



Maths in EYFS

Parent meeting
1st November 2023

Maths in EYFS

- ▶ Maths is one of the four specific areas within the Early Years Foundation Stage.
- ▶ In the new EYFS Framework (2021) maths is broken down into 2 parts:
 - ▶ **Number**
 - ▶ **Numerical patterns**
- ▶ Children learn about maths through play and their daily experiences. The more meaningful to them and hands on it is, the better.

Number

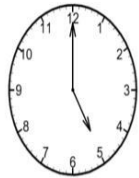
- ▶ Children learn to:
 - ▶ Have a deep understanding of number to 10, including the composition of each number;
 - ▶ Subitise (recognise quantities without counting) up to 5;
 - ▶ Automatically recall (**without** reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.

Numerical Patterns

- ▶ These skills support children to:
 - ▶ 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.

Maths in the environment

- ▶ We offer maths opportunities throughout our environments (both indoors and out).
- ▶ Our environment is full of mathematical opportunities and has exciting things for children to explore, sort, compare, count, calculate and describe.
- ▶ We allow children to be creative, critical thinkers, problem solvers and to have a go.
- ▶ Children will build their own 'concept image' through exploration.



Continuous Provision

Guided play, with child agency at its heart, has a greater positive effect than direct instruction on early maths skills (Skene 2022)

EEF (2021) report recommends both dedicated mathematics time and opportunities to integrate mathematics throughout the day.

Investing our time in supporting rich, relevant Continuous Provision rests on an approach to mathematics learning that integrates adult input and direction with child-directed learning



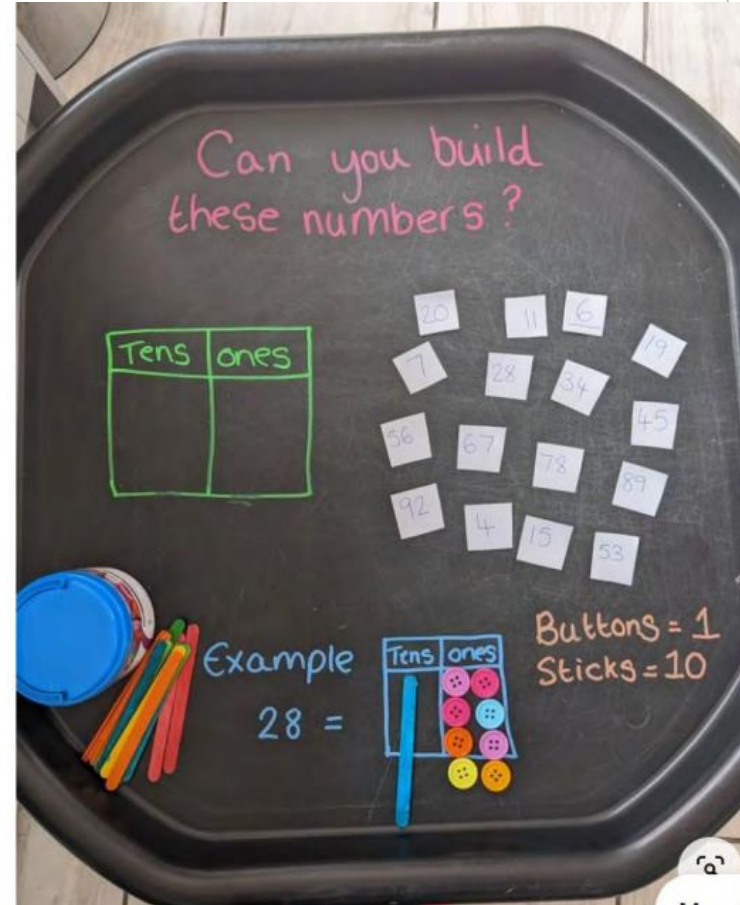
Early Childhood Maths Group

In well-prepared Continuous Provision children are more likely to:

- become absorbed and engaged
- become creative
- develop communication skills
- develop problem solving skills
- engage in collaborative projects
- be confident to explore without fear of being criticised
- be motivated to practice developing skills.

Teachers can

- spot misconceptions
- identify next steps in learning
- develop children's learning in context.



