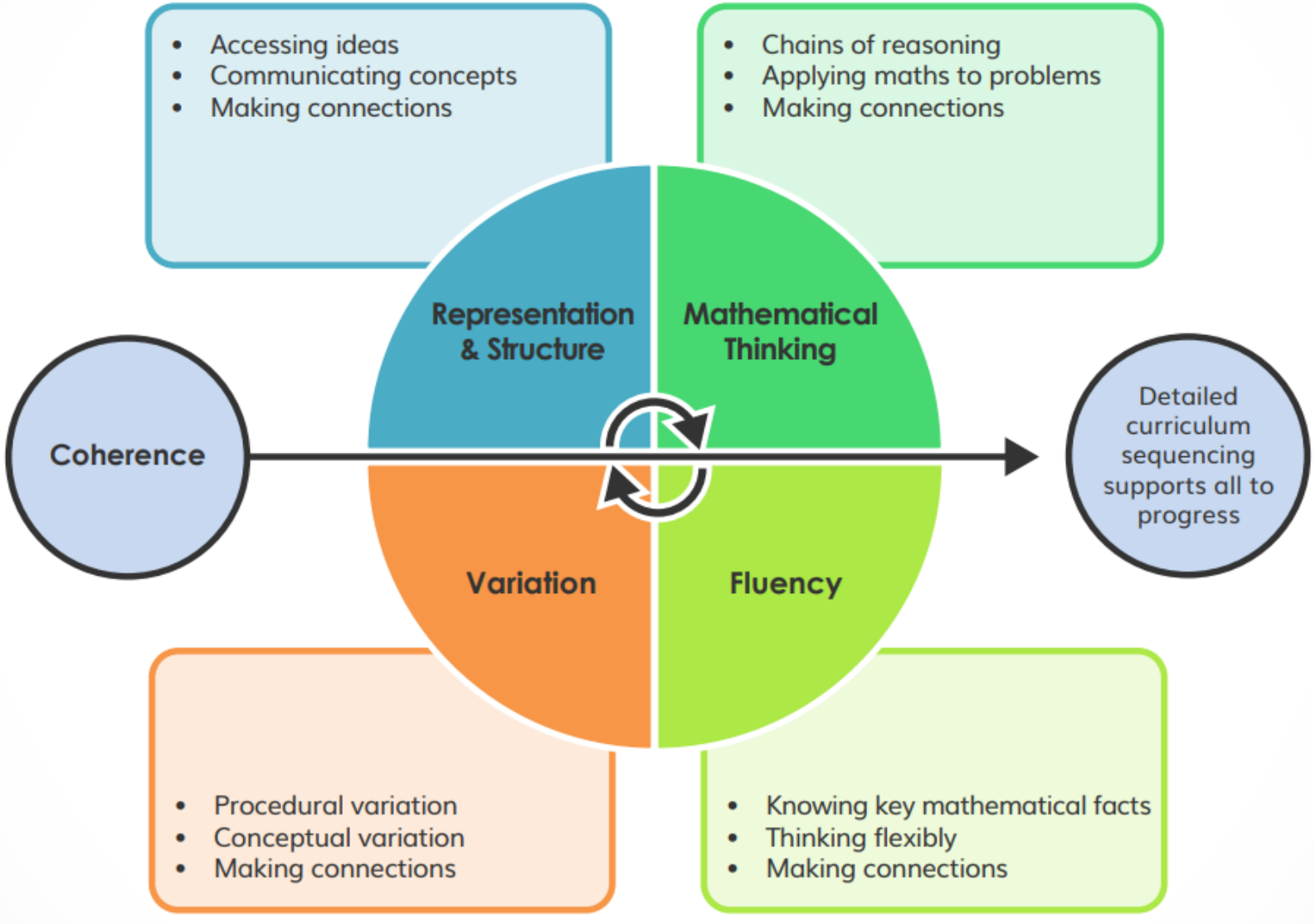
Maths Mastery at Priors Field

At Priors Field we aim to provide children with an opportunity to:

- Reason mathematically
- Identify relationships and make conjectures
- Make generalisations
- Build logical arguments
- Justify their thinking and prove solutions
- Use mathematical language effectively

We apply these skills to a range of problems, breaking them down into a series of 'steps to success'.

What is Maths Mastery?



