St Oswald's C of E Primary School

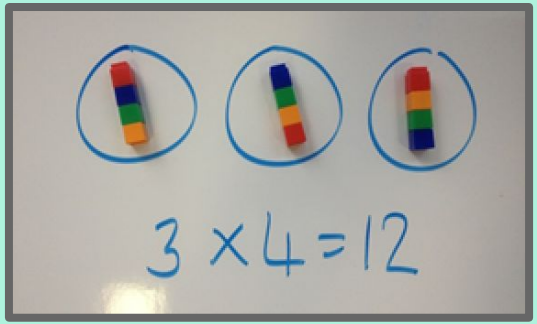
The CPA and 'Mastery' Approach

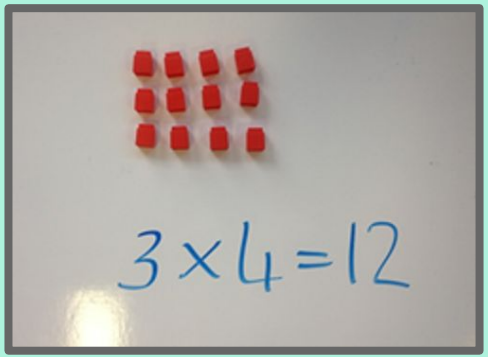

WELCOME

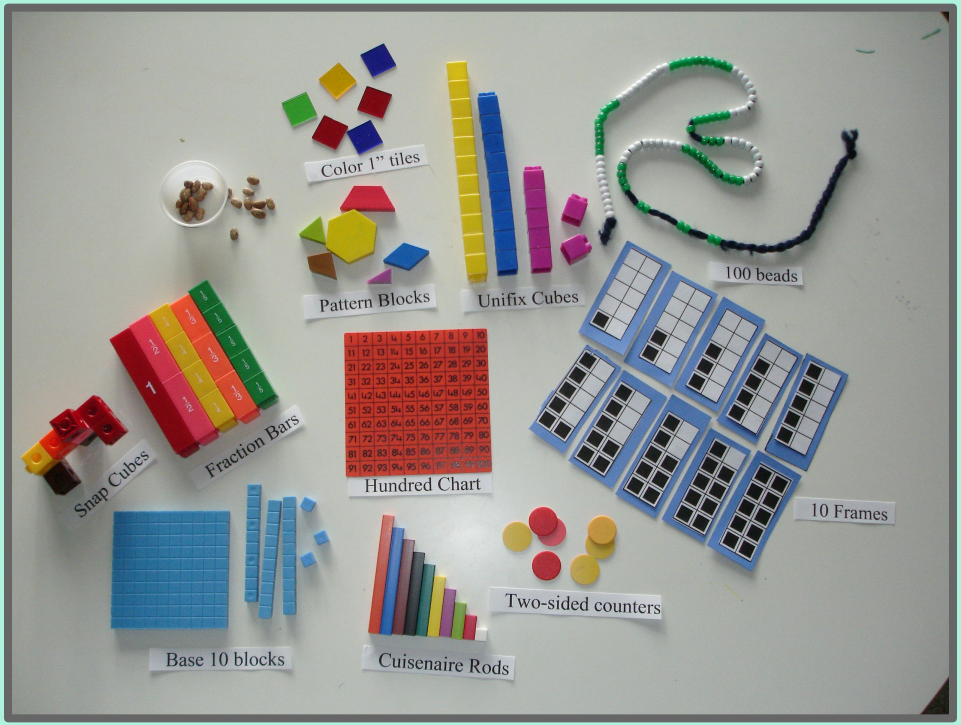
Our aim is to enable children to become able and confident mathematicians who are well equipped to use maths in life and the real world.

