Welcome to the Mathematics in the Early Years

EYFS Maths – End of Year Expectations

- The Maths area of learning and development is split into two aspects: **Numbers and Numerical Patterns.**

- The following pages demonstrate the progression of mathematical knowledge, understanding and skills as the children transition throughout the Reception year in school.
- All children will be assessed against the Maths Early Learning Goal (ELG) at the end of the year. This is reported to parents and the Local Authority.

Progression of Maths - Number Knowledge, Understanding & Skills

Area of Learning		3-4 years Range 5 (36 - 48 months)	4-5 years Range 6 (48 - 60 months)
MATHEMATICS	NUMBER	**Counting:** Show 'finger numbers' up to 5. May enjoy counting verbally as far as they can go Points or touches (tags) each item, saying one number for each item, using the stable order of 1,2,3,4,5. Uses some number names and number language within play, and may show fascination with large numbers. Begin to recognise numerals 0 to 10. **Cardinality:** Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle'). 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. Subitises one, two and three objects (without counting). **Composition:** Solve real world mathematical problems with numbers up to 5. Through play and exploration, beginning to learn that numbers are made up (composed) of smaller numbers. Beginning to use understanding of number to solve practical problems in play and meaningful activities. Beginning to recognise that each counting number is one more than the one before. Separates a group of three or four objects in different ways, beginning to recognise that the total is still the same.	**Counting:** Count beyond 10. Enjoys reciting numbers from 0 to 10 (and beyond) and back from 10 to 0. Increasingly confident at putting numerals in order 0 to 10 (ordinality). **Cardinality:** Count objects, actions and sounds. Subitise (Engages in subitising numbers to four and maybe five) Link the number symbols (numeral) with its cardinal number value. Counts out up to 10 objects from a larger group. Matches the numeral with a group of items to show how many there are (up to 10). **Composition:** Understand the 'one more than/one less than' relationship between consecutive numbers. Explore the composition of numbers up to 10. Automatically recall number bonds for numbers 0-10. Shows awareness that numbers are made up (composed) of smaller numbers, exploring partitioning in different ways with a wide range of objects. Begins to conceptually subitise larger numbers by subitising smaller groups within the number, e.g. sees six raisins on a plate as three and three. Begins to explore and work out mathematical problems, using signs and strategies of their own choice, including (when appropriate) standard numerals, tallies and "+" or "-"

Maths – Numbers ELG:

The Maths – Numbers
Early Learning Goal (ELG)
60 – 71 months

- Have a deep understanding of number up to 10.
- Subitise (recognize 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.

Progression of Maths – Numerical Patterns Knowledge, Understanding & Skills

NUMERICAL PATTERNS		
	Comparison: Compare quantities using language: 'more than', 'fewer than'. Compares two small groups of up to five objects, saying when there are the same number of objects in each group, e.g. You've got two, I've got two. Same! **Shape:** 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 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. (Enjoys partitioning and combining shapes to make new shapes with 2D and 3D shapes / Attempts to create arches and enclosures when building, using trial and improvement to select blocks). Shows awareness of shape similarities and differences between objects. **Spatial Awareness:** 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'. Predicts, moves and rotates objects to fit the space or create the shape they would like **Measures:** Make comparisons between objects relating to size, length, weight and capacity. In meaningful contexts, finds the longer or shorter, heavier or lighter and more/less full of two items. Recalls a sequence of events in everyday life and stories. **Patterns:** 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. 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...' Joins in with simple patterns in sounds, objects, games and stories dance and movement, predicting what comes next.	**Comparison:** Compare numbers Uses number names and symbols when comparing numbers, showing interest in large numbers. Estimates of numbers of things, showing understanding of relative size. **Shape:** Compose and decompose shapes so that children recognise a shape can have other shapes *within* it, just as numbers can. Select, rotate and manipulate shapes in order to develop spatial reasoning skills. Uses informal language and analogies, (e.g. heart-shaped and hand-shaped leaves), as well as mathematical terms to describe shapes. Uses own ideas to make models of increasing complexity, selecting blocks needed, solving problems and visualising what they will build. **Spatial Awareness:** Uses spatial language, including following and giving directions, using relative terms and describing what they see from different viewpoints. Investigates turning and flipping objects in order to make shapes fit and create models; predicting and visualising how they will look (spatial reasoning). May enjoy making simple maps of familiar and imaginative environments, with landmarks. **Measures:** Compare length, weight and capacity. Enjoys tackling problems involving prediction and discussion of comparisons of length, weight or capacity, paying attention to fairness and accuracy. Becomes familiar with measuring tools in everyday experiences and play. Is increasingly able to order and sequence events using everyday language related to time. Beginning to experience measuring time with timers and calendars. **Pattern:** Continue, copy and create repeating patterns. Spots patterns in the environment, beginning to identify the pattern "rule". Chooses familiar objects to create and recreate repeating patterns beyond AB patterns and begins to identify the unit of repeat.

