Early Years Maths Workshop for Parents

early years staffroom

Mathematics

Number ELG

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.

Numerical Patterns ELG

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;

Yearly overview

The yearly overview provides suggested timings for each block of learning, which can be adapted to suit different term dates or other requirements.

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Getting to know you		Match, sort and compare		Talk about measure and patterns		It's me 1, 2, 3		Circles and triangles	1, 2, 3, 4, 5		Shapes with 4 sides
Spring	Alive in 5		Mass and capacity	Growing 6, 7, 8		Length, height and time		Building 9 and 10			Explore 3-D shapes	
Summer	To 20 and beyond		How many now?	Manipulate, compose and decompose		Sharing and grouping		Visualise, build and map			Make connections	Consolidation

Reception – Notes and Guidance

The Counting Principles

Following research from Gelman and Gallistel in 1978, it is vital that teachers understand the five counting principles. (Gelman, R. & Gallistel, C. (1978) The Child's Understanding of Number. Cambridge, MA. Harvard University Press.)

1 The one-to-one principle.

This involves children assigning one number name to each object that is being counted. Children need to ensure that they count each object only once, ensuring they have counted every object.

Children will sometimes count objects more than once or miss an object out that needs to be counted. Encourage children to line up objects and touch each one as they count, saying one number name per object. This will also help to avoid children counting more quickly than they touch the objects which again shows they have not grasped one-to-one correspondence.

Reception – Notes and Guidance

The Counting Principles

2 The stable-order principle.

Children understand that, when counting, the numbers have to be said in a certain order.

Children need to know all the number names for the amount in the group they are counting. Teachers can therefore encourage children to count aloud to larger numbers without expecting them to count that number of objects immediately.

3 The cardinal principle.

Children understand that the number name assigned to the final object in a group is the total number of objects in that group.

In order to grasp this principle, children need to understand the one-to-one and stable-order principle. From a larger group, children select a given number and count them out. When asked 'how many?', children should be able to recall the final number they said. Children who have not grasped this principle will recount the whole group again.

Reception – Notes and Guidance

The Counting Principles

4 The abstraction principle.

This involves children understanding that anything can be counted, including things that cannot be touched, such as sounds and movements e.g. jumps.

When starting to count, many children rely on touching the objects in order to count accurately. Teachers can encourage abstraction on a daily basis by counting claps or clicks. They can also count imaginary objects in their head to encourage counting on. This involves the children visualising objects.

5 The order-irrelevance principle.

This involves children understanding that the order in which we count a group of objects is irrelevant. There will still be the same number.

Encourage children to count objects, left to right, right to left, top to bottom and bottom to top. Once children have counted a group, move the objects and ask children how many there are. If they count them all again they have not fully grasped this principle.

Activities and symbols

An activity introduced by a reading from a fiction or non-fiction book.

Show children the illustrations from pages 1, 2 and 3 of the story *Anno's Counting Book* by Mitsumasa Anno.

Encourage them to look at the pictures and identify where they can see the different representations of 1, 2 and 3

Where do they see each representation?

How do they see it?

An activity which includes a rhyme or musical instrument.

Have a pile of beanbags.

Beat a drum either 1, 2 or 3 times.

Children listen carefully and count out 1, 2 or 3 beanbags from a larger group to match the number of beats.

A suggested daily routine to be supported by a teacher.

Daily routine

- When lining up in the day, ask children to join the line depending on different attributes, for example, line up if you have a sister.

An outside activity or one that uses resources from nature.

Go outside and model how to make simple large-scale patterns, such as stick, leaf, stick, leaf, stick, leaf.

Support children to copy the patterns and see if they can continue them. Encourage children to use loose parts to make simple patterns for a partner to copy and continue.

An activity that has accompanying teaching slides to support adult-led learning as part of a premium subscription.

Prepare a set of dot plates or number cards which have 1, 2 or 3 dots in different arrangements.

Hold up the dot plates and ask the children how many dots.

Can children show the correct number of fingers?

Ask children if they can match the numerals 1, 2 and 3 to the dot plates.

A digging deeper activity to deepen children's understanding is provided for each small step.

Wrap up a range of boxes, each with a different mass.

Ensure that some of the small boxes are heavy and some of the large boxes are light.

Pick up a box and ask children to predict if it will be heavy or light.

Ask them to test their predictions using a balance scale.

Are all small boxes light?

Subitising

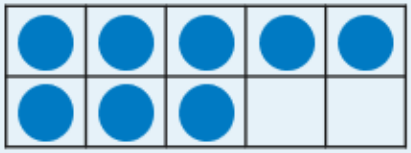
Children can learn to recognise the amount of objects in a group without having to count each object.