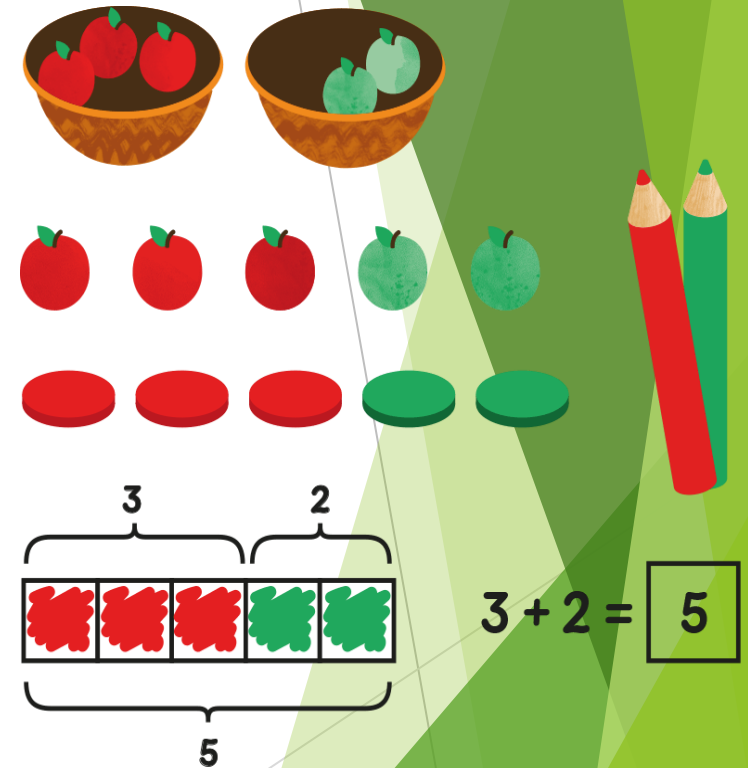
Early Childhood Maths Group

Continuous Provision gives children the opportunity to consolidate and extend their mathematics by practising taught skills and applying their developing knowledge in a wider range of contexts

- Provides the space and time for children to develop increased independence
- Rich opportunities for mathematical collaboration between children as well as between children and adults.
- Adults in EYFS plan time to regularly: 1. observe, 2. challenge, 3. model, and 4. support.

Concrete, Pictorial, Abstract Approach

- ▶ **Concrete** - is the 'doing' stage. During this stage children are first introduced to using **concrete** objects to model problems. This is a 'hands on' approach using real objects and it is the basis for conceptual understanding in maths.
- ▶ **Pictorial** - is the 'seeing' stage. Once children have understood the hands-on experiences performed, they can now relate them to visual representations of the concrete objects used to model problems. Building or drawing a model makes it easier for children to grasp difficult abstract concepts (for example, addition). It helps children visualise abstract problems and make them more accessible.
- ▶ **Abstract** - is the 'symbolic' stage, where children use **abstract** symbols to model problems. Children are now capable of representing problems using mathematical notation, for example $2 + 1 = 3$. This is clearly the more confusing and mysterious of the three and without the 'hands on' and pictorial steps can be very hard for children to understand.



Number sense: a feeling for numbers

1. An awareness of the relationship between number and quantity
2. An understanding of number symbols, vocabulary and meaning
3. The ability to engage in systematic counting, including notions of cardinality and ordinality
4. An awareness of magnitude and comparisons between different magnitudes
5. An understanding of different representations of number
6. Competence with simple mathematical operations
7. An awareness of number patterns including recognising missing numbers

Number sense

- Counting
- Comparing
- Cardinality
- Unitising

Number sense refers to a 'well organised conceptual framework of number information that enables a person to understand numbers and number relationships and to solve mathematical problems that are not bound by traditional algorithms.' Bobis 1996

Number sense is something that we need to develop throughout our learning of mathematics, not just in the early years, for example decimals: counting, comparing, ordering, knowing what they are and the relationship between them and so on.

Number sense - counting

Three key aspects of number sense

Counting:

Knowing the number names in order, forwards and backwards.
Understanding how to count objects, events or actions in ones and also in twos, fives and tens.

Counting 16 beads, 5 claps, 10 stairs
Count down as 5 buns are eaten
Count up money in 10p pieces

Importance of counting

Oral counting is a child's first experience of number and mathematics;

- Making connections between saying the number names and counting objects is the first step towards children's understanding of the number system;
- Counting is one tool for building up calculation strategies;
- We need to count backwards as well as forwards.

Counting principles

The 'How to count' principles

- The stable order principle
- The 1-1 principle
- The cardinal principle
- The 'What to count' principles
- The order-irrelevance principle
- The abstract principle Counting Principles

Gelman R and Gallistel CR. (1978) 'The Child's Understanding of Number'



Counting principles

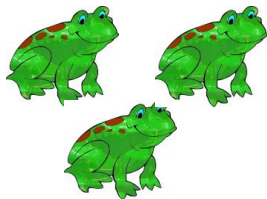
I can say 1, 2, 3 (stable order)

I can count 1, 2, 3 frogs (1:1 correspondence)



I can tell you that there are 3 frogs (cardinal)

I can tell you that there are still 3 frogs,



I don't have to count them again (order irrelevance)



I can count anything now! (abstraction)



