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Maths in EYFS

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6 Key Areas of Maths Learning in EYFS

- Cardinality and Counting
- Comparison
- Composition
- Pattern
- Shape and Space
- Measure

Maths Early Learning Goals:

- In Early Years, children are assessed against 17 Early Learning Goals (ELGs).
- In Maths, the ELGs children are working towards are:

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.

- These ELGs are broken down into smaller steps throughout the year so 'on track' progress can be monitored

- Such progress is recorded on 'half termly 'progress checkpoints' where appropriate 'next steps' are also set to ensure the best possible rates of progress, from each child's individual starting point

Autumn 1:

Maths	
Number	**Numerical Patterns**
Subitise within 3 Count objects, actions and sounds accurately to 5 Understand composition to 3 Conservation of number (know the quantity stays the same when the set is rearranged)	Verbally count to 5 Compare sets for size/quantity Continue a simple repeating pattern e.g. AB or ABB Notice sub groups within 3 Accurately use language 'more than' 'fewer than' Identify circles and triangles Use prepositions – in, on, under, next to, behind
Next step?	Next step?

Autumn 2:

Maths	
Number	**Numerical Patterns**
Represent 5 in different ways (e.g. die frame, 5 frame, fingers) Understand that parts make a whole Compose and decompose to 5 Recognise numerals to 5 Conservation of number (know the quantity stays the same when the set is rearranged)	Verbally count to 10 Compare sets by looking to 5 – more than, fewer than, equal to Identify squares and rectangles Understand day and night Sequence 3 things accurately
Next step?	Next step?

Spring 1:

Maths	
Number	**Numerical Patterns**
Conceptually subitise to 6 Match numeral and quantity to 6 Order 1-5 Find 1 more and 1 less to 5 Partition to work out number bonds to 5 Represent 6 and 7 using 5 as a base	Verbally count to 20 Compare 'more than' 'fewer than' and 'an equal number' Compare 'heavy' and 'light' Compare 'full' and 'empty' Measure mass and capacity using non-standard units
Next step?	Next step?

Spring 2:

Maths	
Number	**Numerical Patterns**
Represent 6, 7, 8, 9 and 10 using 5 as a base Confidently compose and decompose to 10 Find 1 more to 10 Order 1-10 Notice when numbers are increased/decreased and explain thinking	Verbally count to 30 Double to 5 Recognise doubles and not doubles Sort into odd and even Sort objects according to object, size, colour, function or shape Measure height and length using non-standard units Know the days of the week Recognise some 3D shapes in everyday objects
Next step?	Next step?

NCETM – Mastering Number

- Mastering number – Specifically for younger children (KS1) and helps children to become more fluent and flexible with number facts

- It ensures that understanding of number facts is deep and embedded which gives children a very firm grounding on which to build more abstract/complex number understanding

- The programme focuses heavily on the language involved with numbers and embeds single digit number patterns and rules that can then be extended and applied to larger numbers as children progress through the primary phase

Main features of programme

- Teaching begins to move away from counting as a 'solving strategy'

- Lessons introduce and develop strategies such as subitisation (*Mrs Gwynn calls this 'quick eyes'*) which is the ability to look at an amount and know how many are there

- These strategies are more efficient in nature and, therefore, free up children's working memory

A worked example…

SOLVE:

$$22 + 26 + 24 =$$

Number Blocks!

- One of the most impactful things about this programme is that it utilises the very familiar TV programme, 'Number Blocks'

