# Maths in EYFS - Early Learning Goals

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

No Shape, Space and Measure Early Learning Goal since September 2021. However, it is still expected to be taught and is through our curriculum at LMPS and WhiteRose Maths.

What do you see?

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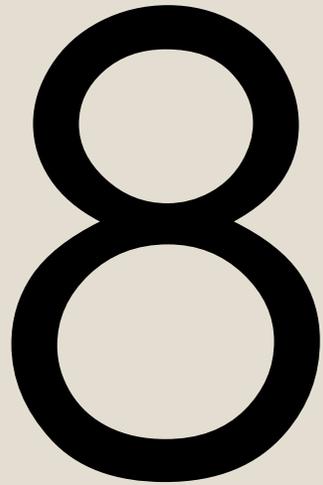
What is Teaching for Mastery?

At LMPS, we see Teaching for Mastery in maths as

◦ allowing the children to gain a deep understanding of maths,

◦ allowing them to acquire a secure and long-term understanding of maths that allows them to make continual progress to move onto more complex topics.

We focus and explore fluency, reasoning and problem solving

Representing Numbers

◦ understand the number rather than just recognising the numeral

◦ numbers can be represented in many ways, not just as a written numeral
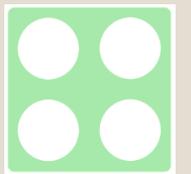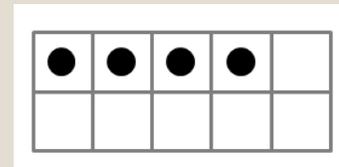
Counting

When counting, children need to understand these key principles …

◦ That we need to say one number for each object counted (touch counting / One-to-one correspondence – match one number name to each item to be counted)

◦ Stable order - say the number names in the correct order

◦ Cardinality – the last number in the count is the total size of the group. The final number we say is how many altogether.

◦ That we can count objects in any order and the total stays the same.

Recognising amounts – **subitising**

Another skill is to develop other mental strategies to identify the number of items in a group without counting them individually. We can "see" instantly a handful of things and without knowing how many there are - this is called subitising.

◦ e.g

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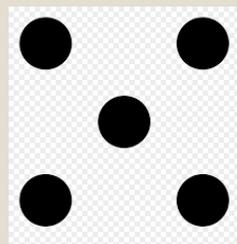
*Can you subtise these?*
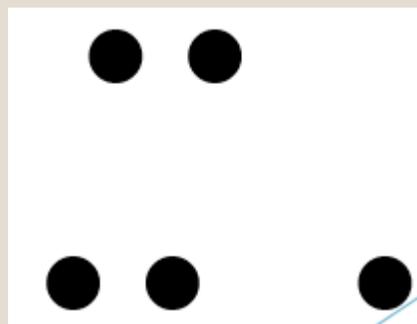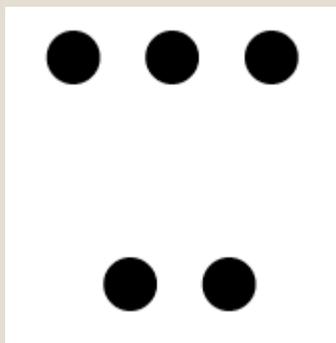
Conservation of number

