Reception Maths Parent Workshop

Maths in Reception

The first few years of a child's life are especially important for mathematics development.

The objective for those working in Early Years, then, is to ensure that all children develop firm mathematical foundations in a way that is engaging, and appropriate for their age.

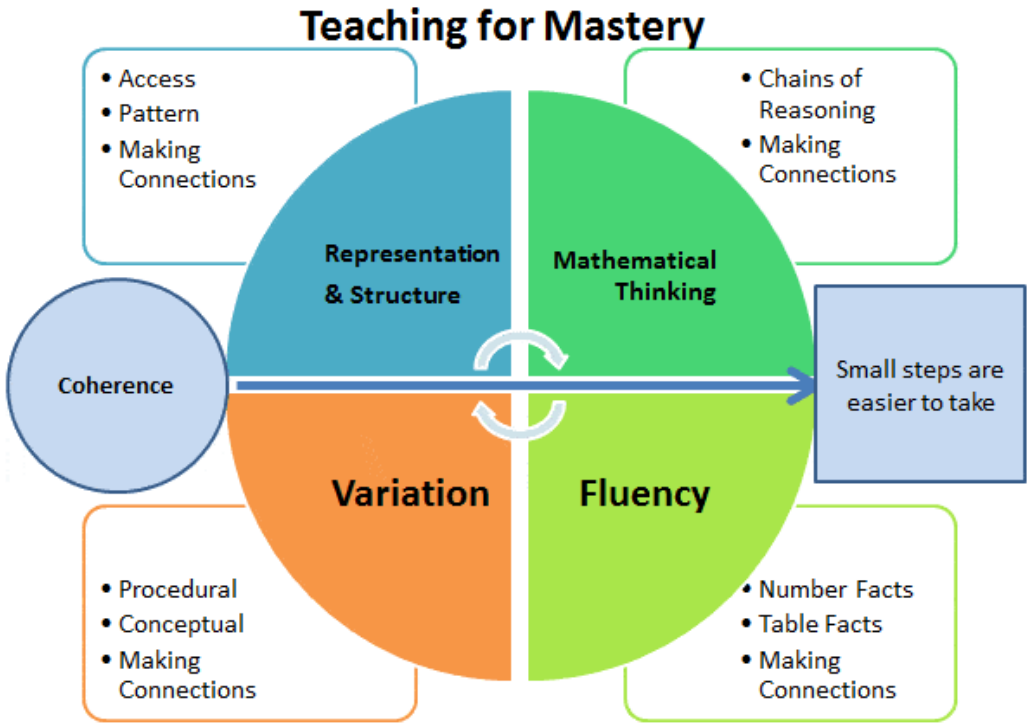
Children's chances of success are maximised if they develop deep and lasting understanding of mathematical procedures and concepts.

EYFS Maths Statements

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.

What is Maths Mastery?

Maths Mastery … Mastering maths means pupils of all ages acquiring a deep, long-term, secure and adaptable understanding of the subject.



White Rose Maths

A scheme of learning is a clear, time-linked plan for learning.
White Rose schemes are written for year groups and cover the whole school year of learning.

The scheme is divided into ten key phases and provides a variety of opportunities to develop their understanding of number, shape, measure, and spatial thinking.

In Early Years there is a strong focus on early number. Children need a really strong sense of numbers to 10.

This includes:

Understanding the link between numbers and quantity (representing in different ways)

Investigating how quantities are composed of smaller parts (6 can be two 3s or three 2s or 4 and two 1s)

Knowing how numbers relate to one another and being able to compare and order them

Exploring how quantities change when you add more items or take items away

Children may already be able to recite the number names to twenty and beyond but a sense of what those numbers mean develops gradually with repeated experiences in different contexts.

There are six key areas of early mathematics learning, which collectively provide a platform for everything children will encounter as they progress through their maths learning at primary school, and beyond.