- Number blocks are brilliant for demonstrating some of the key maths concepts

For example:
https://www.youtube.com/watch?v=eJv6EAVrhdo
@Numberblocks - Additions | Learn to Count – YouTube
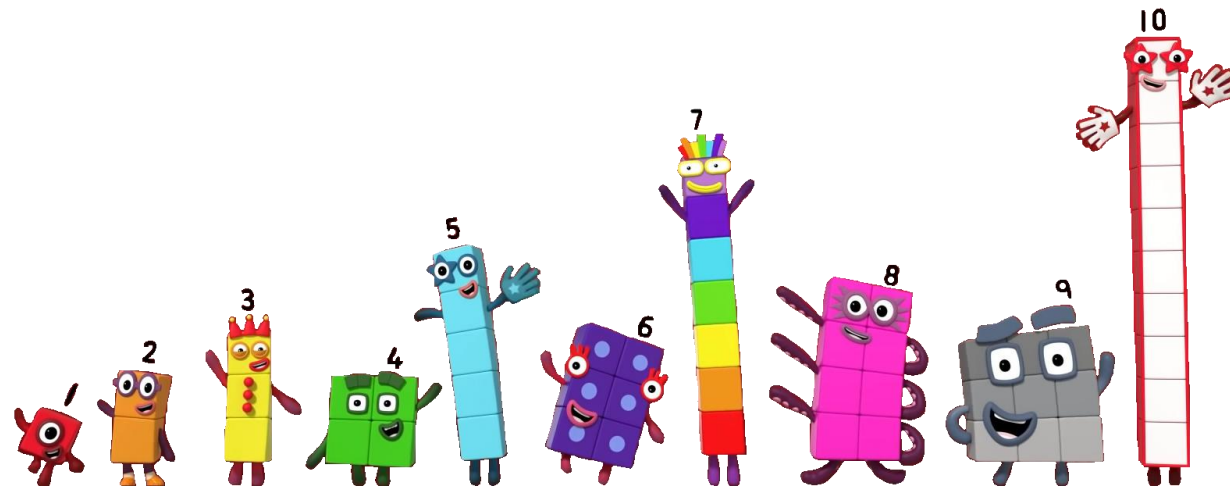
Key Skills: Cardinality

- This is the measure of a number so, for example, it is not just knowing that 1, 2, 3 (counted in rote) is 3 but that

is 3, and
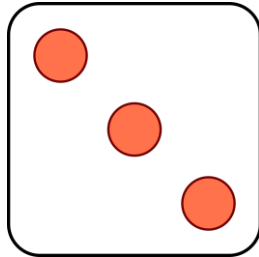
is 3, and

knowing simple facts like:
'if you have 2, that is one **less** than 3', and
'if you have 4 that is one **more** than 3'

Subitising

- The visual awareness of what a number is / looks like without the need to count.

- By the end of EYFS, it is expected that children will reliably <u>be able to subitise amounts to 5</u>

- The organisation of amounts and the patterns of numbers that we show children is really key

- One of the most commonly used visuals of numerical representations is that as you would find on the face of a die or on dominoes

Using Dice and Dominoes

- One of the most commonly used visuals of numerical representations
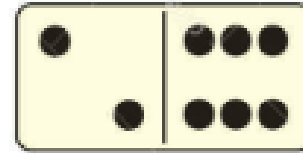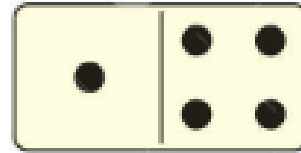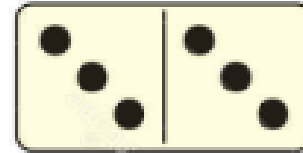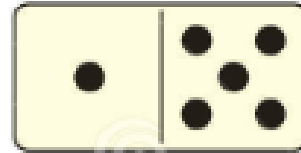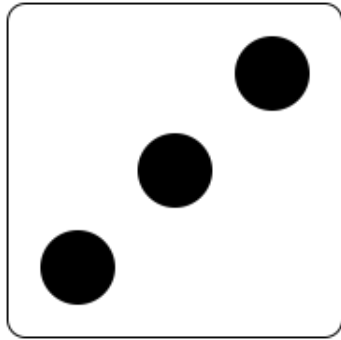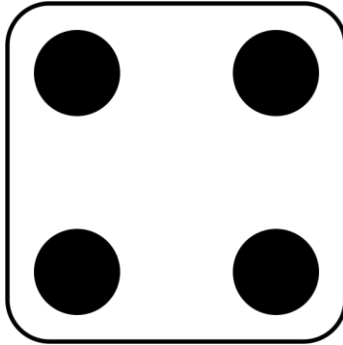
- Subitising visual representations such as these frees up the working memory in a child and provides them with capacity to find a total

- Being able to answer addition / subtraction questions using subitisation efficiency boosts confidence in children

