

Maths Mastery

The background features a dark teal gradient. On the left, several 3D cubes of varying sizes are arranged in a staircase-like pattern, with thin white lines connecting them. A large, bright teal cube is at the bottom left. On the right, a network of white dots connected by thin lines forms a complex geometric pattern. A small blue horizontal bar is located above the text 'EYFS AND KEY STAGE 1'.

EYFS AND KEY STAGE 1

What does it mean to master something?

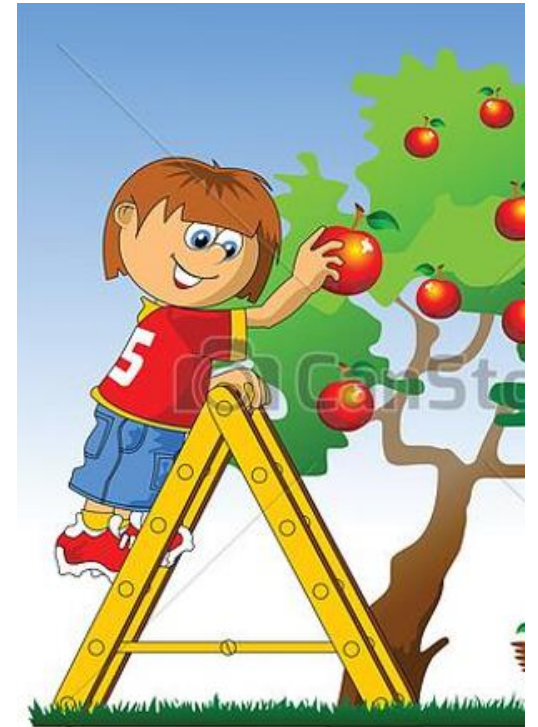
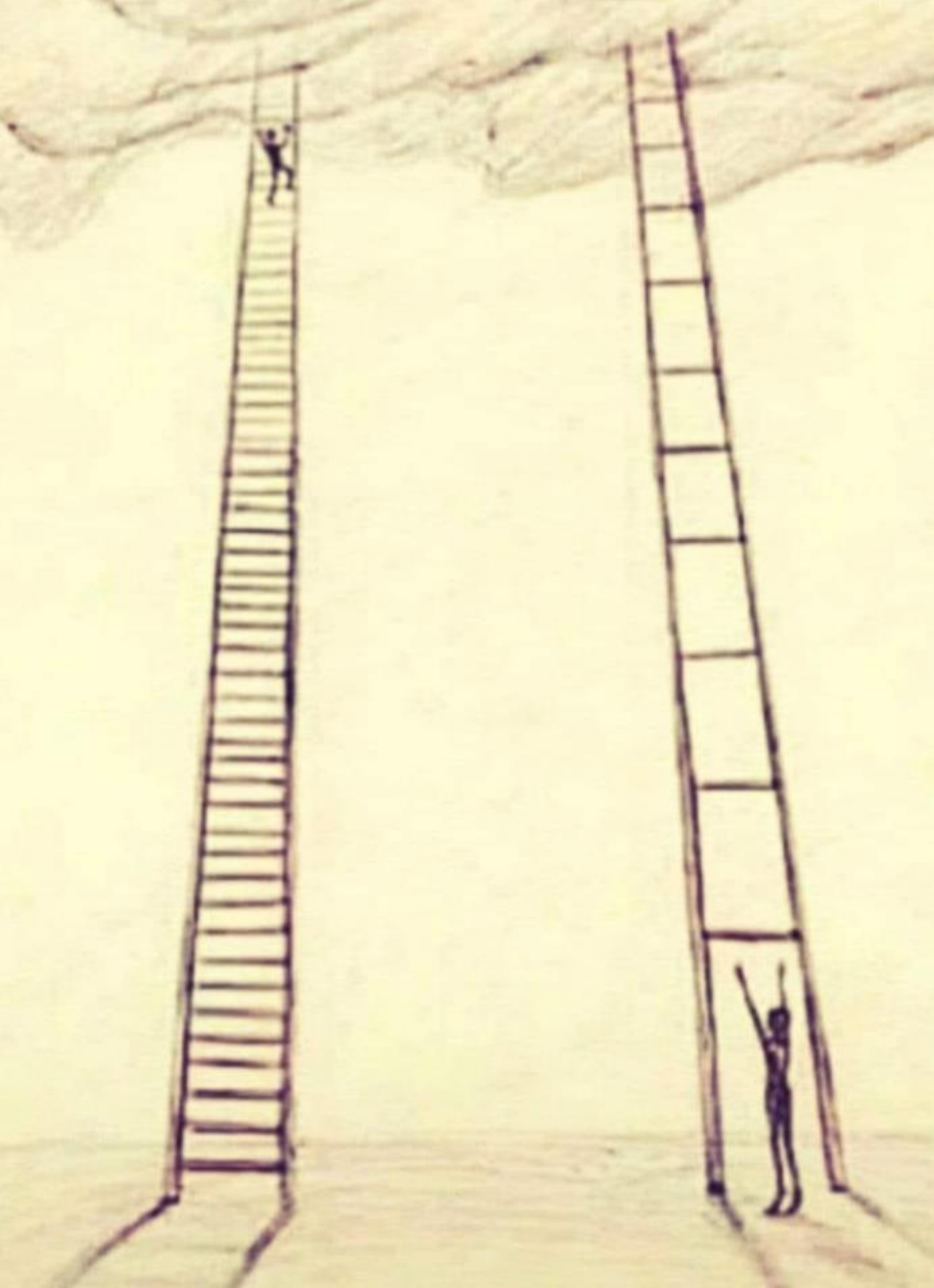
- I know how to do it
- It becomes automatic and I don't need to think about it– for example driving a car
- I'm really good at doing it – painting a room, or a picture
- I can show someone else how to do it.