Understanding that the total stays the same even when the objects move

When children first start to use numbers, they often do not understand that if we move objects into another arrangement the total stays the same. We practise this with many different types of objects but a useful tool is using a tens frame to be able to move counters around
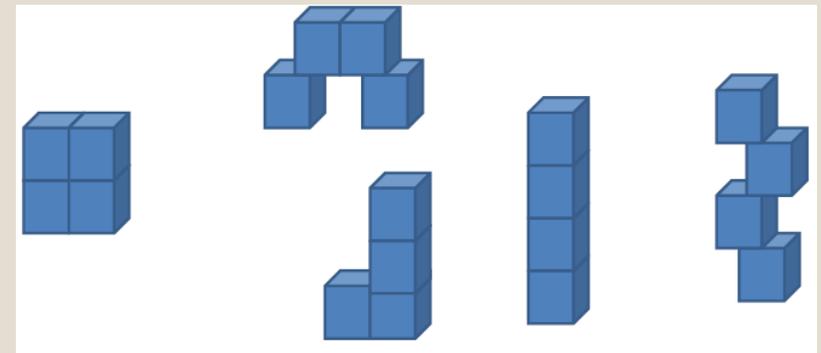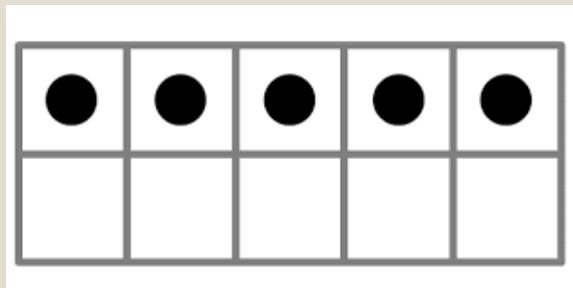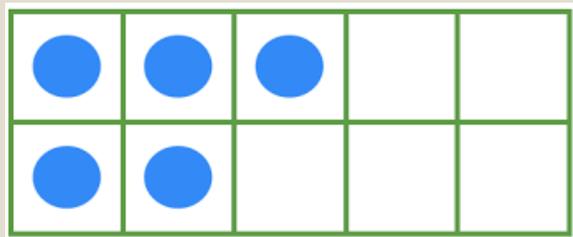
Representations we use in class

Part-Part Whole Model

◦ Shows how numbers can be split into parts. Will see the relationship between the whole number and the component parts, this helps learners make the connections between addition and subtraction

◦ Part-Part Whole reasoning also helps pupils to interpret, visualise and solve word problems.

https://www.youtube.com/watch?v=vzeeaxLQDkE
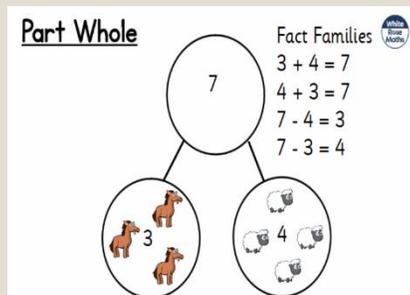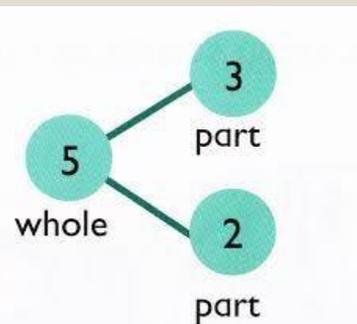
Bar Model

Similar to the Part-Part Whole model.

It is a way of representing that number
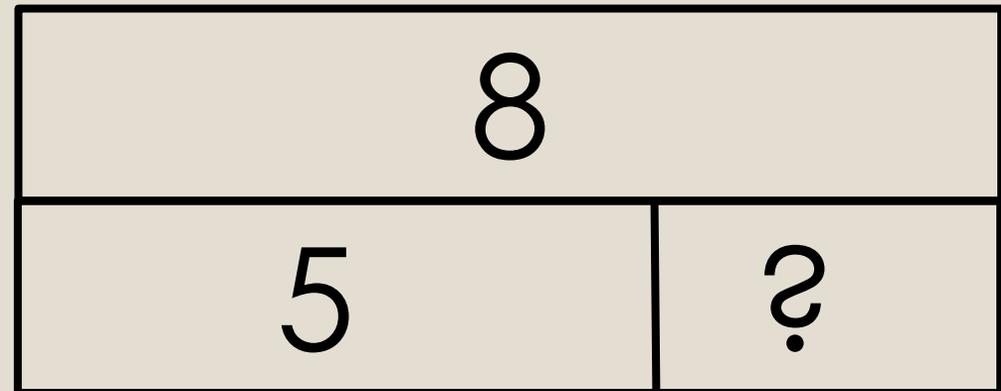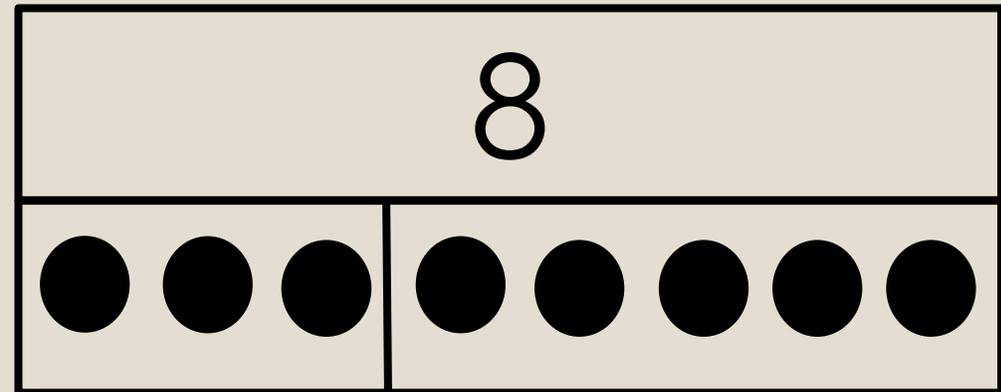
Reasoning