Maths Mastery at Priors Field

- **Collaborative Learning**

  All pupils work together on the same lesson content at the same time.

- **Mastery Before Progress**

  Pupils must understand each concept before moving on to the next part of the curriculum.

- **Inclusive Learning**

  No pupil is left behind; everyone moves forward together.

- **Growth Mindset**

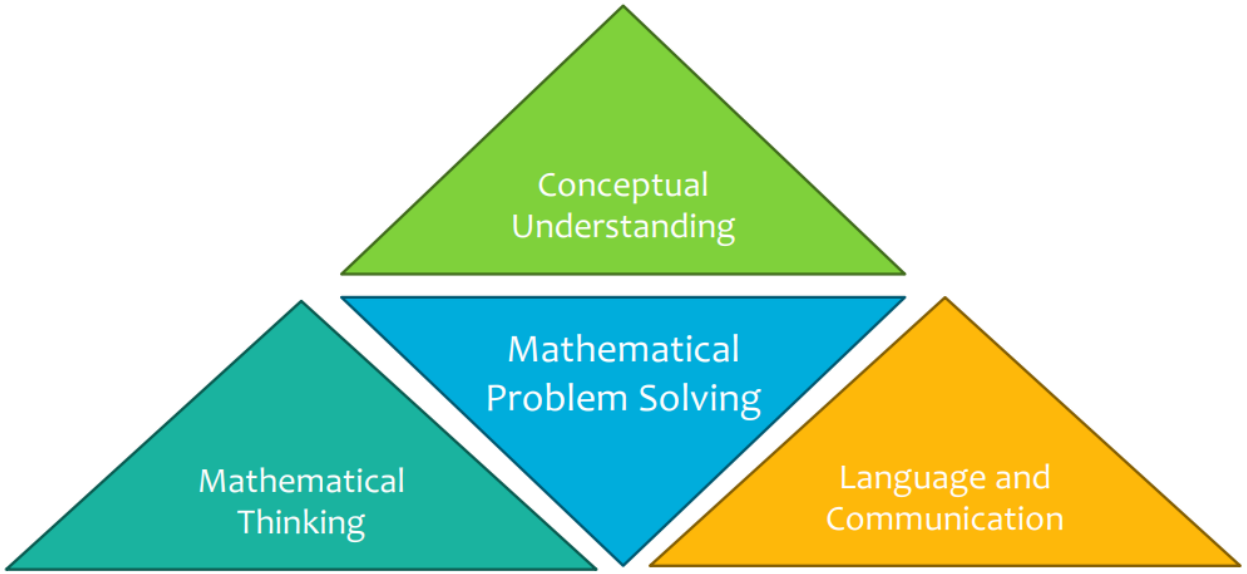
  By working hard and persevering in maths, all pupils can succeed.

Maths Mastery at Priors Field

Procedural fluency and **conceptual understanding** are developed together because they support each other.

We focus on activities that not only reinforce procedural fluency but also deepen **mathematical thinking**.

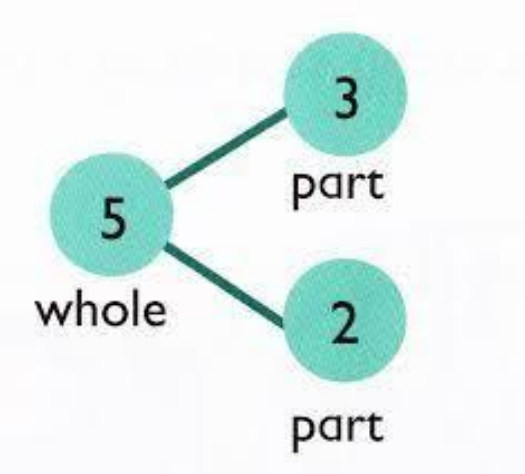
We dedicate significant time to **problem solving** using **key mathematical language** to explain our reasoning.