Concrete, Pictoral and Abstract (The CPA approach)

Concrete

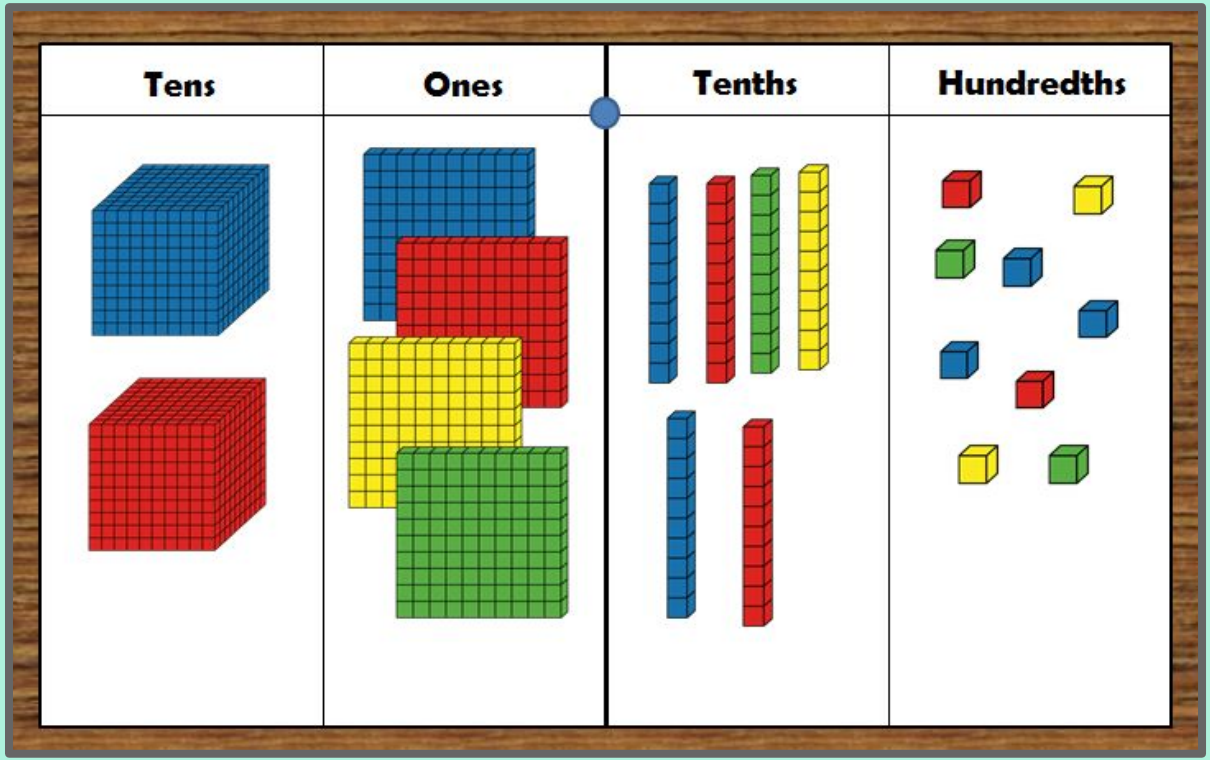

3 x 4 = 12


3 x 4 = 12

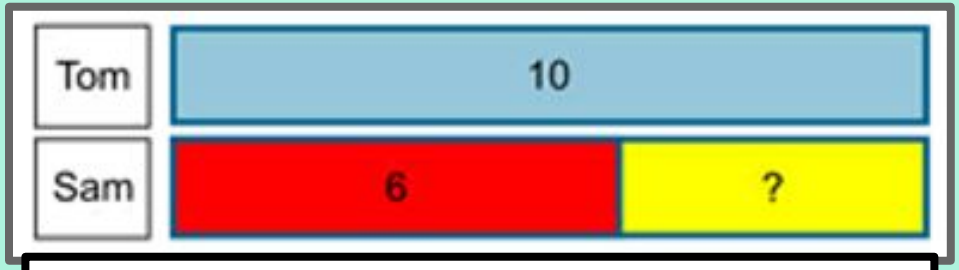

Color 1" tiles
Pattern Blocks
Unifix Cubes
100 beads
Snap Cubes
Fraction Bars
Hundred Chart
10 Frames
Base 10 blocks
Cuisenaire Rods
Two-sided counters