Hungarian Dice Frame

- In addition to dice face visuals, Mastering Number also makes use of 'Hungarian Dice Frame'
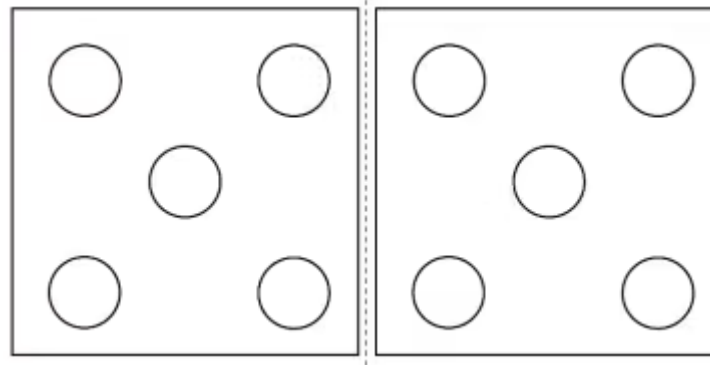
- This frame shows amounts to ten, utilising the 'dice face' representation that children are regularly exposed to

- This is especially effective for our number system as our place value concepts, including decimals, all work within the value of 10 integers

Hungarian Dice Frame

- The Hungarian Dice Frame exposes children to different number structures, allowing them to develop an appreciation of how numbers are composed

- In the above examples, children begin to understand that 6 is made of 5 and 1 more AND that 6 can also be found by finding 4 and adding 2 more

Stem Sentences

- Mastering number focuses heavily on development of maths talk

- Stem sentences - the explanation of a concept or problem using accurate vocabulary

- Stem sentences are modelled by teachers and used to encourage children to explain mathematical thinking

- Stem sentences are designed to improve the comprehension of maths problems and concepts

- This is done by breaking down these problems into smaller chunks and more familiar language that is more accessible to learners
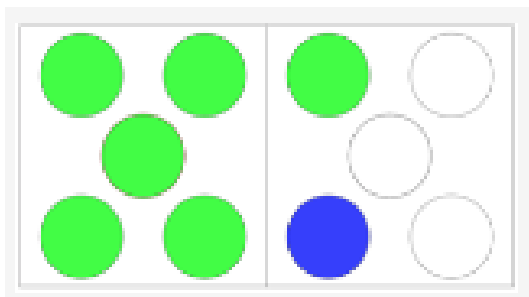
"7 is the same as 6 and 1 more"
"6 and 1 more is the same as 7"
"1 more than 6 is the same as 7"
"6 more than 1 is the same as 7"

Shape, Space and Measure

- Although early number fluency carries the weight of the Maths curriculum in Early Years, schools are also required to teach children about shape, space and measure as part of their broad and balanced maths curriculum offer

- In Reception, children are expected to:
 - Be able to use everyday language to talk about size, weight, capacity, position, distance, time and money
 - Be able to compare quantities and objects and to solve problems
 - Recognise, create and describe patterns
 - Explore the characteristics of everyday objects and shapes and use mathematical language to describe them

Shape, Space and Measure

Use 'tidy up time' opportunities to explore positional language:

"please can you push your chair UNDER the table?"

"please put the blanket ON TOP of the bed."

"please put your notepad BESIDE the telephone." Etc

Use building blocks/coloured Lego/Duplo to create patterns

Shape, Space and Measure

Create opportunities for the language of comparison to be developed
For E.G: Ordering cuddlies to compare height
Model your own talk vocabulary such as 'tallest', 'shortest', 'larger than', 'smaller than'

- Use containers of different shapes and sizes to encourage exploration of concepts such as 'capacity' (how much we can fit inside a container) – using vocabulary such as 'full', 'empty', 'half empty' etc – bath time is a great opportunity for this!
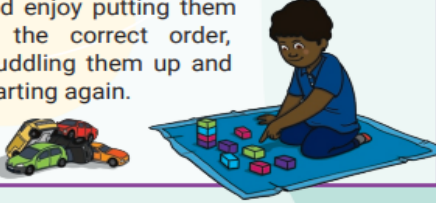
Shape hunt:
What shapes are the things around our house made up of?
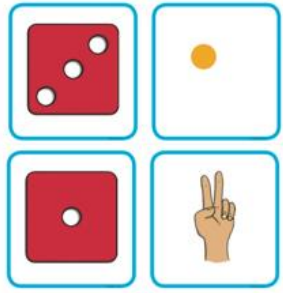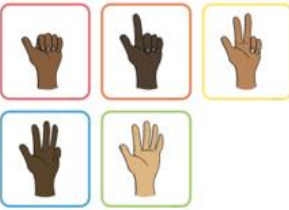
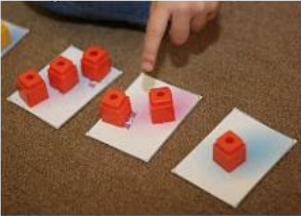# How to support and develop number sense at home
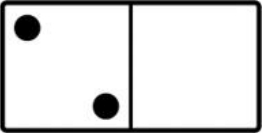
Help Your Child with Maths