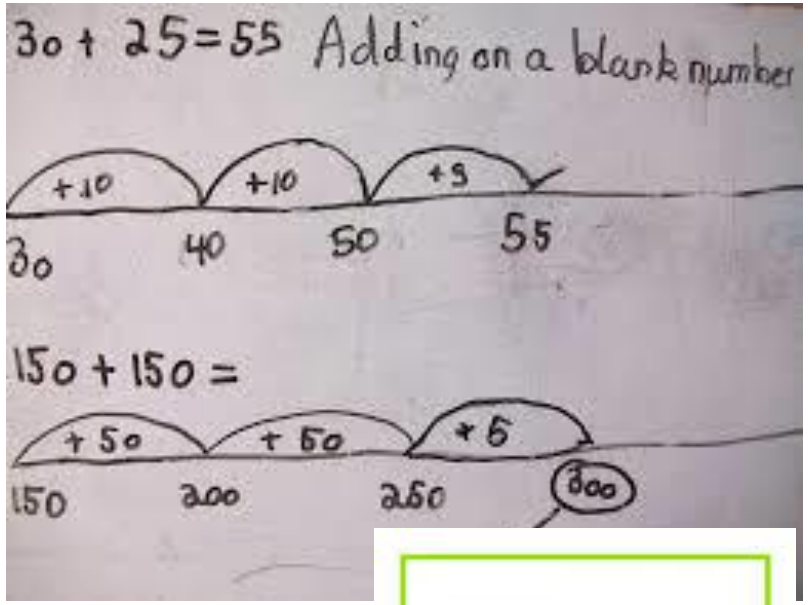


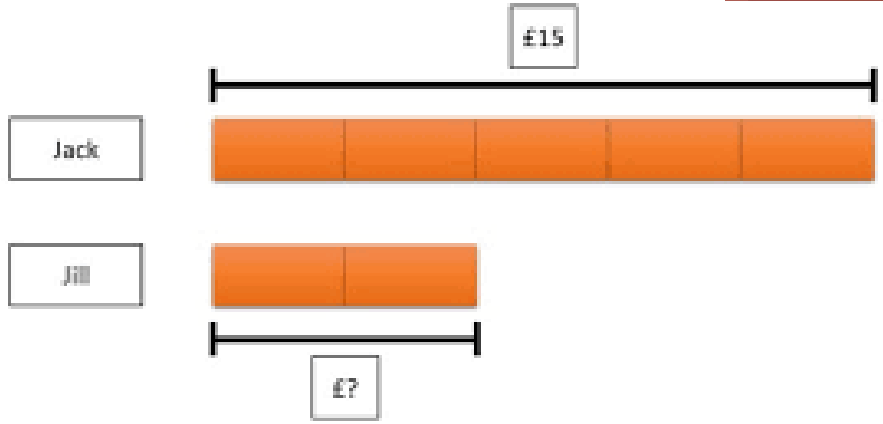
So…what strategies and manipulatives help children achieve mastery?

