.	•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

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' a state of being to answer the big question...

The states of being

artist

athlete

author

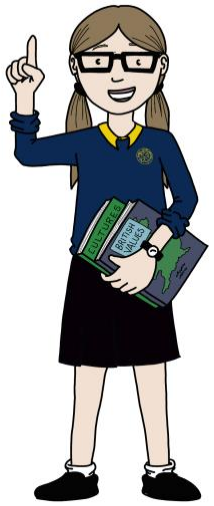
philosopher

geographer

historian

mathematician

musician



philosopher

reader

scientist

Enquiries

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!

Enquiries

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

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!

Emotional Literacy

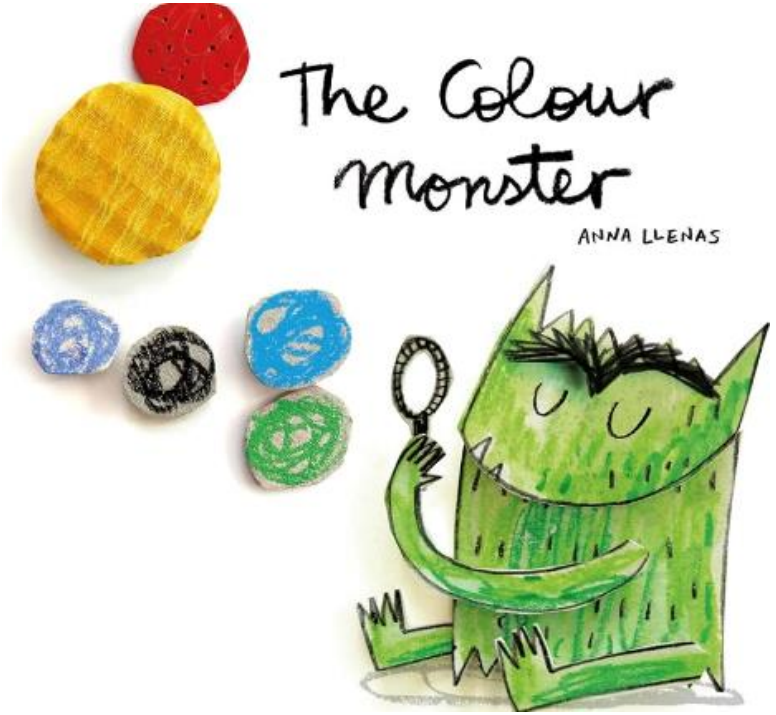
What is Emotional Literacy?

Emotional literacy is the ability to express our emotions and feelings using speech and other forms of communication. It's an important skill that children must develop from a young age to help establish a stable relationship with their own emotions.

Emotional literacy is a key aspect of emotional intelligence, which means our overall ability to deal with emotions. Emotional literacy focuses on how we communicate our feelings and how well we can read others' emotions. Whilst some children will naturally be comfortable doing this, others might need more encouragement and support. Without emotional literacy, children will struggle to express their feelings appropriately and might be confused or alarmed by the emotions of others.

‘The understanding and management of emotions are increasingly being seen as central to the whole process of growth and development into adulthood’

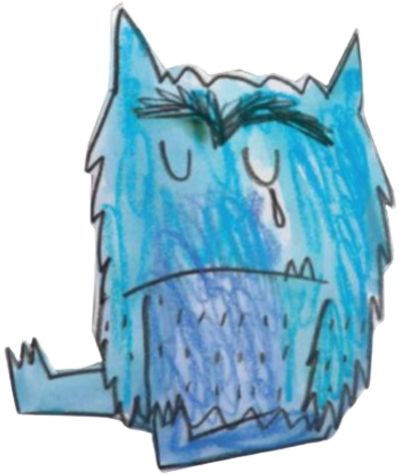
Faupel et al (ed 2003)



‘The Colour Monster’ helps the children identify their feelings as they experience them.

angry

scared/ worried



sad

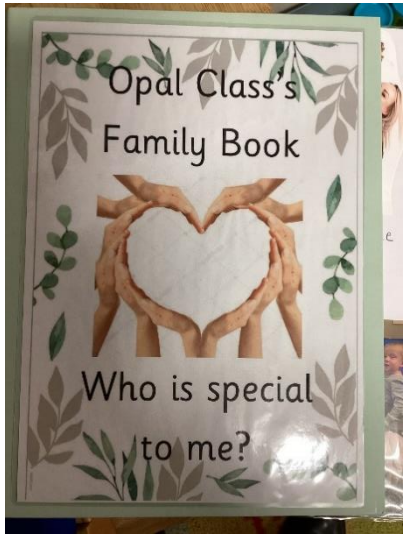
happy

mixed-up

loved

calm

We want our children to feel calm when they are at school. They can do their best learning when they are calm.



Look at the family book

calm tent

cuddle

Cuddle a colour monster

Find a friend

Smell the flower, blow out the candle

Dysregulated?
Step 1 – name the feeling
Step 2 – find a way to return to feeling calm. Co-regulation will become self-regulation…