What is maths mastery?

Maths Mastery is an approach to teaching mathematics that helps children develop a **deep, long-term, and secure understanding** of mathematical concepts. It encourages children to:

- Think critically and reason mathematically
- Understand concepts before moving on
- Use different methods to solve problems
- Apply maths to real-life situations

The importance of small steps



Small focused steps

A teaching for mastery lesson should start at the point where all children can access and then move the class forward together

Avoiding overload

Teaching for mastery breaks down the mathematics into “thinkable chunks” and joins them together

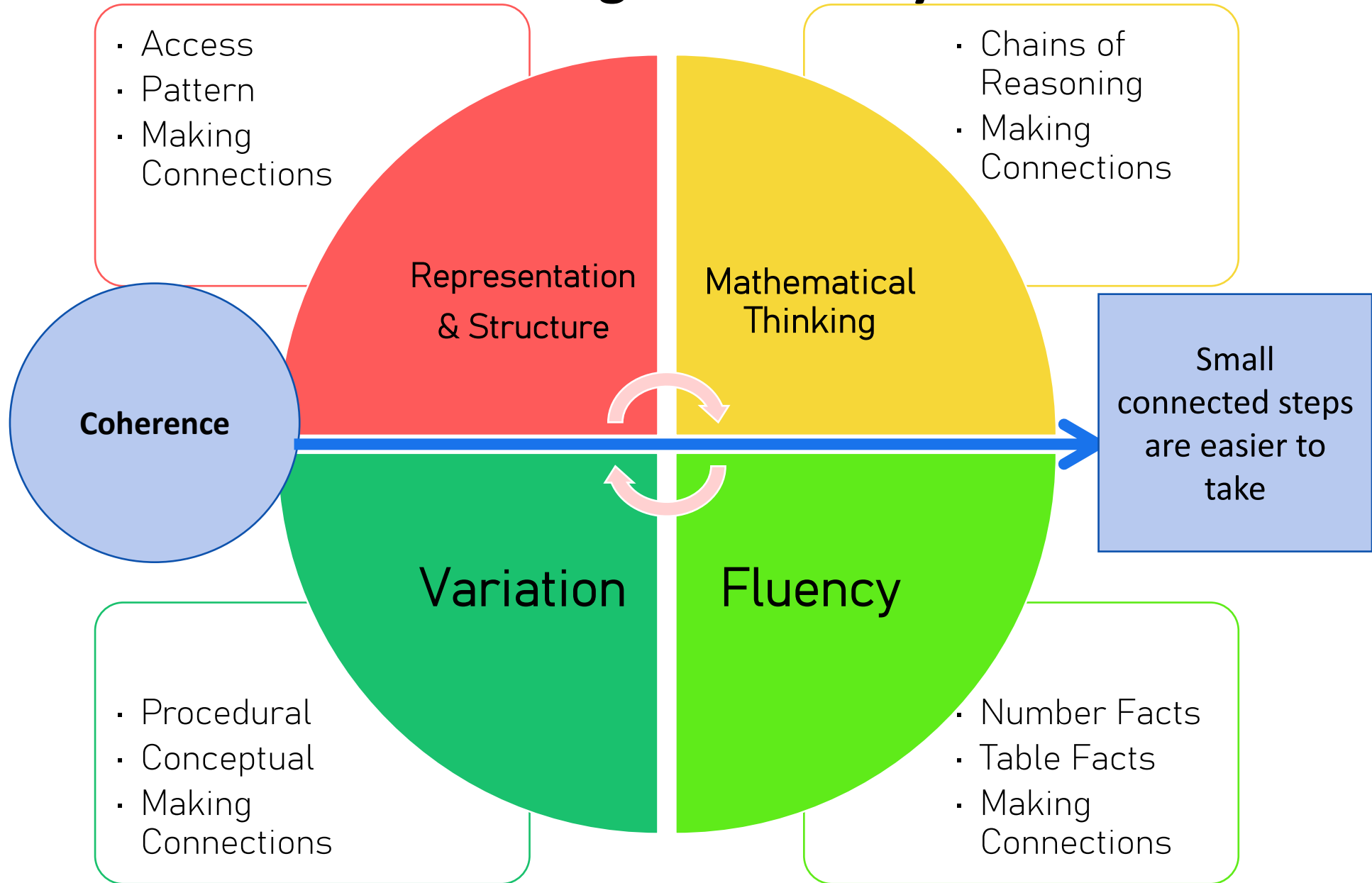
Memorisation

The careful ordering, focus and repetition provided through the lesson supports embedding in the long term memory.

Staying focused

We remember what we think about. A teaching for mastery lesson is designed to provoke thinking and make meaning. Making meaning will help us to remember.

Teaching for Mastery



Fluency

- Quick and efficient recall of facts and procedures and the flexibility to move between different contexts and representations of mathematics.