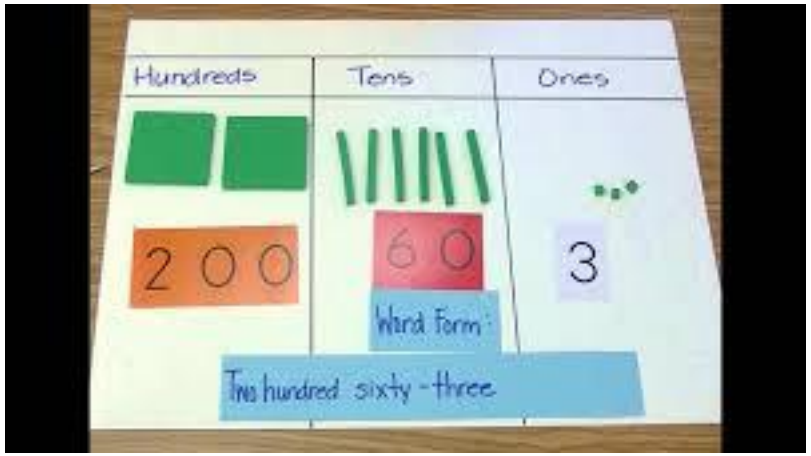
Concrete

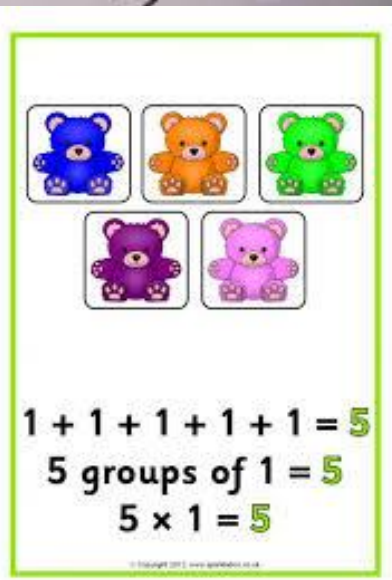
Pictorial Representations

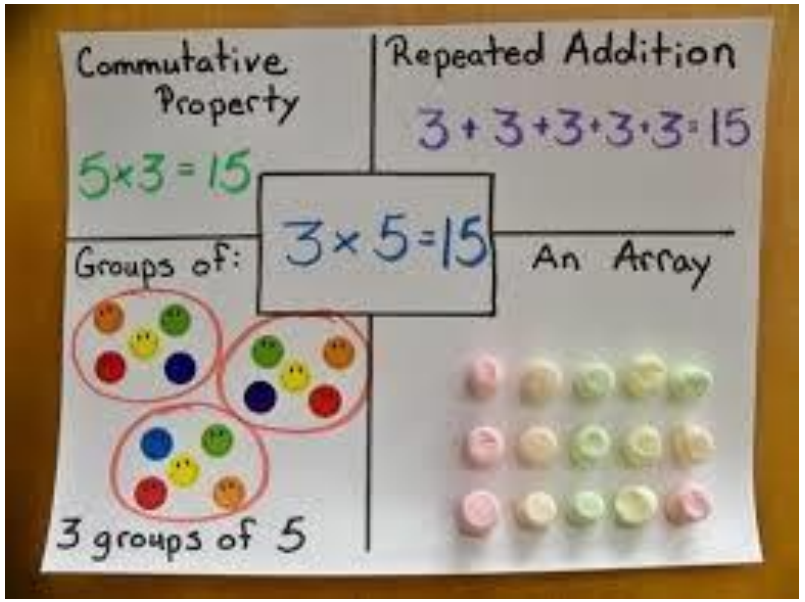












Abstract

$4 + 7 + 6 = 10 + 7$

10

$= 17$

$10 = 6 + 4$

$10 - 6 = 4$

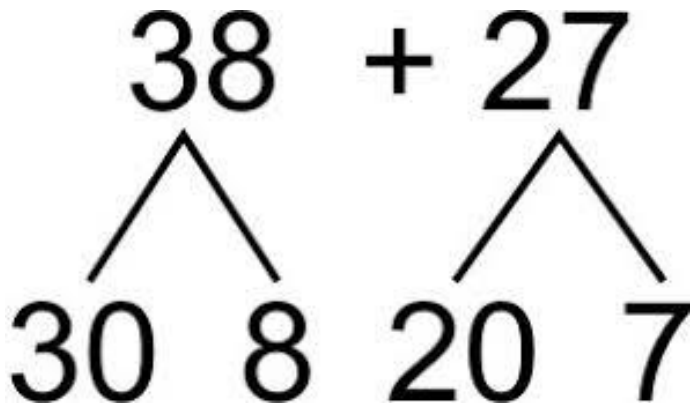
$10 - 4 = 6$

$10 = 4 + 6$

5 + 12 = 17

Place the larger number in your head and count on the smaller number to find your answer.

Divide 28 into 7 groups. How many are in each group?



FAQ

“If they’re all doing the same work; is my child being pushed enough?”

The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. Children will tackle the same initial exercises. Pupils who grasp concepts rapidly are challenged through rich and sophisticated problems before moving through new content.

FAQ

“What about the SEND (Special Educational needs and Disabilities) children?”

Those pupils who are not sufficiently fluent with earlier material are supported to consolidate their understanding, including through additional practice, before moving on.

FAQ

“If my child can get the answer to this (division calculation), why do they need to use a different method / this new method / spend so long on it?”

Following a set procedure may provide a correct answer but does not necessarily show understanding. Deep understanding - the ability to solve a problem in number of ways and apply - is the aim.

Support at home

- **Encourage a Growth Mindset**:

  Celebrate effort, not just results.

- **Ask "How?" not just "What?“**

  Have your child explain their thinking.

- **Practice Everyday Maths**

  Use real-life situations like cooking or shopping to reinforce concepts.