Counting
Practise counting out objects, such as buttons, toys or sticks collected on a walk. Encourage your child to point to each object as they say the number name.
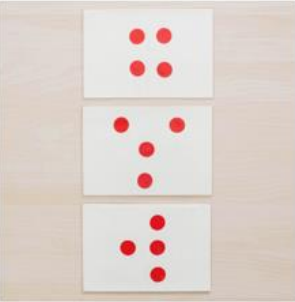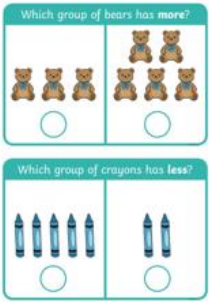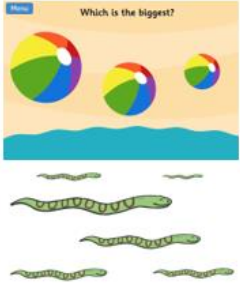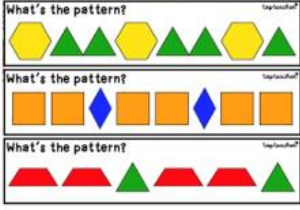
Songs and Rhymes
Songs and rhymes are great for helping young children learn to count. Focus on numbers 1-5 and then 1-10. Try 'Five Little Ducks Went Swimming One Day' and '1, 2, 3, 4, 5, Once I Caught a Fish Alive'.

Matching
Dominoes can be a great way to understand that a number refers to an amount of objects. Matching games can also help your child to understand 1:1 correspondence.

Talk
Talk to children about the different uses of numbers. Talk about numbers you see all around you. For example, 'Look, there are three cats on the wall' or, 'Can you see the number 5 on the gate?' Play games and talk about the numbers on the dice (board games are great for this).

Cooking
Measure ingredients and bake something yummy together and set the timer for it to cook.

Number Spotting
Try and spot numbers wherever you go – on a menu at a cafe, on the bus, at the shops or people's front doors on a walk.

Shapes
Understanding shape helps us to make sense of the world around us. Go on a shape hunt around your house. See if you can find circles, squares, rectangles or triangles.

Sorting
Anything can be sorted into groups! Sorting objects into sets of things with similar characteristics is important for beginning to understand what things have in common. This could be snacks, buttons or toys and can be extended to talk about how many are in each group. You could ask, 'Which has more? Which has less? Let's count and check!'

Ordering Numbers
Once your child has become familiar with counting then they can start ordering numbers. You could label blocks, cars or dinosaurs with numbers 1-5 then 1-10 and enjoy putting them in the correct order, muddling them up and starting again.

Every Day
Do maths every day! You might not think it but you will be doing maths every day. Helping your child get dressed, going to the shops, singing counting songs, counting the steps on the stairs, following a daily routine – most activities we do with our child involve maths.

Play
Play with objects, such as shells, bottle tops, beads or building blocks. These can be sorted into sets, used to make simple patterns or pictures (like a face or boat) or used to prompt discussions about shape.

- Create a bank of resources that promote maths language and thinking: dice, dominoes, playing cards, abacuses

Use resources send home each half term to guide the content of 'at home' activities:

My Autumn 1 Maths Targets

Join in with songs and rhymes counting to 5	Subitise arrangements of 1, 2 and 3	Represent quantities to 5 on my fingers	Count objects, actions and sounds once and only once.	Identify and make own arrangements of 2.
Identify and make own arrangements of 3.	Use positional language to describe patterns of 4 and make own patterns of 4.	Compare 2 sets of objects and say which is 'more than' or 'fewer than'.	Compare size, height and length of different objects.	Identify, continue and make and repeating patterns

Thank You!