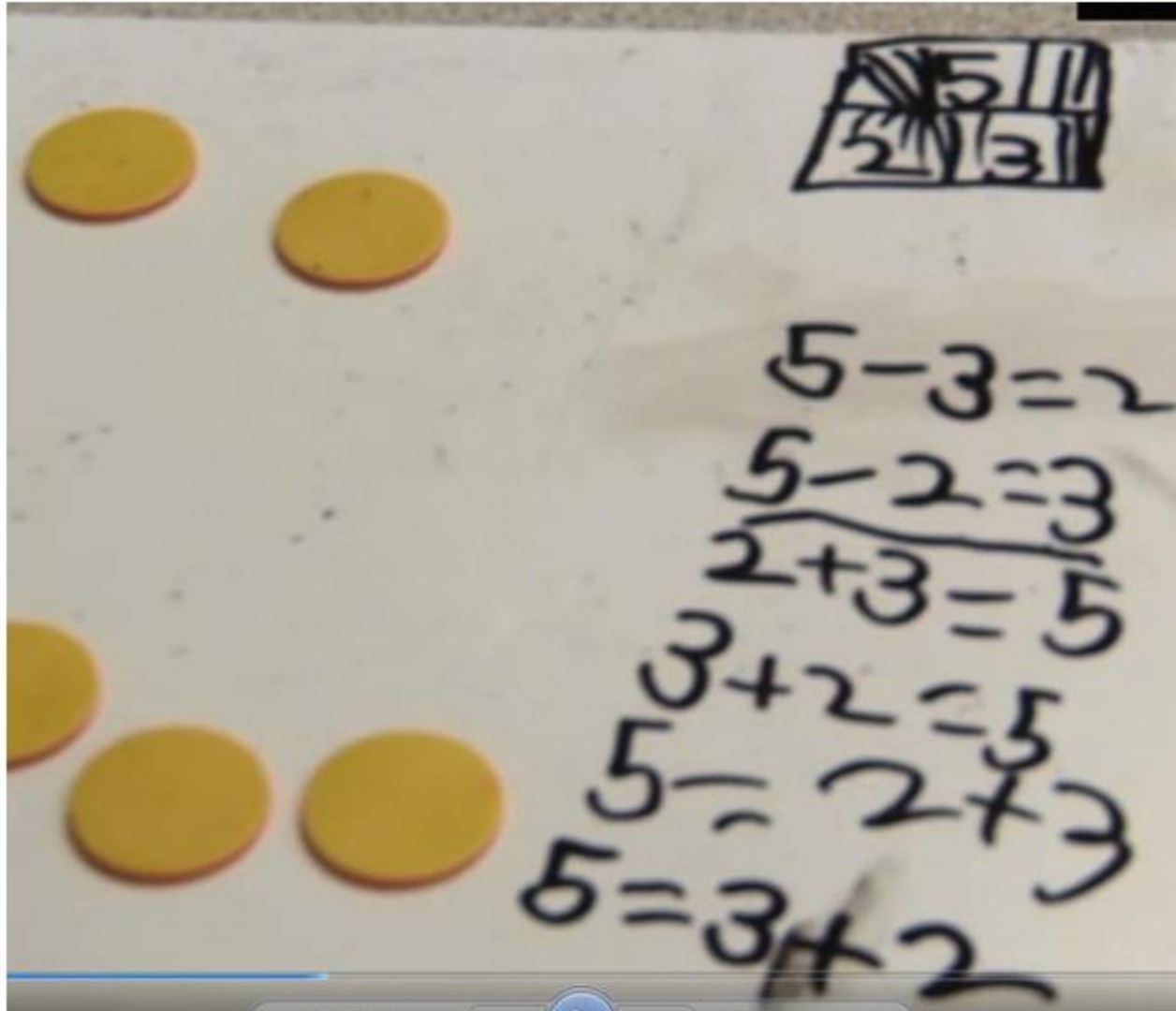
Variation

- The purpose of variation is to draw closer attention to a key feature of a mathematical concept or structure through varying some elements while keeping others constant. Through variation the teacher focuses thinking and discussion on the key feature in question.

