Teaching and Learning Mathematics: Our Mastery Approach





Our Core Belief

Success in mathematics for every child is possible.

Mathematical ability is not innate; it can be increased through effort.

What does mastery mean?

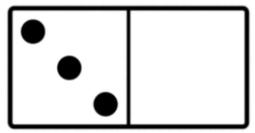
Mastery is a deep understanding which can be applied and used in different contexts.

Key Principles – Mastery Approach

- Longer/ continued focus upon one topic, i.e. place value or addition/ subtraction;
- Children develop conceptual and procedural knowledge/ understanding;
- Learning opportunities include concrete, pictorial and abstract;
- Fluency, reasoning and problem solving are key skills for all concepts;
- Mastery for **all** pupils.

Our Mathematical Mastering Journey

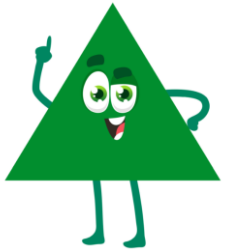
Early Years = foundations of number sense = much more than recognising numbers and counting!





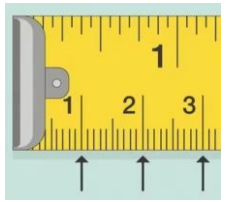
3 is more than 2

3









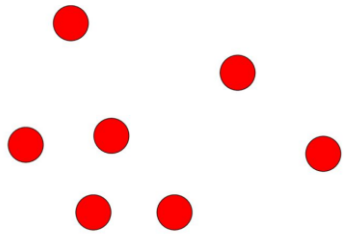


2 is less than 3

It's understanding the value of the number, recognising the number in different contexts and making connections.

Teaching Number in Early Years

- Numberblocks
- In early years provision
- Mastering Number – daily program with a focus upon subitising, i.e. recognising by sight, without the need to count.



Teaching Maths from Y1 to Y6

- Use White Rose – small steps;
- In addition Y1 & 2 continue with Mastering Number;
- In addition, all year groups have a focus upon recall of number facts, including number bonds, times tables (TTRS), knowledge of conversions and equivalence, i.e. centimetres in a metre.

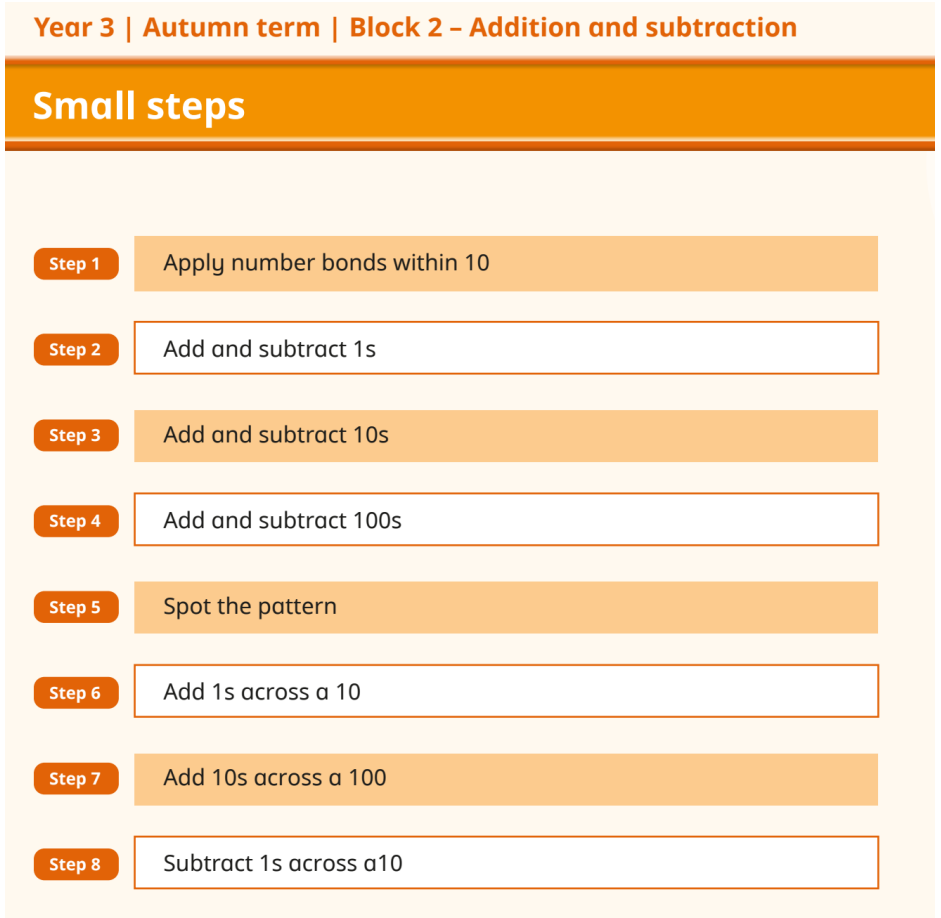
Teaching Maths from Y1 to Y6

Strands:

- Number and Place Value
- Addition and Subtraction
- Multiplication and Division
- Fractions, Decimals and Percentages
- Geometry
- Measure
- Statistics
- Algebra (Y6 only)

Teaching Maths from Y1 to Y6

Each strand is broken down into small steps; each step needs to be mastered before moving on as the next step builds upon this:



Year 3 | Autumn term | Block 2 – Addition and subtraction

Small steps

Step 1	Apply number bonds within 10
Step 2	Add and subtract 1s
Step 3	Add and subtract 10s
Step 4	Add and subtract 100s
Step 5	Spot the pattern
Step 6	Add 1s across a 10
Step 7	Add 10s across a 100
Step 8	Subtract 1s across a10

Developing Conceptual & Procedural Understanding

Ensuring that children understand the concept, i.e. that when we add, we combine parts to make a whole (part/ whole model);

When we multiply by 100, the starting number increases in value and becomes a hundred times bigger.

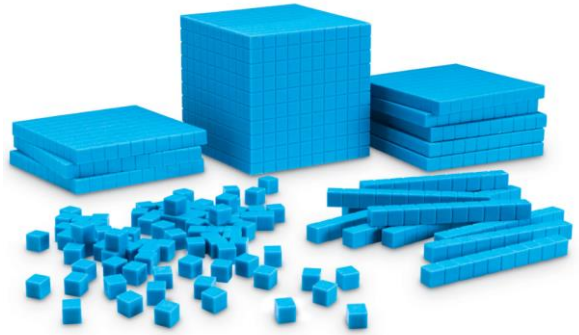
~~Tricks, i.e. add zeros or move the decimal place~~

Teaching Maths from Y1 to Y6

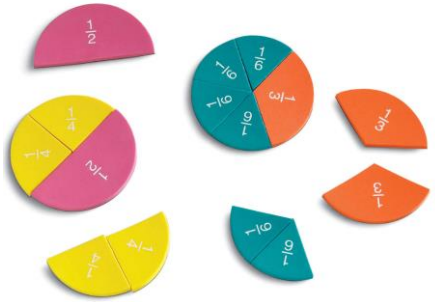
Teaching and learning activities involve concrete, pictorial and abstract:

Concrete (practical/ manipulatives) – show me. Children are supported to explore.









Teaching Maths from Y1 to Y6

Teaching and learning activities involve concrete, pictorial and abstract:

Pictorial = drawn

Abstract = written

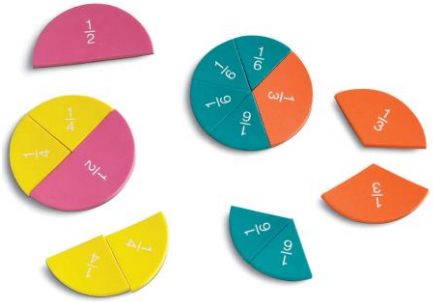


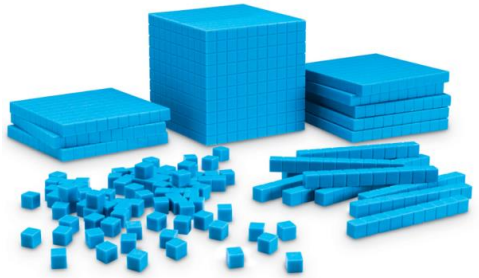
Representation & Variation

= Depth of learning



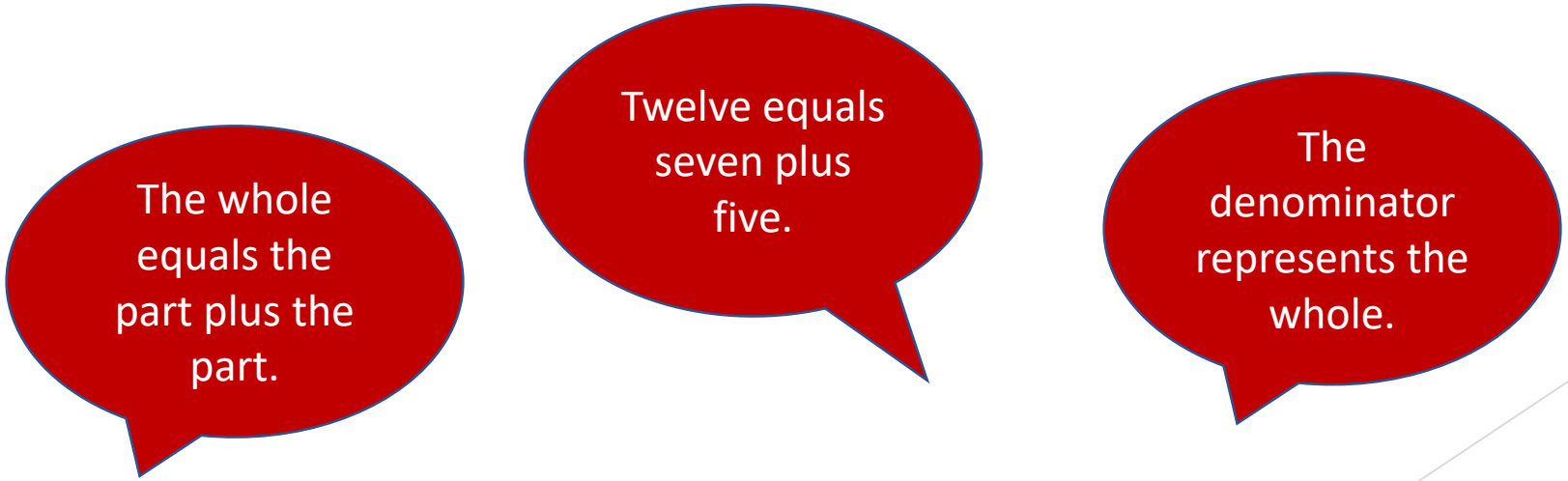






Mathematical Language

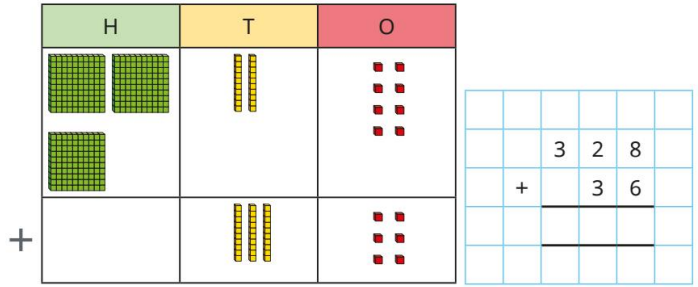
- Correct use of language is modelled by teaching staff;
- Full mathematical sentences are modelled and children are encouraged to use;
- I say, we say, you say.



Fluency, Reasoning and Problem Solving

Add 2-digit and 3-digit numbers

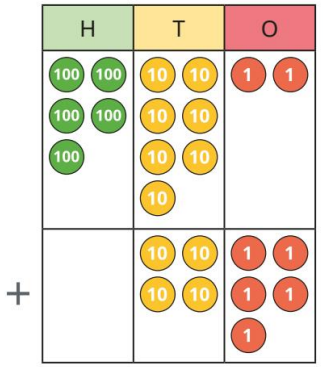
1 Use the place value chart to work out 328 + 36



		3	2	8	
	+		3	6	

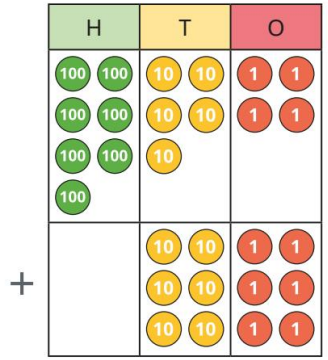
2 Work out the additions.

a) 572 + 45



		5	7	2	
	+		4	5	

b) 754 + 66



		7	5	4	
	+		6	6	

3 Use the column method to work out the additions.

a) 175 + 72

b) 307 + 84

c) 35 kg + 239 kg

d) 845 + 72

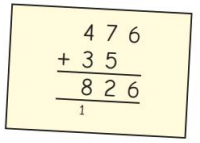
e) 436 + 85

f) £739 + £68

4 Ron works out 476 + 35

a) What mistake has Ron made?

b) Work out the correct answer.



5 Alex collects stickers.

She has collected 286 stickers.

She only needs 69 more stickers to fill the album.

How many stickers does the album hold when full?



Keep up approach

- In the moment intervention
- Same day intervention – mop-up
- Targeted intervention
- IDL – online program

Supporting your child

- Help them to develop recall of number facts, i.e. TTRS, counting, discussing number in environments, using language such as ‘more’, ‘less/ fewer’;
- Providing opportunities to use Maths in the real world, i.e. cooking, shopping, telling the time;
- Positive/ can do attitude towards Maths.

Spot the Maths