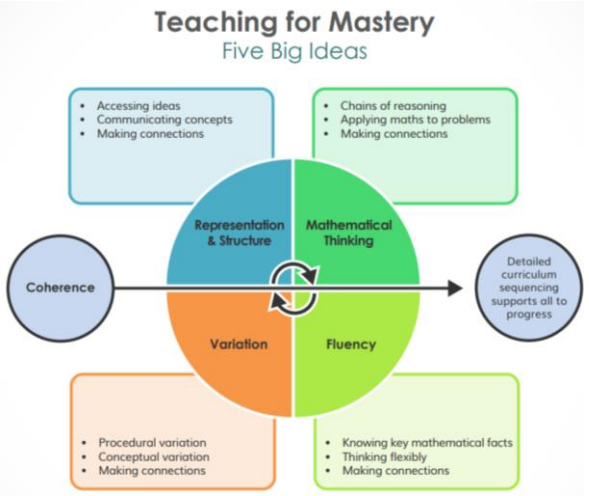
Further Information

- PFP School Calculation Policy - https://www.priorsfieldprimary.com/Curriculum/Maths/
- Details of National Curriculum coverage - https://sites.google.com/site/primarycurriculum2014/
- Maths at home ideas - https://nrich.maths.org/parents/primary
- Appendices 1-5 for more detail on Five Big Ideas in Teaching for Mastery

Coherence

Appendix 1

Lessons are broken down into small connected steps.



Overview

Small Steps

- Part-whole model
- Addition symbol
- Fact families – addition facts
- Find number bonds for numbers within 10
- Systematic methods for number bonds within 10
- Number bonds to 10
- Compare number bonds
- Addition – adding together
- Addition – adding more
- Finding a part
- Subtraction – taking away, how many left? Crossing out
- Subtraction – taking away, how many left? Introducing the subtraction symbol
- Subtraction – finding a part, breaking apart
- Fact families – the 8 facts
- Subtraction – counting back

NC Objectives

Represent and use number bonds and related subtraction facts within 10

Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs.

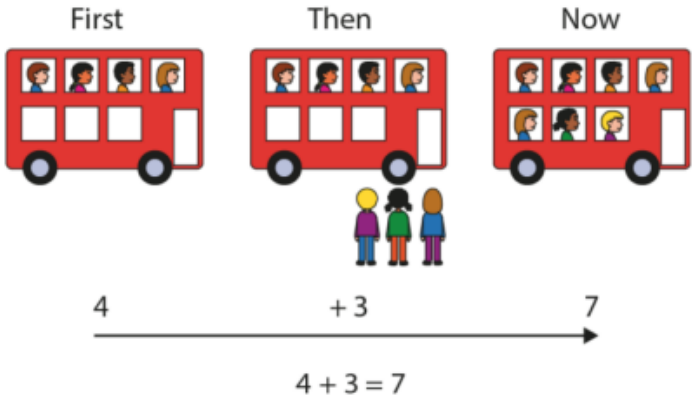
Add and subtract one digit numbers to 10, including zero.

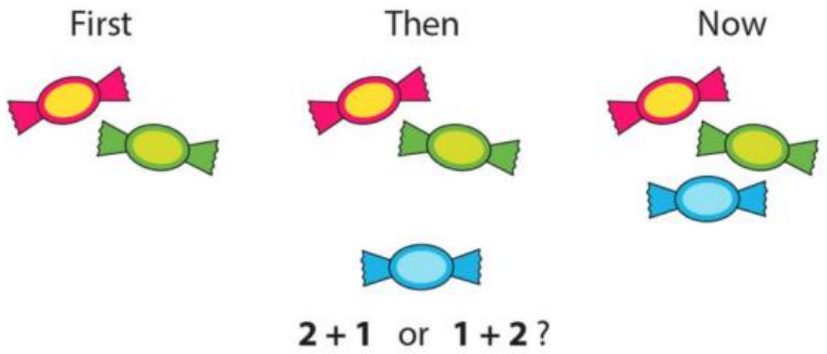
Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations and missing number problems.