We often do this without thinking when we throw a dice.

Number Bonds

Using 10 frames helps children see the patterns between numbers.

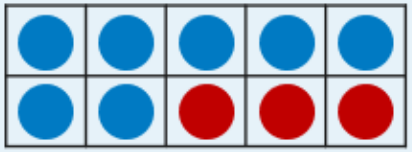
8 objects in the 10 frame.
2 objects missing,



8 + 2 = 10
2 + 8 = 10

10 - 2 = 8
10 - 8 = 2

We use different colour in the 10 frames to help too.



Learning through play at school and home

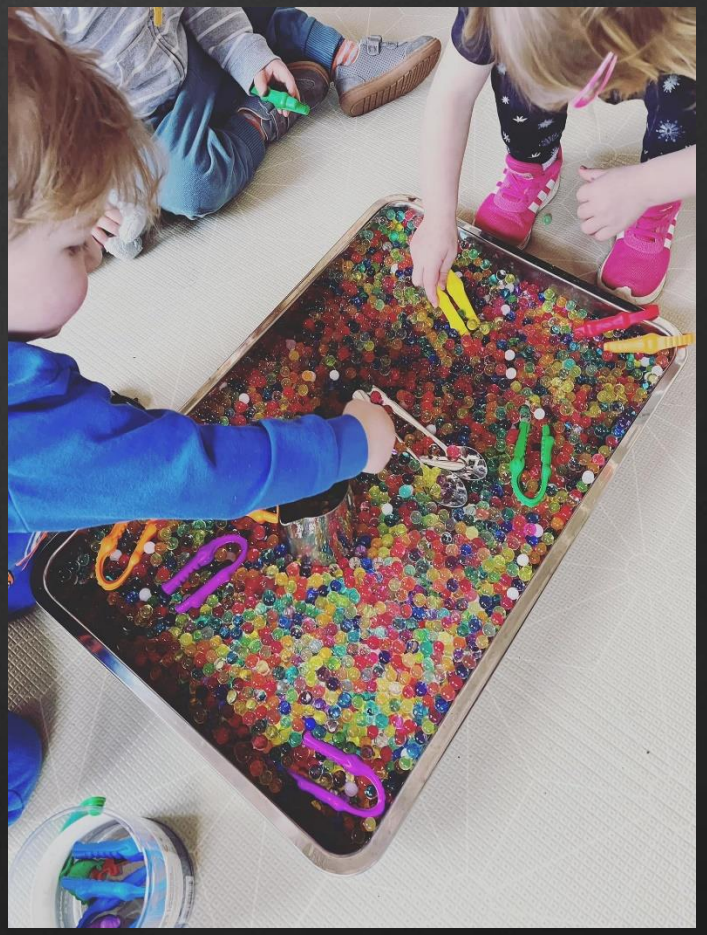
- Play is essential in teaching and consolidating in Maths.
- Many of the maths objectives within Development Matters can only be developed during free play.
- Play enables children to be independent and remain curious.

What can the environment teach in maths and how teachers facilitate learning?

Mathematical Language

- Lots of maths language for example more, less, big, small, wide, thin and positional language needs to be modelled by adults for children to learn and it is so much more effective if it's during authentic play experiences.

- This can be replicated at home when doing every day activities.



early years staffroom

Problem solving, reasoning and pattern

- Loose parts are not only amazing for helping children to develop creativity, problem-solving and reasoning skills, but are also perfect for developing and embedding pattern creating.

- Construction is another area where children can learn these undervalued skills.

early years staffroom

Weight and Measures

- We model measuring for example outside during building and construction: large scales outside, small balance scales inside for children to explore.

- Cooking help children independently develop important maths skills while having fun!

- Any cooking you do with your child at home will be really helpful.

early years staffroom

Money

- The best way to learn about money is to use it in a purposeful way. We use a role play shop, rolling snack till, or impromptu shop. Children can use it independently.
- Any shopping children can help with at home will help embed the learning.

Time

- We encourage children to use time every day for example measuring how long running races or car racing through guttering takes: estimate then check; will a sand timer work?

- Modelling using stop clocks during races or games.

- Ask children for the time.
-
- When discussing the daily routine, we talk about the times that things will happen.

- Always have as many clocks and watches at home as you can and modelling using time.

early years staffroom

Other ideas to help at home

Play board games such as Orchard Toys

Sing number songs and nursery rhymes

Engage in imaginative play with your child

Go on a number or shape hunt at home