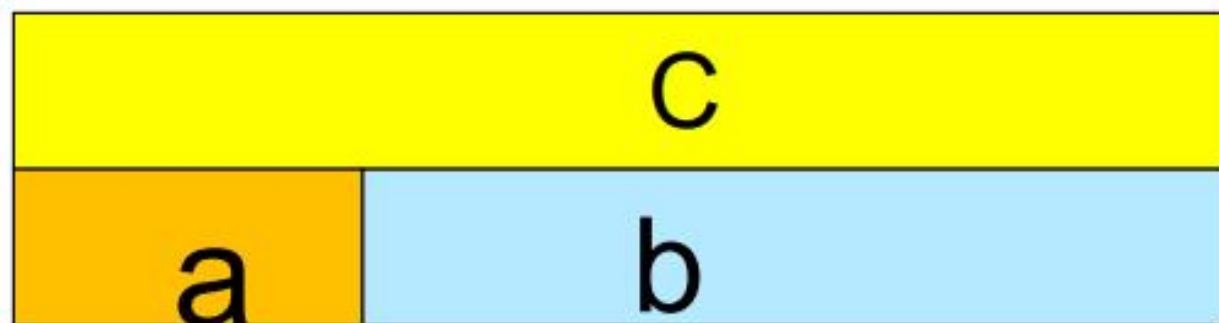
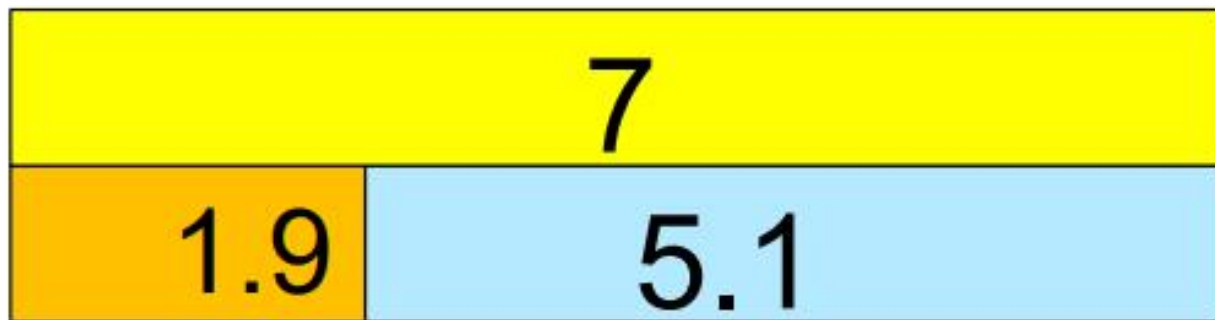
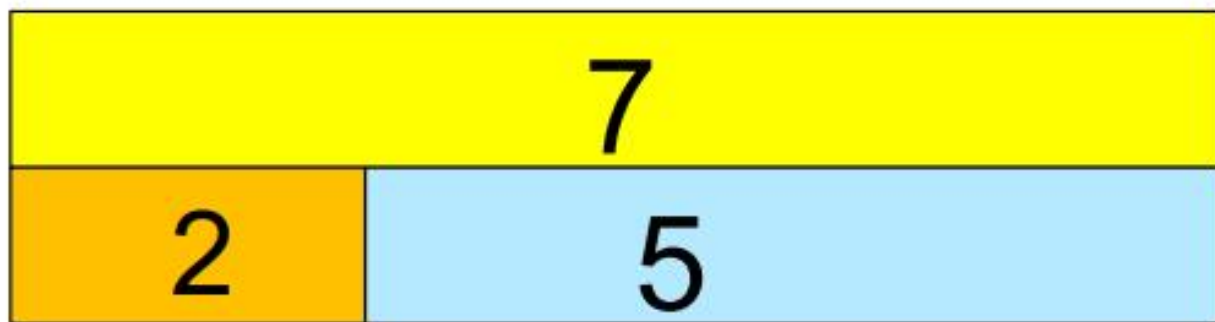
Representation and Structure

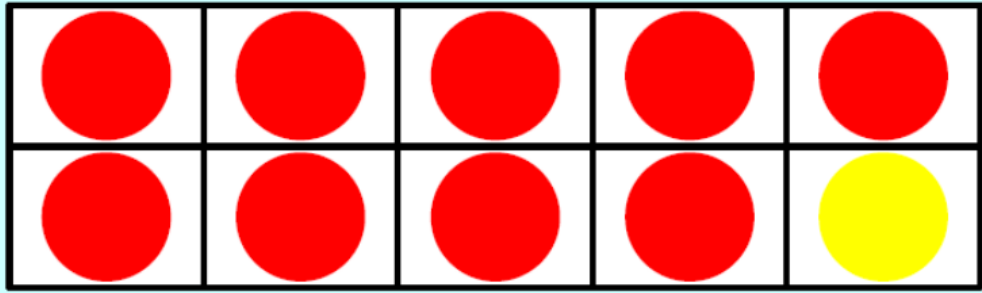
- Teachers carefully select different representations of maths e.g. part – part – whole model / tens frame etc.
- The intention is to support pupils in ‘seeing’ the mathematics, rather than using the representation as a tool to ‘do’ the mathematics.
- These representations become mental images that students can use to think about and discuss mathematics, supporting them to achieve a deep understanding of mathematical structures and connections.