Reasoning in maths helps children to be able to explain their thinking.

It helps them to…

◦ think about how to solve a problem,

◦ explain how they solved it

◦ to think about what they could do differently.

Some examples of reasoning are:

◦ True and false statements e.g adding one to a number always makes it smaller

◦ Spotting incorrect maths e.g 1, 2, 3, 4, 6, 5, 7, 8, 9, 10

◦ Explaining how we know something or how we worked it out .

Which cookie is the odd one out? And why?

Problem Solving

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

In Reception, problem solving might include:

◦ spotting, following and creating patterns

◦ estimating amounts of objects

◦ predicting how many times they can do something in a minute

◦ sharing objects between different groups – particularly when the amount of groups change and the amount of objects stays the same

◦ finding different ways to partition numbers e.g 5 could be 5+0, 4+1, etc

Now, what do you see?

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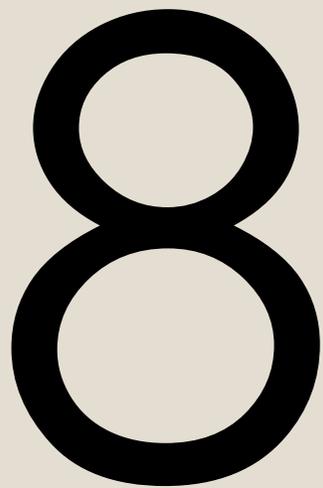
What your children see

August

Subtraction

$8 - 0 = 8$
$8 - 1 = 7$
$8 - 2 = 6$
$8 - 3 = 5$
$8 - 4 = 4$
$8 - 5 = 3$
$8 - 6 = 2$
$8 - 7 = 1$
$8 - 8 = 0$

8

No day

That 8 pencils were longer than 8 toy trains.

Addition

$1 + 7 = 8$
$2 + 6 = 8$
$3 + 5 = 8$
$4 + 4 = 8$
$5 + 3 = 8$
$6 + 2 = 8$
$7 + 1 = 8$

Even number

7 8 9
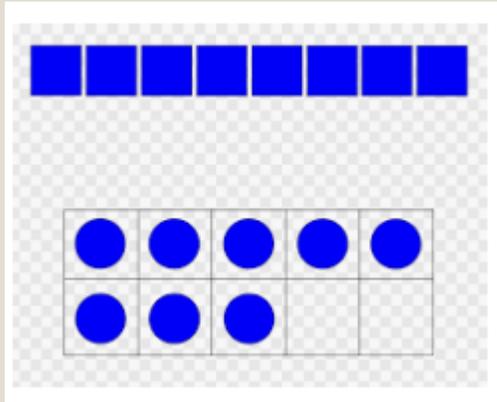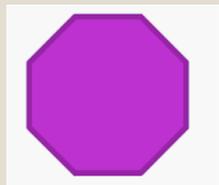
1 less   1 more