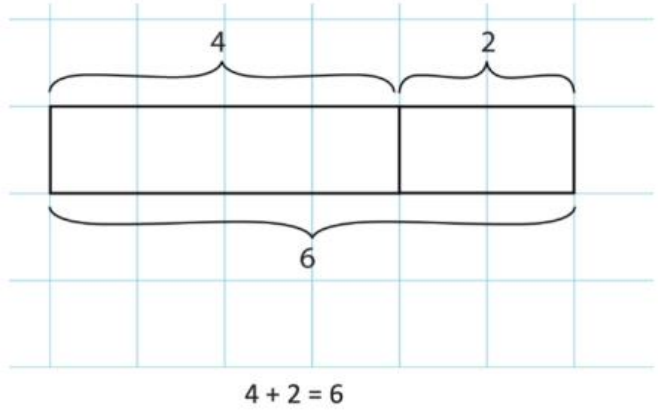
Appendix 2

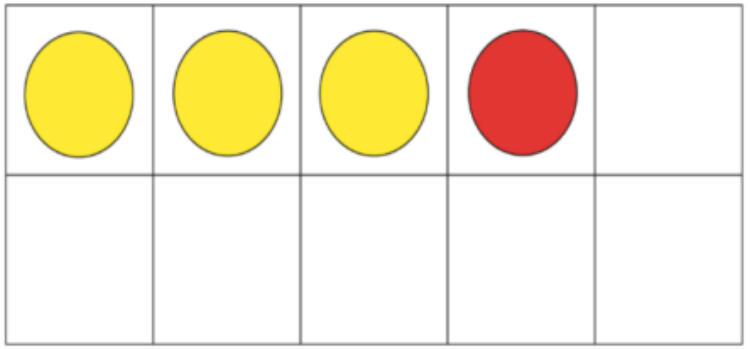
Representation and Structure

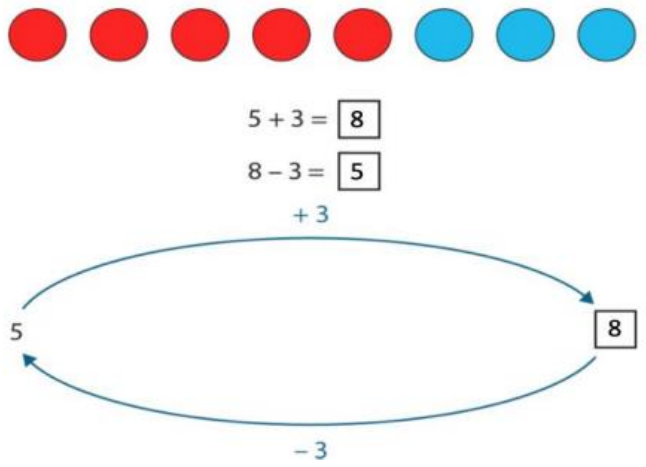
Representations used in lessons expose the mathematical structure being taught.







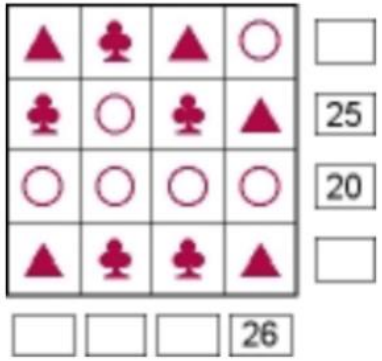




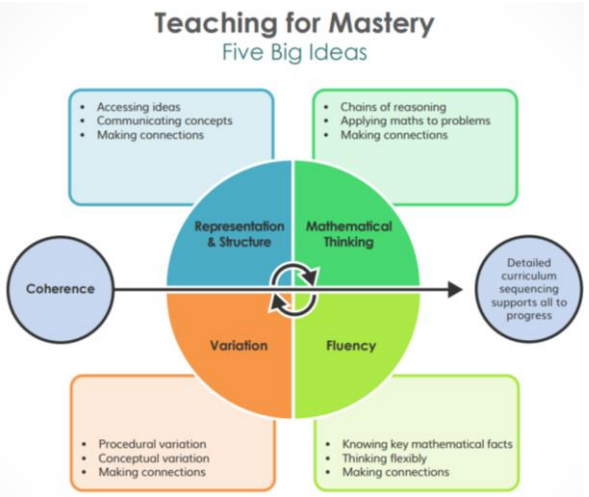
Mathematical Thinking

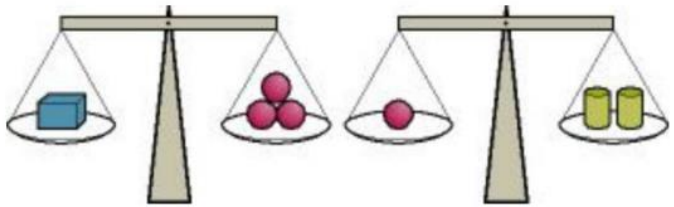
Appendix 3

To ensure ideas are to be understood deeply, children need to reason and discuss their ideas with others.