Part Part Whole Structure

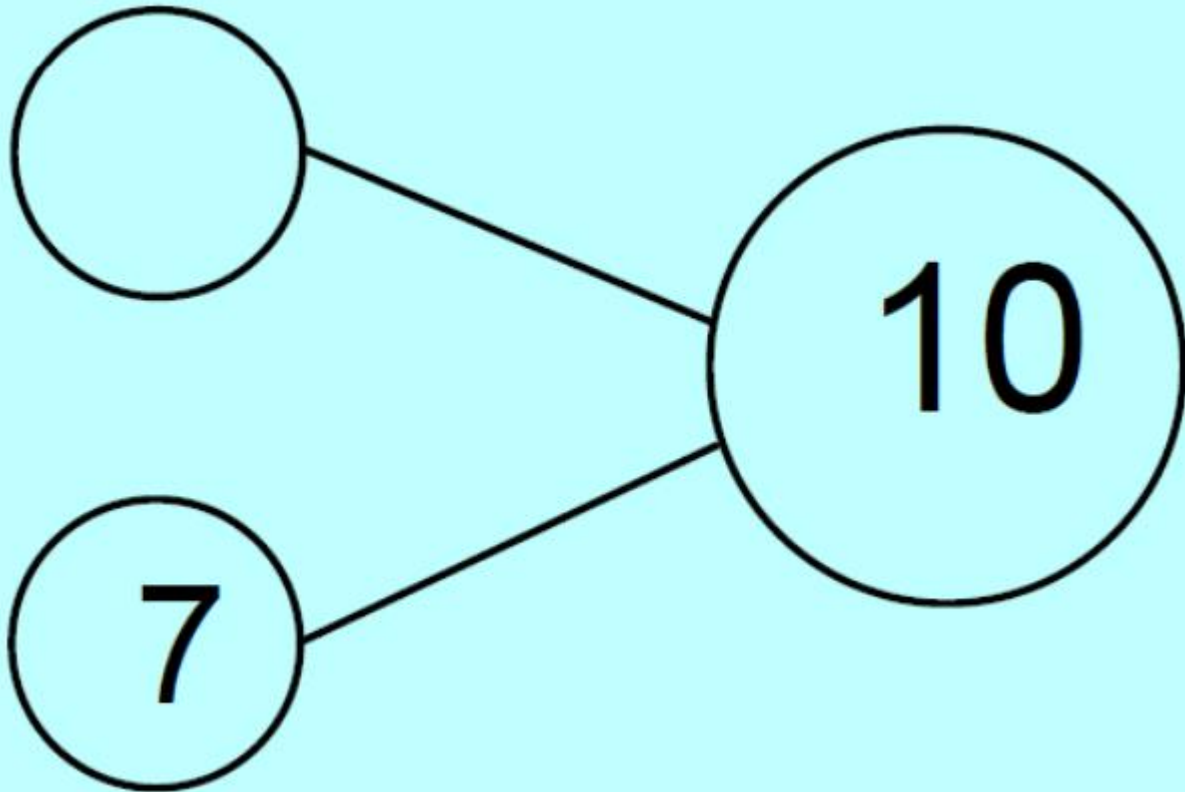
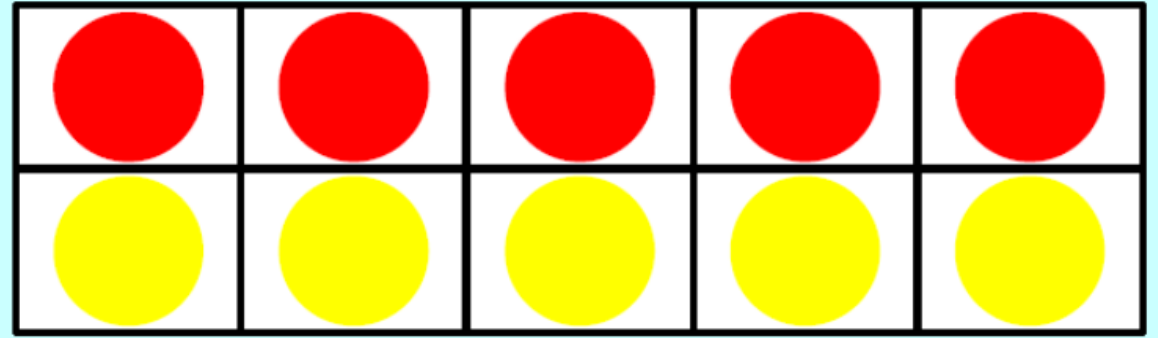


