

Mathematics Mastery in Year 1 and 2



Key principles

- Fewer topics in greater depth
- Mastery for all pupils
- Number sense and place value come first
- Problem solving is central

What does the National Curriculum say?

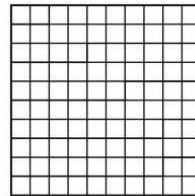
- “Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content.”
- “Those who are not sufficiently fluent should consolidate their understanding, including through additional practice, before moving on.”

What are concrete resources?



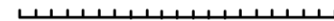
Bead strings

Part, part whole model



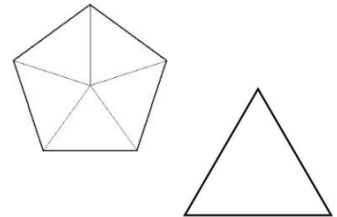
100 grids

Number lines



Tens frames

Shapes



Multilink cubes



Dienes



Mathematical language

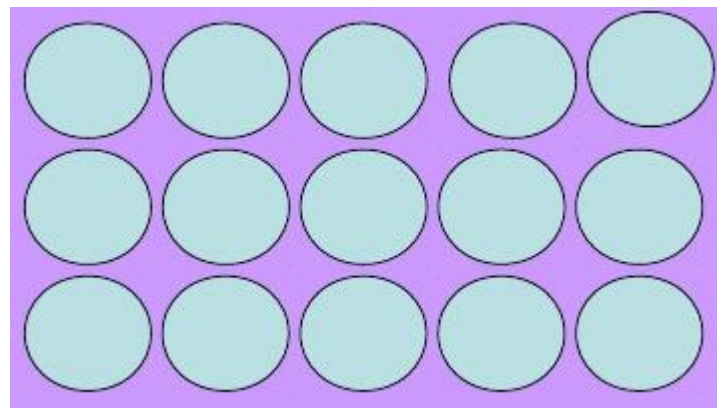
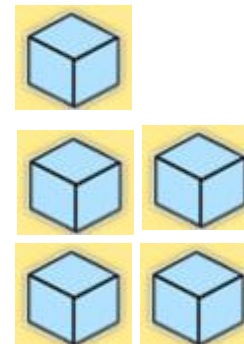
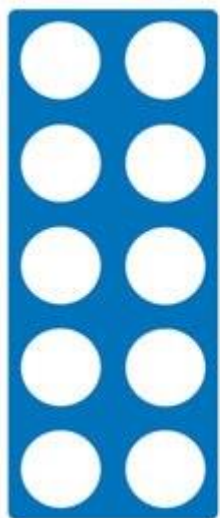
- Sharing essential vocabulary at the beginning of every lesson and insisting on its use throughout
- Modelling clear sentence structures using mathematical language
- Opportunities for talk throughout

Your turn!

- Using the resources available, can you show the number 15?
- We ask the children to know all the different ways that numbers can be represented and that they have a real understanding of the numbers.