Maths – Numerical Patterns ELG:

The Maths – Numerical Patterns
Early Learning Goal (ELG)
60 – 71 months

- Verbally count beyond 20, recognizing the pattern of the counting system.
- Compare quantities up to 10 in different contexts, recognizing when one quantity is greater than, less than or the same as the other quantity.
- Explore and represent within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

How is Maths taught in EYFS?

- We use the Mastering Numbers and the White Rose Maths schemes of work from Reception through to Year 6 to ensure continuity and progression of Maths knowledge, understanding and skills.
- We deliver 4 whole class teaching sessions per week, followed by guided group activities.
- We provide lots of practical contexts for the children to be able to develop, refine and embed their Maths knowledge and reasoning skills.
- The use of manipulatives is very important in EYFS to develop early number sense and key concepts.

Video: How we teach Maths in Reception

- We are now going to watch a video about how we teach Maths in Reception – Developing early number sense!

- https://www.youtube.com/watch?v=2Ow8vEmh8lA

Maths Handout

- You will find much of the information discussed this afternoon in this Maths information booklet.
- It includes a list of books that can be used to support each unit of work, as well as, key representations used at various points throughout the year.
- The booklet features a word bank of Maths terminology discussed in the video, alongside key vocabulary used with the children throughout the Reception year.
- There is also a list of website that support the teaching of early Maths.

Time for you to have a play …

- Let's have a look at some examples of these activities …

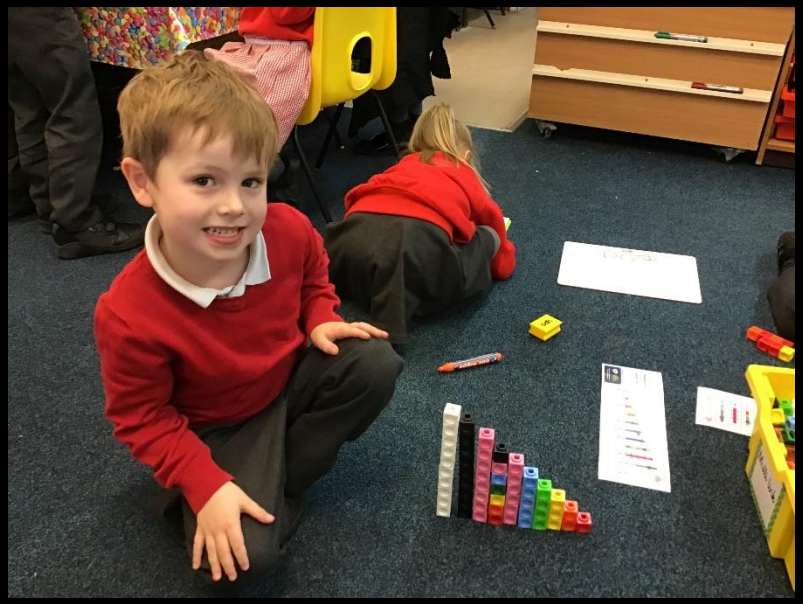
What can I do to support my child?

What is my child learning in maths today / this week?

My child says they don't understand their maths

If you have any questions, please do not hesitate to ask.

Thank you for taking time to attend this evenings workshop



We hope you found it useful.

Important Links and Websites

The NCETM Early Years Area

The aim of this section is to help teachers and practitioners in Early Years settings have a clearer understanding of how children build early number sense, and to provide tips on how best to support that learning.
https://www.ncetm.org.uk/resources/51439

Number Blocks

Numberblocks, first broadcast in January 2017, is a pre-school BBC television series aimed at introducing children to early number.
Snappy animation and loveable characters combine with engaging storylines to gently introduce concepts of number to support early mathematical understanding.

https://www.bbc.co.uk/cbeebies/shows/numberblocks

NRICH

The NRICH Early Years resources aim to further develop young children's natural problem-solving abilities in the context of mathematics.
https://nrich.maths.org/early-years

Learning Trajectories

$[LT]^2$ is a web-based tool for early childhood educators to learn about how children think and learn about mathematics and how to teach mathematics to young children (birth to age 8).
https://www.learningtrajectories.org/

Early Math Collaborative

The Erikson Institute Early Math Collaborative is transforming the understanding, teaching and learning of early mathematics from the ground up.
https://earlymath.erikson.edu/

EEF Improving Mathematics in the EY and KS1

This guidance report summarises the latest research into early maths education and offers 5 practical recommendations for teachers to support the learning of children aged 3-7.
https://educationendowmentfoundation.org.uk/tools/guidance-reports/early-maths/