Each shape stands for a number. The numbers shown are the totals of the line of four numbers in the row or column. Find the remaining totals.



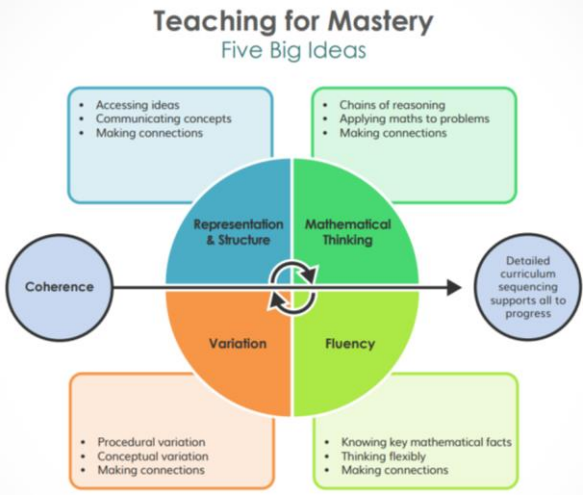


From the information shown on the scales, can you work out which object weighs the least?

Fluency

Fluency is the quick and efficient recall of facts and procedures, along with the flexibility to apply them across different contexts and representations of mathematics.

Fluency gives pupils the ability to explore deeper into maths; to develop number sense and choose the most appropriate method for the task at hand.

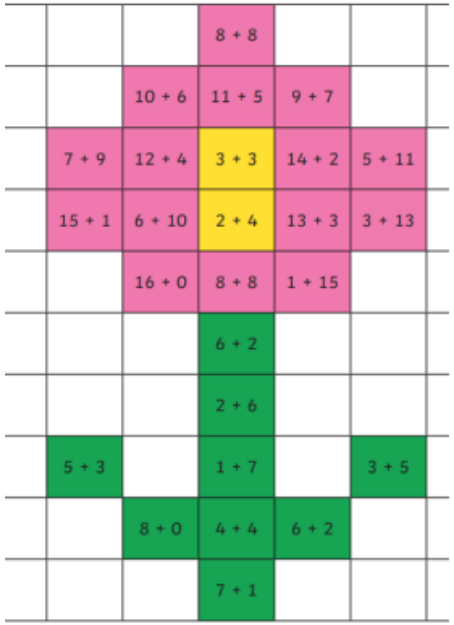


Appendix 4

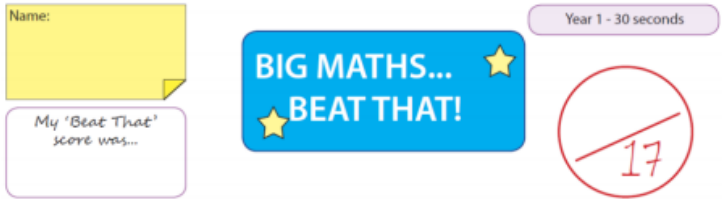
Times Tables Challenge:

Name: _____ Date: _____

x	5	9	2	11	8	1	12	3	4	6	10	7
8												
7												
11												
9												
12												
6												
2												
1												
4												
10												
3												
5												



		8 + 8		
	10 + 6	11 + 5	9 + 7	
7 + 9	12 + 4	3 + 3	14 + 2	5 + 11
15 + 1	6 + 10	2 + 4	13 + 3	3 + 13
	16 + 0	8 + 8	1 + 15	
		6 + 2		
		2 + 6		
5 + 3		1 + 7		3 + 5
	8 + 0	4 + 4	6 + 2	
		7 + 1		



Name:

My 'Beat That' score was...

BIG MATHS... BEAT THAT!