Counting principles

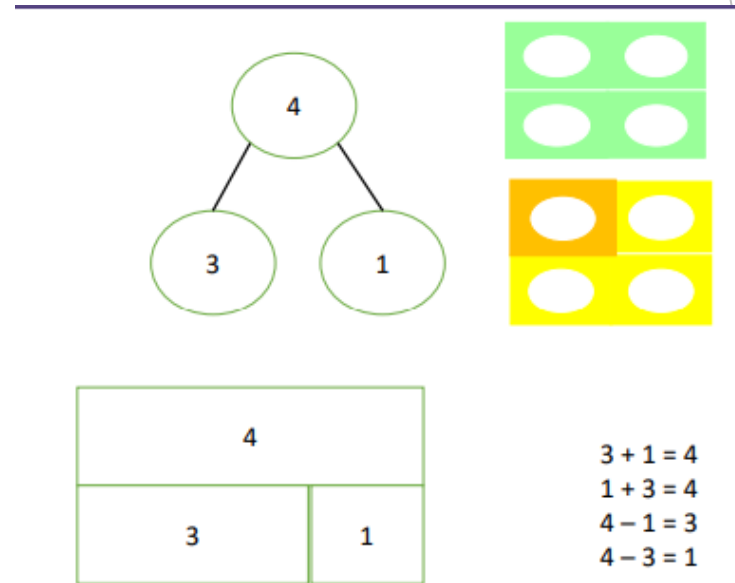
They also need to:

Know all about numbers to 10

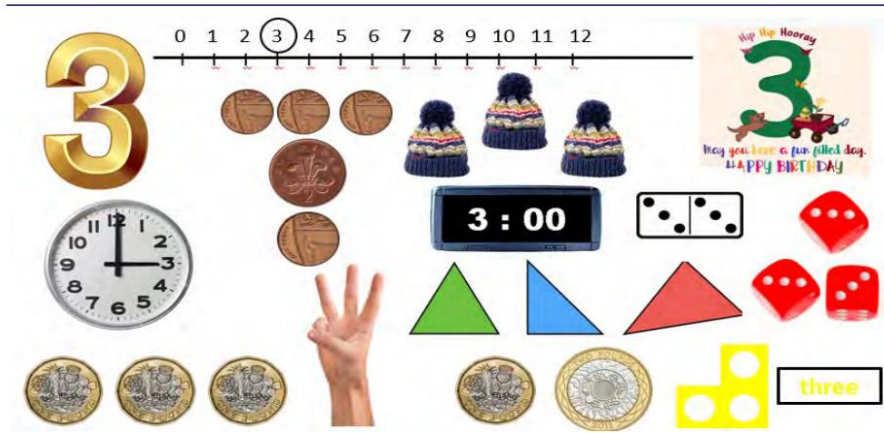
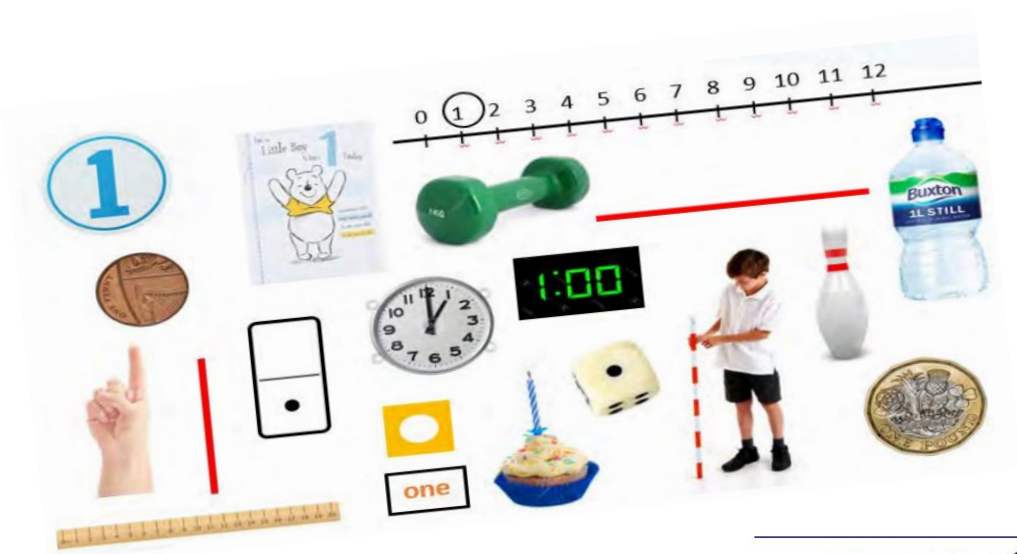
Subitise

Recognise numbers to 10

- Show me 4 in as many ways as you can.
- What do you know about 4?
- Odd or even?
- What is it greater than? What is it less than?
- Can you count out 4 from a larger group?
- Can you show the numeral?
- Number pairs for 4: part, part, whole model leading to number facts
- and generalisations



Counting



Counting

Try to make time for regular opportunities to play mathematical games. Games help to develop reasoning. Do you plan to use games regularly?



Counting



Playing games help to develop:
reasoning skills
social skills
ability to count
ability to subitise

What your child needs to know...

- ▶ By the end of the EYFS, children should be able to

NUMBER

- ▶ Use numbers from 1-20 in the correct order when counting things.
- ▶ Say 'one more' or 'one less' than a number.
- ▶ Add groups of 2 things together and tell you how many they have got altogether.
- ▶ Take things away from a group and tell you how many they have left.
- ▶ Solve problems that are important to them e.g. Sharing snacks between me and my friends so that we all have the same number of pieces of fruit.



Mathematics

EYFS Statutory Educational Programme:

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.



HOW CAN YOU HELP?

Any questions?

Thank you for coming!