8 feathers were lighter than 8 marbles
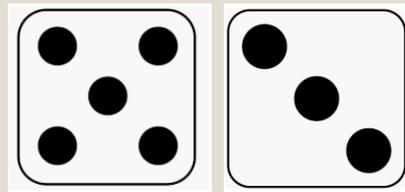
Phase	Number	Measure, Shape and Spatial Thinking
Just Like Me	◊ **Match** - to find and match the objects that are the same and different ◊ **Sort** - things that have something in common Have a selection of to be sorted, based on; colour, size or shape *Can they come up with their own criteria?* ◊ **Compare Amounts** - size, quantity Once confident with sorting, they can move onto ordering and comparing numbers *Vocabulary: same, different, match, round, smooth, rough, colours, sorting, long, short, compare, equal, fewer, fewest, check*	◊ **Compare Size, Mass and Capacity** Objects can be compared and ordered to their size ◊ **Exploring Pattern** - what comes next? Copy, continue and create simple repeating patterns Following an A B A B pattern *Can they say their pattern out loud using the correct vocabulary?* *Vocabulary: big, little, more, large, small, less, bigger smaller, tall, long, short, next, repeating*
It's Me; 1, 2, 3	◊ **Representing 1,2,3** Identify representations of 1, 2, 3 Subtise or count to find out how many, or make their own groups ◊ **Comparing 1,2,3** Count on and back, which has more or less? *When we count, each number is one more* *Count backwards, each number is one less* ◊ **Composition of 1,2,3** All numbers are made up of smaller numbers Explore the different compositions of 2 and 3; *for example, 1 and 2 make 3* *Vocabulary: one, two, three, quantities, how many…,match, sort, one more, one less, same, different, combine, altogether*	◊ **Circles and Triangles** Circles: one curved side Triangles: three straight sides Recognise shapes in everyday life ◊ **Positional Language** Hear and begin to use positional language to describe how items are positioned in relation to others *Vocabulary: circle, curved, side, straight, same, different, next, where, go, over, on, in, between (and other prepositional phrases)*

Concrete, Pictorial and Abstract

◦ Develop a deeper understanding and mastery of mathematical concepts

◦ Use **concrete** objects to help them make sense of the concept or problem; this could be anything from real or plastic fruit, to straws, counters or cubes

◦ This is then developed through the use of images, models and children's own **pictorial** representations before moving on to the **abstract** mathematics.

◦ Will travel along this continuum again and again, often revisiting previous stages when a concept is extended

◦ Concrete can be used alongside the pictorial. Same, if a child is working in the abstract, 'proving' something or 'working out' could involve use of the concrete or pictorial to support

What if my child is very confident with number already? Will this hold them back?

You may feel that your child can already count to 10 and therefore understands everything there is to know about counting to 10.

But have you considered:

◦ they may just know the numbers by rote?

◦ they may not have grasped the 5 ness of 5.

◦ they may not understand the numbers within numbers i.e that 5 is made up of 3 and 2, 4 and 1?

Calculation in EYFS

◦ We use Number blocks and a practical Mastery approach to ensure a depth of understanding about numbers.

◦ Children build on their previous knowledge of 'more' 'fewer' 'composition of number' to help them carry out calculations.

◦ Understanding of vocabulary is key, adults teach and model this. It is revisited and displayed in the classroom to help embed it. (more, fewer, less, altogether, equal, add, subtract, take-away, pattern, double, half)
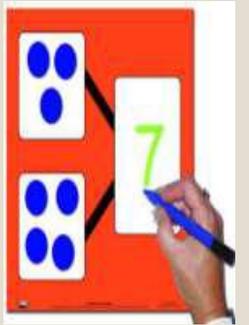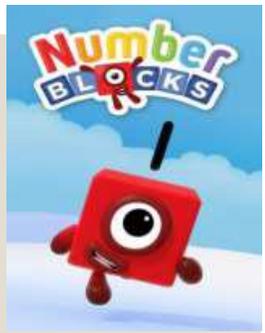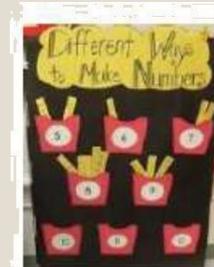
In the Classroom

◦ Carpet sessions - Teacher models skills and key vocabulary. This is displayed on the working wall and referred to during sessions/ Differentiated questioning/ CPA Approach (Concrete-Pictorial-Abstract)/ Paired talk

◦ Activities - Maths activities are available for children throughout the week, both inside and outside. These are open-ended and children are extended through dialogue with adults

◦ The most important thing is for your child to experience a positive attitude to maths – it is OK not to know the answer straight away or be right first time. Maths is a learning journey and regular practise and experience of maths will help your child when learning in the classroom.