24.69 - 13.37

Pictoral

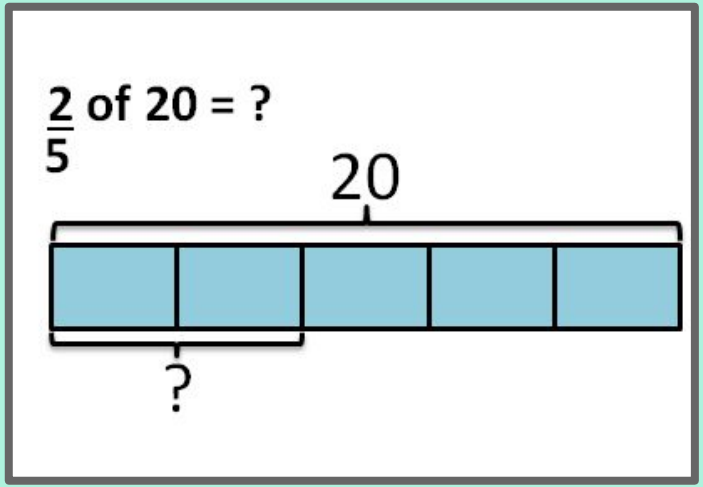


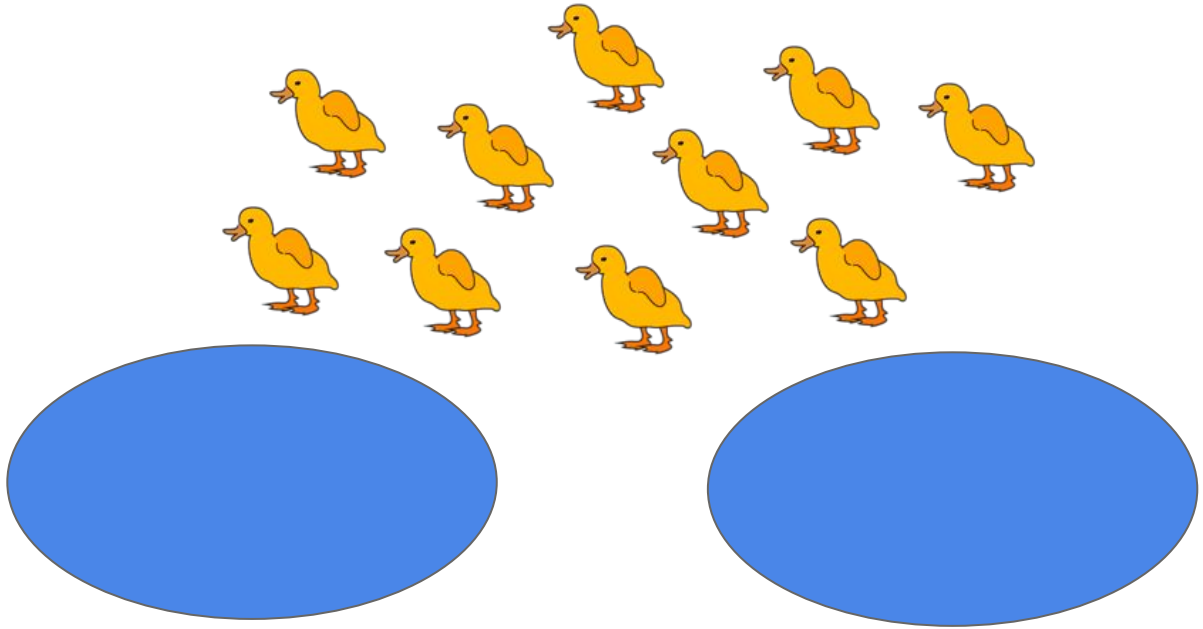
Pictoral



Tom has 10 pencils and Sam has six pencils. How many more pencils does Tom have?

Bar Models



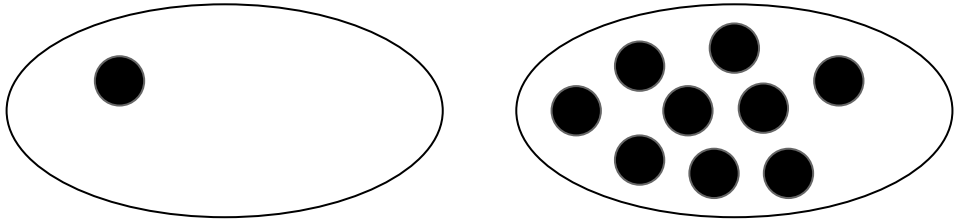


Mother duck is in the park with her ten ducklings. There are two ponds. How many ducklings could be playing in each pond?