Fifteen

15

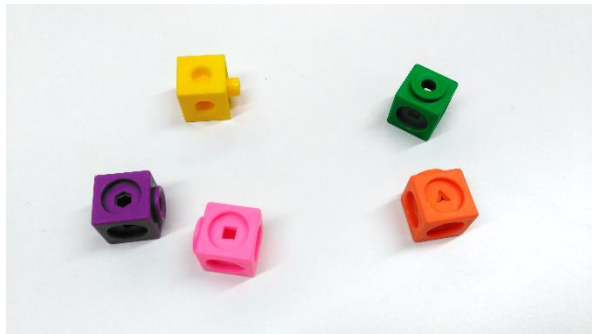
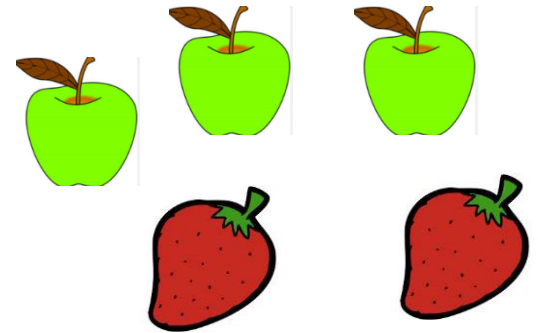
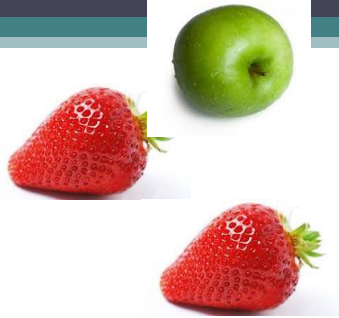
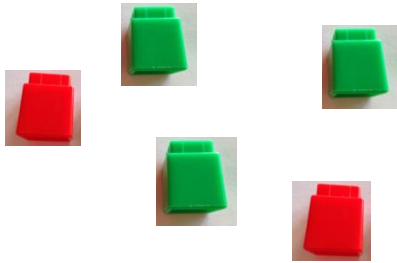


Mathematics
Mastery

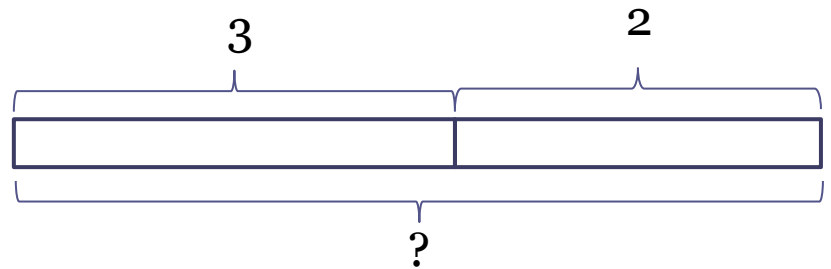
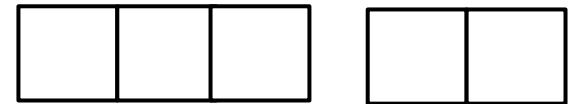
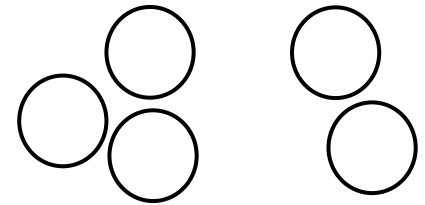
Conceptual understanding

Conceptual understanding

Pupils deepen their understanding by representing concepts using objects and pictures and, more abstractly, with words and symbols. They make connections between different representations and consider what different representations stress and ignore.



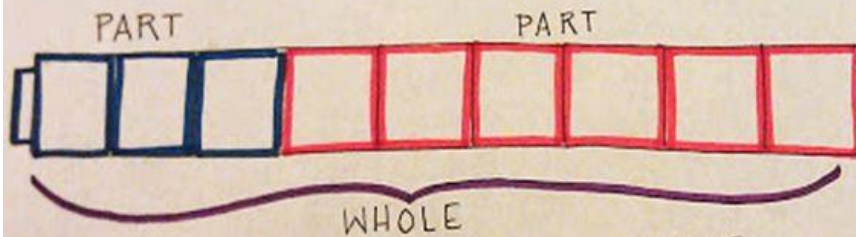
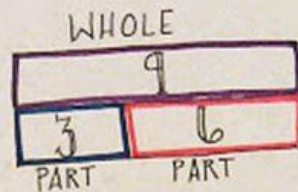
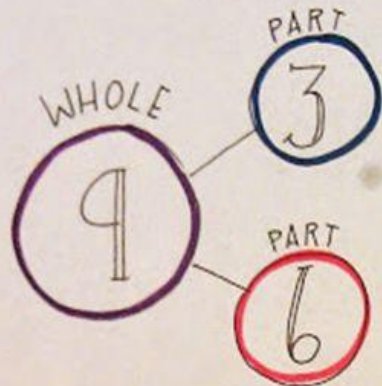
**Ben has 3 apples and
Joe has 2 strawberries.
How many pieces of
fruit do they have
altogether?**