Cardinality and Counting

Understanding that the cardinal value of a number refers to the quantity, or 'howmanyness' of things it represents

Comparison

Understanding that comparing numbers involves knowing which numbers are worth more or less than each other

Composition

Understanding that one number can be made up from (composed from) two or more smaller numbers

Pattern

Looking for and finding patterns helps children notice and understand mathematical relationships

Shape and Space

Understanding what happens when shapes move, or combine with other shapes, helps develop wider mathematical thinking

Measures

Comparing different aspects such as length, weight and volume, as a preliminary to using units to compare later

NCETM
NATIONAL CENTRE FOR EXCELLENCE IN THE TEACHING OF MATHEMATICS

Teaching to develop:

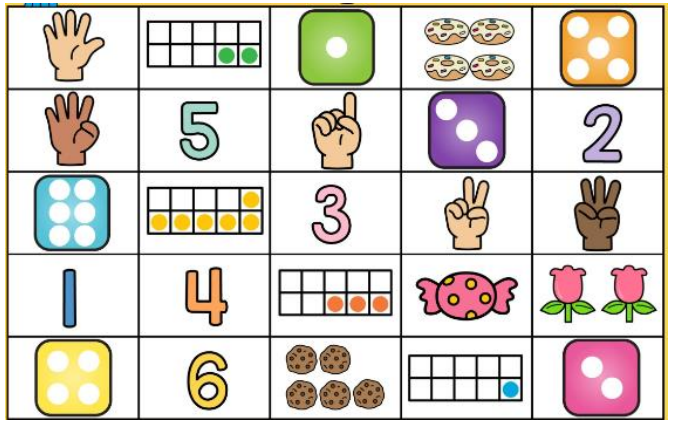
- Fluency
- Reasoning
- Problem Solving
- A love of maths!

What is fluency?

Fluency is the ability to quickly recall addition, subtraction, multiplication, and division maths facts through conceptual learning, fact strategies, and memorisation.

We often refer to the skill of subitising when developing fluency.

Subitising



- In order for children to develop fluency and calculate successfully and quickly, children need to be able to ‘subitise’ well.
- This means they need to be able to recognise how many spots there are on dice, dominoes and Numicon etc. instantly without counting them.
- Eventually, the children will imagine these images in their head, helping them to calculate.

What is reasoning?

Reasoning in maths is the children's ability to explain their thinking.

- Children often work in mixed ability groups and partnerships to enable them to have lots of practice with this.
- Other examples of teaching 'reasoning' in whole class sessions or play are spotting mistakes and explaining true of false statements.

What is problem solving?

Problem solving allows children to use their maths skills in lots of contexts and in situations that are new to them.

It allows them to seek solutions, spot patterns and think about the best way to do things rather than blindly following maths procedures

How we teach Maths in Reception

- Maths happens both indoors and outdoors through a wide range of practical activities using lots of concrete resources.
- Children are taught in a whole class carpet session focused on a particular area of their learning.
- Children then have the opportunity to practise those skills and choose from different indoor and outdoor activities all based around the skill they have just learnt.
- Child initiated play.
- Adult led group tasks.

Ways in which maths may be taught in Reception

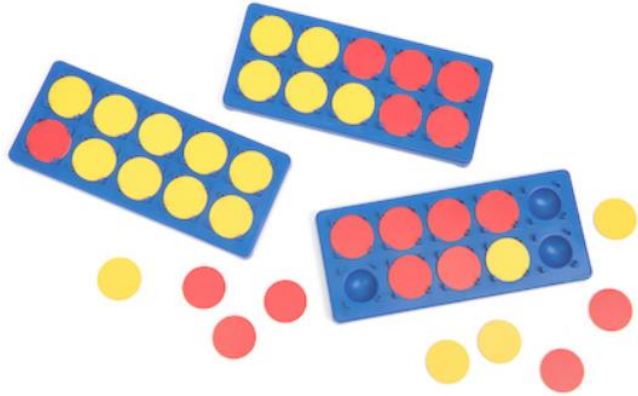
- Through Songs –

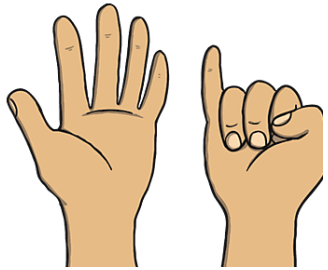
“1,2,3,4,5

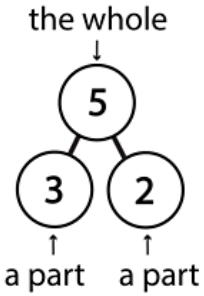
Once I caught a fish alive”.