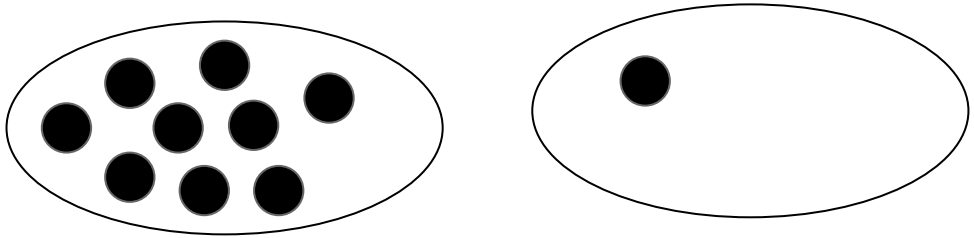
Draw pictures to show <u>all</u> of the possibilities.

10 = 1 + 9

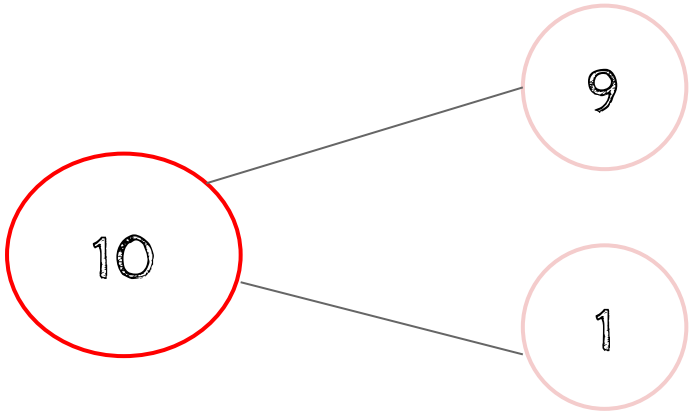
10 = 9 + 1

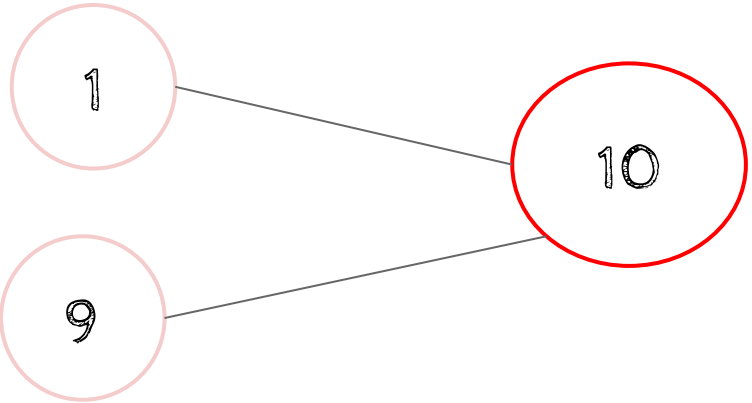


1 + 9 = 10



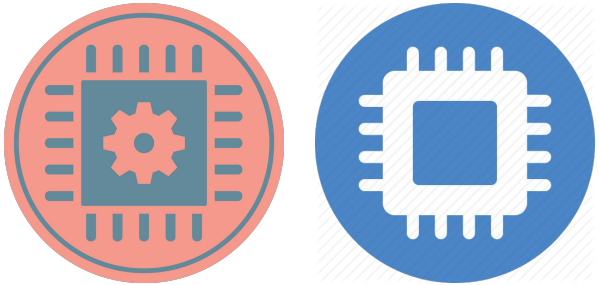
9 + 1 = 10



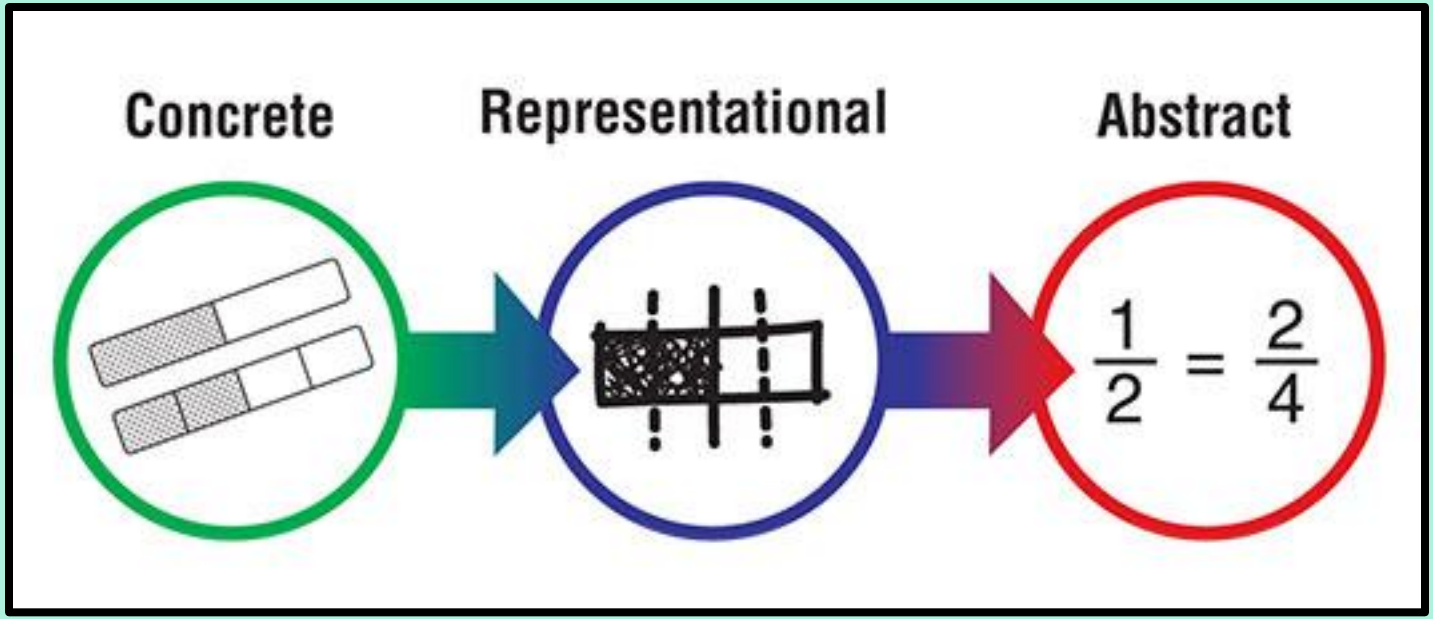


Peter is ¼ metre away from the pink chip and ¾ metres away from the blue chip.

Which chip is closer to Peter?



Draw a picture to work it out.



Abstract

The 'Mastery' Approach

What is it?

- ★ Advocates the use of ‘whole-class teaching’ to engage **all** children in **all** aspects of the maths curriculum.
- ★ Promotes deeper understanding of a concept above over-acceleration of new concepts.
- ★ Each little step of learning is carefully planned to lead onto the next little step. This enables children to make connections easily, and therefore builds on learning more effectively.
- ★ Utilises the CPA approach.
- ★ Encourages problem solving and reasoning around learning of mathematical concepts alongside fluency of basic mathematical facts.

5 aspects...

Coherence

- Small Clear Steps
- Focusing for longer on learning

For Example:

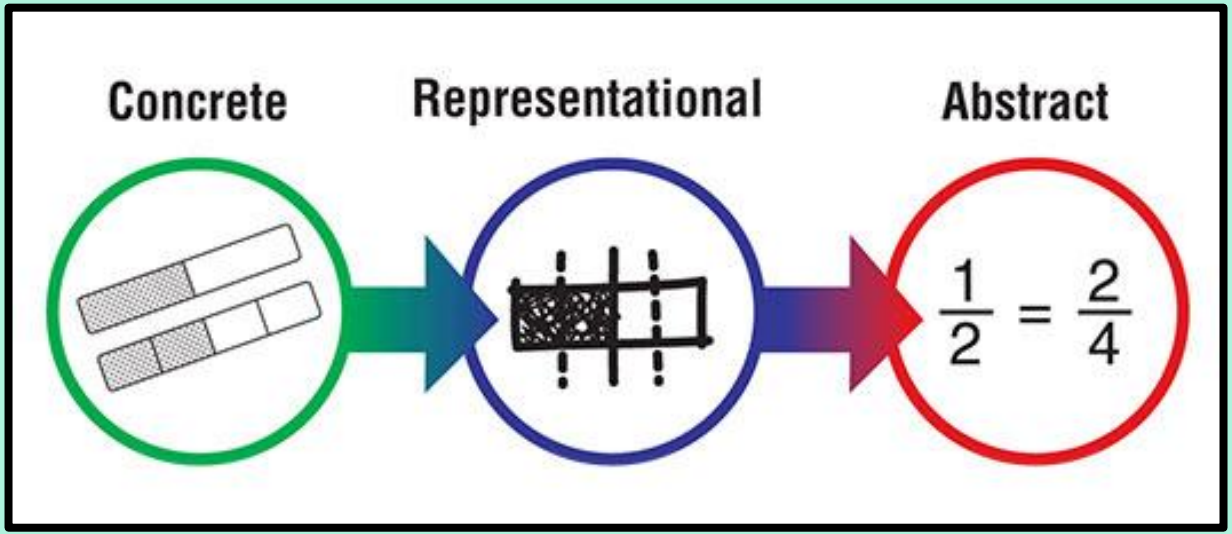
Teaching the written algorithm for

$$\begin{array}{r} 47 \\ -38 \\ \hline \end{array}$$

What do I need to know already?

5 aspects...

Representation



5 aspects...

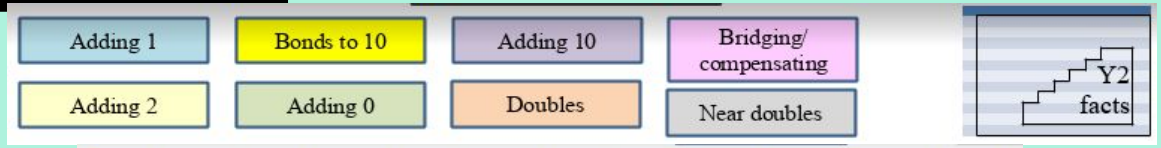
Variation

- Seeing things in different ways.
- Small Varying Steps

Let's have a go!
Draw a triangle...

5 aspects...

Fluency



+	0	1	2	3	4	5	6	7	8	9	10
0	0 + 0	0 + 1	0 + 2	0 + 3	0 + 4	0 + 5	0 + 6	0 + 7	0 + 8	0 + 9	0 + 10
1	1 + 0	1 + 1	1 + 2	1 + 3	1 + 4	1 + 5	1 + 6	1 + 7	1 + 8	1 + 9	1 + 10
2	2 + 0	2 + 1	2 + 2	2 + 3	2 + 4	2 + 5	2 + 6	2 + 7	2 + 8	2 + 9	2 + 10
3	3 + 0	3 + 1	3 + 2	3 + 3	3 + 4	3 + 5	3 + 6	3 + 7	3 + 8	3 + 9	3 + 10
4	4 + 0	4 + 1	4 + 2	4 + 3	4 + 4	4 + 5	4 + 6	4 + 7	4 + 8	4 + 9	4 + 10
5	5 + 0	5 + 1	5 + 2	5 + 3	5 + 4	5 + 5	5 + 6	5 + 7	5 + 8	5 + 9	5 + 10
6	6 + 0	6 + 1	6 + 2	6 + 3	6 + 4	6 + 5	6 + 6	6 + 7	6 + 8	6 + 9	6 + 10
7	7 + 0	7 + 1	7 + 2	7 + 3	7 + 4	7 + 5	7 + 6	7 + 7	7 + 8	7 + 9	7 + 10
8	8 + 0	8 + 1	8 + 2	8 + 3	8 + 4	8 + 5	8 + 6	8 + 7	8 + 8	8 + 9	8 + 10
9	9 + 0	9 + 1	9 + 2	9 + 3	9 + 4	9 + 5	9 + 6	9 + 7	9 + 8	9 + 9	9 + 10
10	10 + 0	10 + 1	10 + 2	10 + 3	10 + 4	10 + 5	10 + 6	10 + 7	10 + 8	10 + 9	10 + 10

5 aspects...

Mathematical thinking

- Understanding and explaining
- Seeing Patterns
- Making Connections between ideas.

KS1

- ★ The children have been split into their year groups across the three classes so they are accessing the aims/expectations of their years National Curriculum.
- ★ We have started the mastery approach in Year 1.
- ★ All children are accessing the learning because we are taking small coherent steps.
- ★ We concentrate on one key concept each lesson.
- ★ Our planning is flexible/adaptable and we create our own resources catered to the needs of the children and that lesson.
- ★ We spend much longer on aspects to consolidate the children's learning before we move on to the next aspect.
- ★ We aim to fill the 'gaps' in children's learning by building up their fluency to help them as they move up through school and eliminate misconceptions.
- ★ Challenge/depth through questioning, reasoning and explanations.