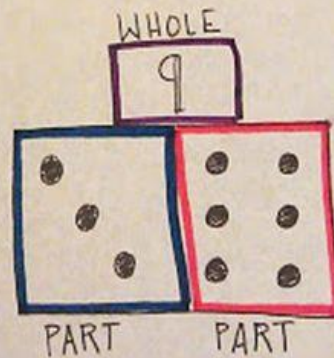
What do these words and phrases mean?

- Vertex/vertices
- Tens and ones
- Numicon
- Dienes
- Bar Model
- Part-whole model
- Exchange not borrow

PART PART WHOLE

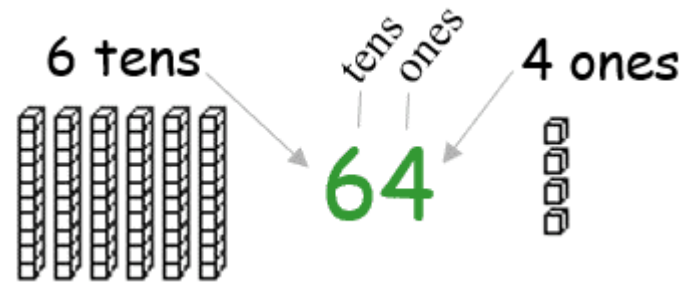


$$\begin{array}{c} \text{PART} \\ \hline \end{array} + \begin{array}{c} \text{PART} \\ \hline \end{array} = \begin{array}{c} \text{WHOLE} \\ \hline \end{array}$$
$$\begin{array}{c} \text{WHOLE} \\ \hline \end{array} - \begin{array}{c} \text{PART} \\ \hline \end{array} = \begin{array}{c} \text{PART} \\ \hline \end{array}$$



Number

- Order numbers – know how many tens and ones in a number – partition using tens and ones.
- Use a place value chart.
- Compare on a number line.



How do you know that 17 is more than 12?

How do you know that 9 is fewer than 14?

Subtraction

Try these using the resources

$$10 - 4 =$$

$$18 - 8 =$$

Again we also encourage the use of number lines to count back.

Multiplication

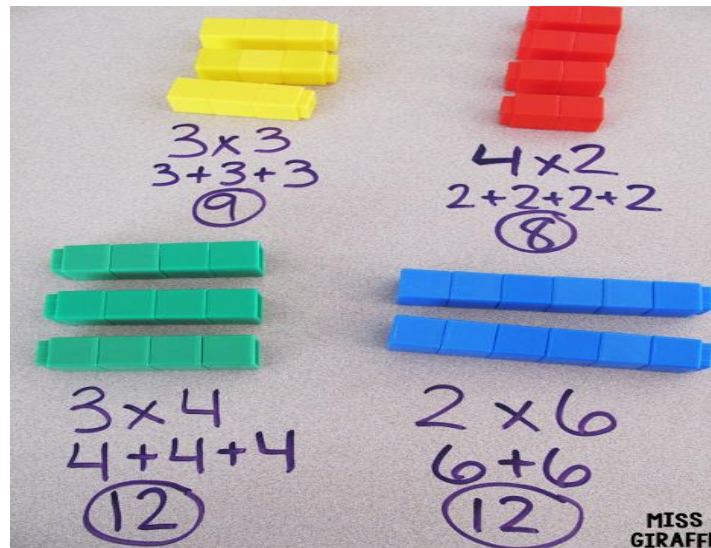
- In Year 1 and Year 2 children are expected to count in 2's, 5's and 10's from 0.
- Year 2 – repeated addition