5	
3	2



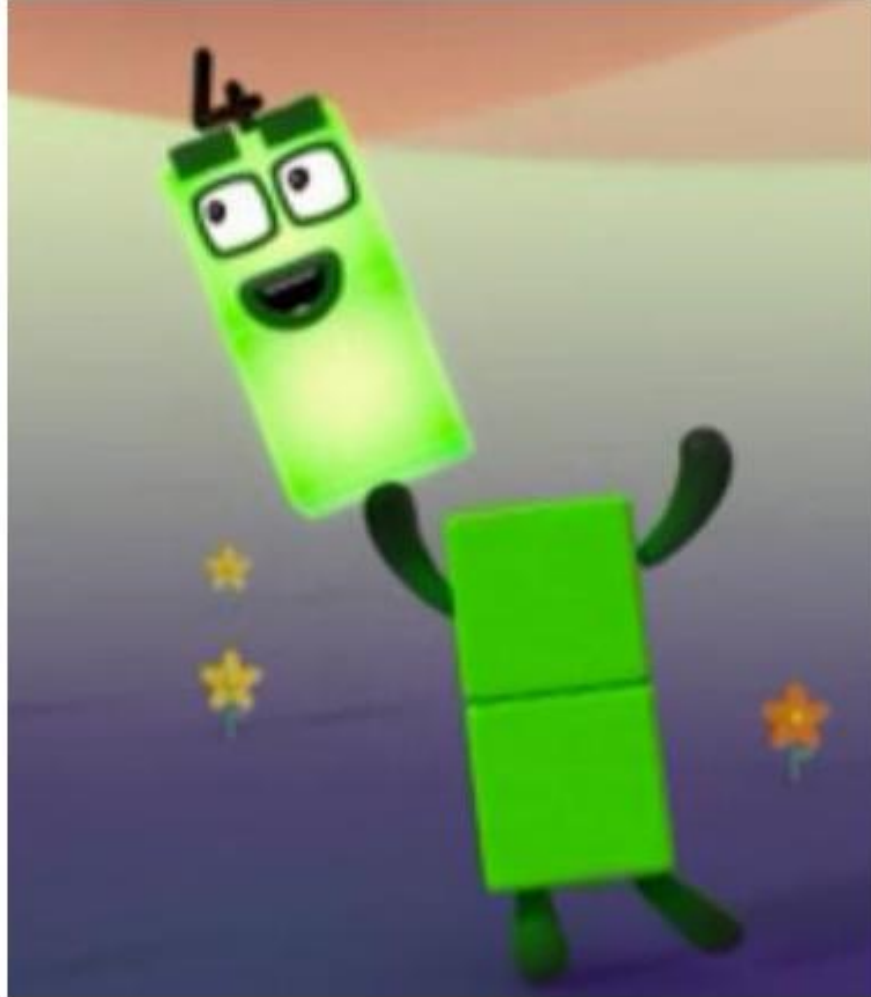


Say: _____ plus _____ equals ten



$$8 + 2$$

Numberblocks



Mathematical Thinking

- Mathematical Thinking is central to how pupils learn mathematics and includes looking for patterns and relationships, making connections, conjecturing, reasoning, and generalising.
- Pupils should actively engage in mathematical thinking in all lessons, discussing and communicating their ideas using precise mathematical language.

Coherence

- This weaves through the other four big ideas.
- Teaching is designed to enable a coherent learning progression through the curriculum, providing access for all pupils to develop a deep and connected understanding of mathematics that they can apply and communicate in a range of contexts.

EYFS/KS1 - MASTERING NUMBER

- Delivered before the daily maths lesson.
- Mastering Number 8.50 – 9.05/9.10
- Maths lesson – 9.10 – 10.00
- For schools in the Mastering Number Programme, children in Reception, Year 1 and Year 2 will have a daily teacher-led session of 10 to 15 minutes, designed to ensure that pupils develop fluency with, and understanding of, number that is crucial to future success in maths and academic progress more generally.