- Talk about counting on, altogether, one more etc
- Matching numbers to objects up to 20
- Illustrate number stories with number sentences
- Representing numbers e.g. making marks or using their fingers
- Counting on fingers in a consistent way

Maths Resources







Number Vocabulary

zero

more
few
fewer

compare

less
more
most
the same

number

sort

pair

ones

count on
count backwards

order

before
after

Addition and Subtraction Vocabulary

add

altogether

one more
one less

more

takeaway

equals
equal to

whole
parts

How many?

make
total

numberline

half

double

Measure

Before
After
Next
Last
Now
Soon

coin
buy
sell
pay,
price
how many?

tall
small
large
thick thin
low deep

Days of the week
Months
Year

yesterday
tomorrow

Long
Longer
longest

short
shorter
shortest

old
new

weekend
holiday

capacity
empty
full
nearly empty

weight, weigh, weighs

late
quick
fast
slow

heavy, heavier, heaviest
light, lighter, lightest

morning, afternoon,evening, night

once, twice

Sharing, share

times

Multiplication and Division

set
group

Counting in…

groups of

left
left over

lots of

Geometry – Position and Direction

after, before

In, inside
On, on top of
Under
Behind
Next to
Above
Below

across
close
far
along

distance

position

forwards
backwards

slide
roll
turn
stretch
bend
move

outside
around
underneath
in front

top
bottom
middle

round
flat
straight

build
draw

Square
Circle
triangle

sort

Geometry – Shape

shape

slide
roll
turn
stretch
bend
move

cube
cuboid
sphere

End of year expectations for Reception

- Maths Early Learning Goals:

This is the knowledge, skills and understanding children should have at the end of the academic year in which they turn five. Teacher make a holistic, best-fit judgement about a child's development, and their readiness for year 1.

ELG: Number

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 up to 5 (including subtraction facts) and some number bonds to 10, including double facts.

ELG: Numerical Patterns

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 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.

What can you do at home?

- Point out where Maths exists in real life to support children with mathematical language and to help their understanding.
- What shapes can they see?
- Which size saucepans do we need for cooking?
- When walking past houses on the way home from school, what is happening to the door numbers? Are they getting bigger or smaller?
- How much pizza has been eaten?
- Count the pairs of socks on the washing line.
- Measuring themselves.
- Allow them to play in the bath with different sized containers.
- Let children make up their own games and decide how to score points
- Counting objects can be made from Lego, small figures, rubber ducks, buttons, coins
- Building blocks are great for talking about measurement, the difference between 2 numbers, adding blocks etc.
- Their fingers! Encourage them to count on and count back, add and subtract using their fingers.
- Ask questions such as “How many more?”, “How many altogether?”, “How many would I have if?”
- Deliberately make mistakes
- Story books- Look for the Maths!

Autumn Term Books used to support the teaching of Maths

Block 1 – Match, sort and compare

- *A Pair of Socks* by Stuart J. Murphy
- *Seaweed Soup* by Stuart J. Murphy
- *The Button Box* by Margarette S. Reid
- *Beep Beep, Vroom Vroom!* by Stuart J. Murphy

Block 2 – Talk about measure and pattern

- *Where's My Teddy?* by Jez Alborough
- *It's the Bear!* by Jez Alborough
- *The Blue Balloon* by Mick Inkpen
- *Dear Zoo* by Rod Campbell
- *My First Book of Patterns* by Bobby and June George
- *We're Going on a Bear Hunt* by Michael Rosen
- *A-B-A-B-A – A Book of Pattern Play* by Brian P. Cleary

Block 3 – It's me 1, 2, 3

- *Anno's Counting Book* by Mitsumasa Anno
- *How to Count to One* by Casper Salmon
- *Goldilocks and the Three Bears*
- *The Gingerbread Man*
- *A Squash and a Squeeze* by Julia Donaldson
- *The Three Billy Goats Gruff*

Block 4 – Circles and triangles

- *Circle, Triangle, Elephant! A Book of Shapes and Surprises* by Kenji Oikawa and Mayuko Takeuchi
- *Triangle* by Mac Barnett and Jon Klassen
- *Shapes, Shapes, Shapes* by Tana Hoban
- *We're Going on a Bear Hunt* by Michael Rosen
- *Rosie's Walk* by Pat Hutchins

Block 5 – 1, 2, 3, 4, 5

- *Witches Four* by Marc Brown
- *Five Little Fiends* by Sarah Dyer
- *Pete the Cat and his Four Groovy Buttons* by Eric Litwin
- *Kipper's Birthday* by Mick Inkpen
- *The Very Hungry Caterpillar* by Eric Carle
- *Stella to Earth!* by Simon Puttock and Philip Hopman
- *Anno's Counting Book* by Mitsumasa Anno

Block 6 – Shapes with 4 sides

- *Bear in a Square* by Stella Blackstone
- *Square* by Mac Barnett and Jon Klassen
- *Shapes, Shapes, Shapes* by Tana Hoban
- *Night Monkey, Day Monkey* by Julia Donaldson
- *The Fox in the Dark* by Alison Green