$$5 \times 2 =$$

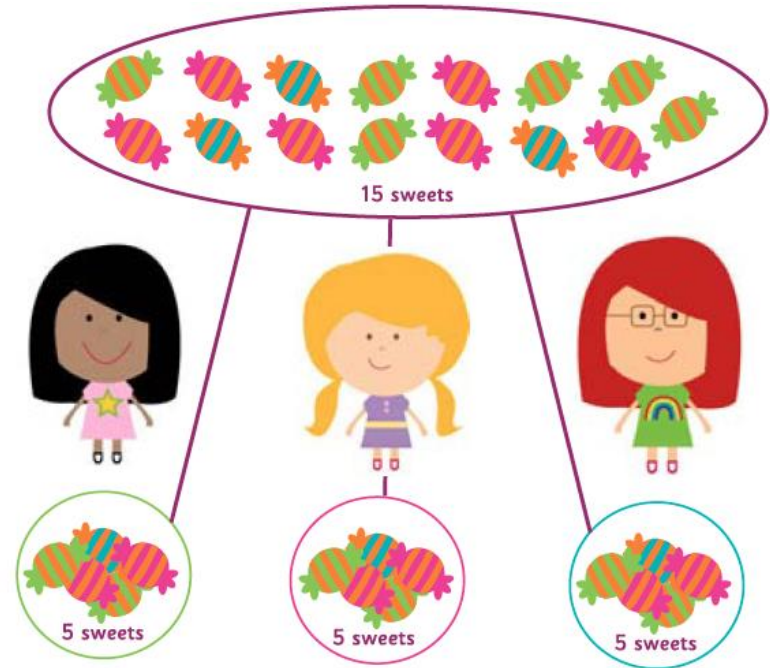
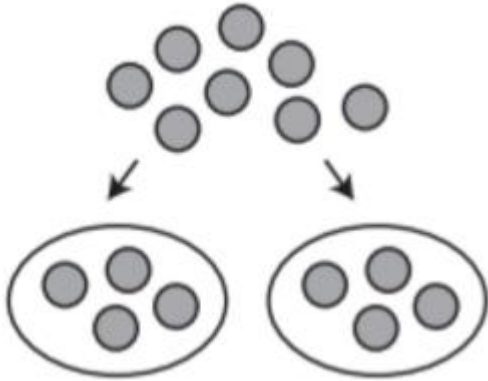
$$2 + 2 + 2 + 2 + 2 =$$

$$5 + 5 =$$

- Arrays



Half/share and dividing



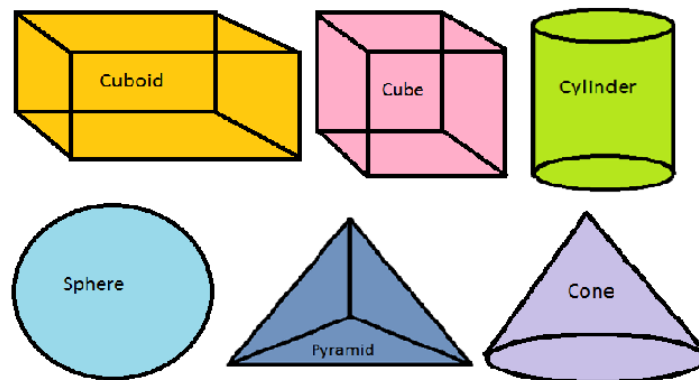
Bar models

2D and 3D shapes

- In both year groups they need to be able to name a variety of shapes.
- Say how many sides, faces and vertices that they have – this is trickier for 3D shapes.
- They need to be able to sort them by their properties.
- Know whether they are flat or curved.
- Know what 2D shapes they can see in the faces of 3D shapes.

- Direction and movement – move forward, backwards, left and right

- Positional language – on top of, behind, next to



How will children's learning be recorded?

- Learning sheets
- Photographs
- Books

* Some practical tasks may not always be recorded in the books

What can I do at home?

- Encourage your child to talk in full sentences.
- Take every opportunity to look at maths that happens around you everyday – what the time is, how long it takes to do something, using coins to pay etc.
- Read the learning letters to keep up to date with the Maths learning in the class.