EYFS (Ages 3–5): Laying the Foundations



Key Areas of Focus:

- **Number** – Understanding numbers to 10 and beyond.
- **Numerical Patterns** – Recognising patterns, counting in steps, comparing quantities.



Learning Goals by the End of Reception:


- Count reliably to 20 and place numbers in order.
- Say one more or one less than a number.
- Use objects to add and subtract single-digit numbers.
- Solve everyday problems involving sharing and grouping.
- Understand shape, space, and measures through play.

How You Can Help at Home:

- **Count everything:** stairs, fruit, cars — out loud and in fun ways.
- **Play games:** board games, dice games, and number puzzles.
- **Use everyday language:** “Which is heavier?” “How many do we have?”
- **Talk about shapes and patterns** in your home and outdoors.
- **Sing number songs:** e.g., “5 Little Ducks” or “10 Green Bottles.”
- Let children play with **blocks, water, measuring cups, and money.**



Key Stage 1 (Ages 5–7): Building on the Basics

-  Key Concepts:
- **Place Value** – Understanding tens and ones.
- **Addition & Subtraction** – Using number bonds, mental strategies, and written methods.
- **Multiplication & Division** – Counting in 2s, 5s, and 10s; arrays and grouping.
- **Fractions** – Finding halves and quarters of shapes and quantities.
- **Measurement** – Time, money, length, weight, and capacity.
- **Geometry** – Properties of 2D and 3D shapes, position and direction.
- **Problem Solving & Reasoning** – Explaining how and why answers work.



What Maths Mastery Looks Like in KS1:

- Using concrete objects (counters, cubes) to understand concepts.
- Drawing pictures (pictorial) before using numbers and symbols (abstract).
- Explaining *why* something works, not just *how*.
- Applying maths in real-life contexts.
- Revisiting topics to deepen understanding.

How You Can Help at Home:

- Use real objects: Lego, coins, snacks — to group, count, and share.
- Play “shop”: Use real money and prices to practise addition and subtraction.
- Cook together: Measure ingredients, discuss quantities and time.
- Ask open-ended questions:
 - “How did you get that answer?”
 - “Can you show me another way?”
 - “What do you notice?”
- Spot maths in the environment:
 - Numbers on doors, buses, signs.
 - Patterns in nature, symmetry in leaves.
- Practise number bonds: e.g., what makes 10, 20, etc.
- Count in steps: e.g., 2s, 5s, 10s while walking or driving.



The CPA Approach: Concrete – Pictorial – Abstract

- This is central to maths mastery...

Stage	Description	Example
Concrete	Using real objects (counters, blocks)	3 apples + 2 apples
Pictorial	Drawing pictures or visual representations	Drawing 3 apples + 2 apples
Abstract	Using numbers and symbols	$3 + 2 = 5$

Encouraging a Growth Mindset

- Help your child see that **mistakes are part of learning**. Phrases like:
- "Let's try a different way."
- "That was tricky, but you didn't give up!"
- "What did you learn from that?"
- ...all build resilience and confidence in maths.



Useful Resources



Apps and Websites:

- Numbots – Number sense for KS1
- Topmarks (www.topmarks.co.uk) – Games for EYFS and KS1
- BBC Bitesize – KS1 Maths videos and games
- White Rose Maths – Free parent workbooks and videos
- Numberblocks (YouTube or BBC iPlayer) – Great for EYFS

Useful Resources

Books:

- “How Many Legs?” by Kes Gray
- “One is a Snail, Ten is a Crab” by April Pulley Sayre
- “Sir Cumference” series for fun maths adventures (for KS1)



Final Tips for Parents

- ✓ Make maths part of everyday life
- ✓ Praise effort over accuracy
- ✓ Keep it playful, especially in EYFS
- ✓ Be positive – your attitude matters
- ✓ Don't rush ahead – depth is more important than speed

Final Thought

- “Mathematics is not about numbers, equations, computations, or algorithms: it is about understanding.”
– *William Paul Thurston*
- With your encouragement and involvement, your child can build the confidence and curiosity needed to thrive in maths and beyond.