Year 1 - 30 seconds

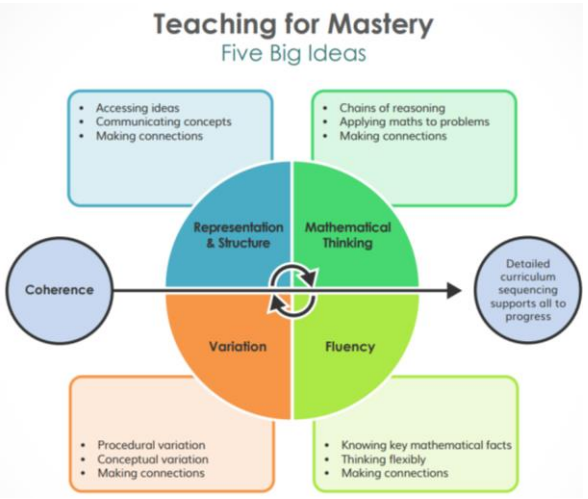
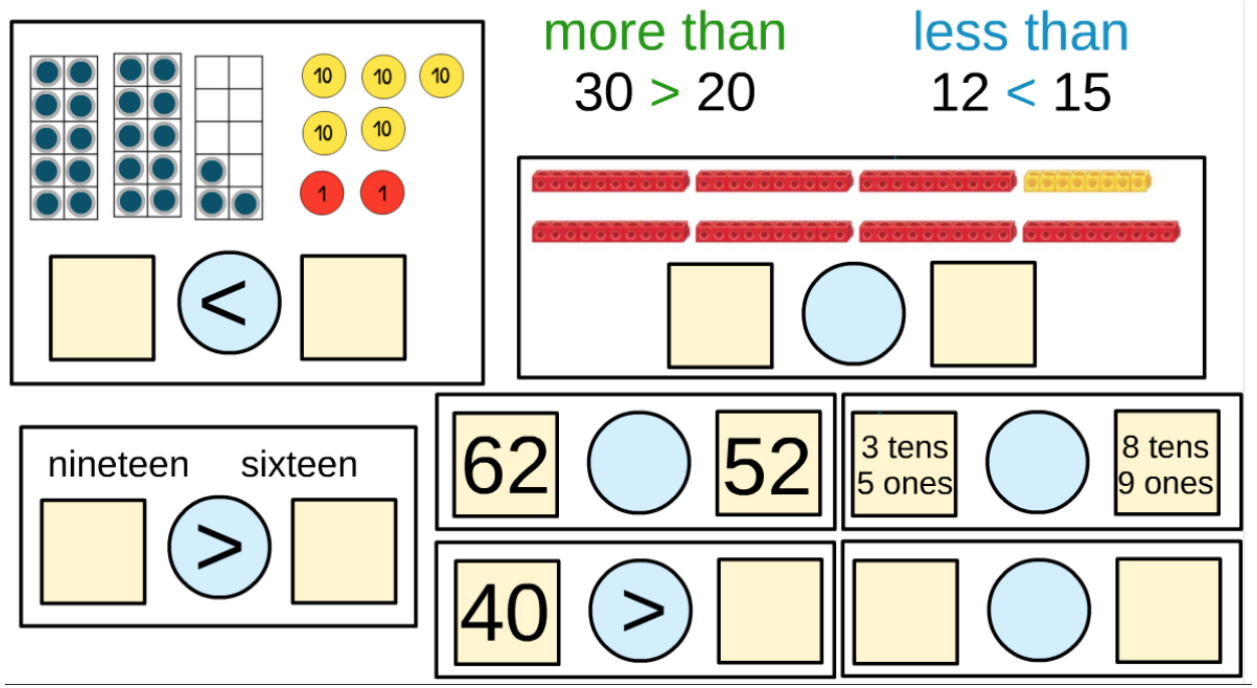
17

9 + 9 =	8 + 8 =	2 + 8 =
3 + 7 =	6 + 2 =	6 + 6 =
5 + 2 =	7 + 7 =	7 + 2 =
6 + 3 =	4 + 3 =	1 + 9 =
9 + 2 =	5 + 5 =	4 + 2 =
4 + 6 =		5 + 3 =

Y1
1

Variation

Appendix 5

Variation refers to how the teacher presents a concept in different ways to highlight key concepts and foster deep understanding.

It also involves the sequencing of lessons, activities, and follow-up practice, focusing on what stays the same and what changes. This helps connect mathematical ideas and highlight relationships and structure.