MATHS AT ST MARY'S

17th January, 2025

ST. MARY'S
RC. PRIMARY SCHOOL

St. Cuthbert's
RC. Primary School

Perception of Maths

- What is your experience of maths at school? Positive / Negative?
- If children hear 'I can't do maths' from parents, teachers, friends they begin to believe it isn't important
- People become less embarrassed about maths skills as it is acceptable to be 'rubbish at maths'
- We all need to be positive role models about maths so that our children see that is a subject where they can succeed.

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National Curriculum

Aims for all pupils to:

- become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately
- **reason** mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can **solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions

Has maths changed?

We are still teaching most of the same methods that you and I were taught at school but we now look at different representations of the maths to make sure children have a deeper understanding rather than just memorising a method without understanding what they are doing.

For example, we spend a lot of time now on place value at the start of the year to make sure children really understand what numbers represent. If they have a solid understanding of the basics they can access more difficult concepts more easily.

We use the mastery approach which focuses on depth rather than acceleration, ensuring that key concepts are fully grasped before moving on.

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Stages of Mastery

Fluency in Maths happens when children can answer questions accurately using recall of Mathematical facts.

Reasoning is when a child can explain what they have done and why, or prove that something is or isn't correct.

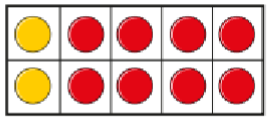
Problem solving is applying their knowledge and understanding to multi-step problems.

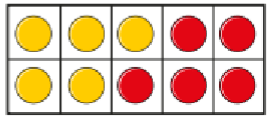
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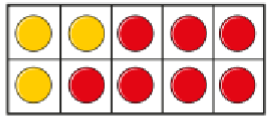
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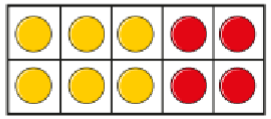
Fluency

1 Match the ten frames to the number sentences.









3 + 7 = 10

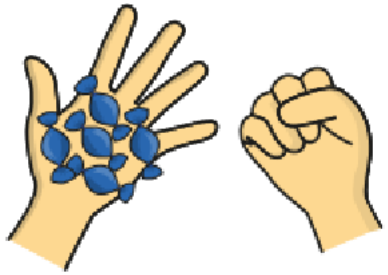
6 + 4 = 10

2 + 8 = 10

5 + 5 = 10

Reasoning

Ben has 10 sweets.



How many sweets are in Ben's closed hand?

How do you know?

Problem solving

5 Take 10 cubes.

Give some to a partner.

How many cubes could you each have?

Fluency

Use Kim's method to work out the additions.

3,356 + 2,437	3,356 + 2,473	3,356 + 2,743

- Complete the bar models.

3,535 | 2,634	3,264 | 1,655
5,807 | 2,360	1,185 | 405

Reasoning

Tiny completes this addition.

	Th	H	T	O
	4	0	8	6
+	1	5	3	2
	5	5	1	9
				1

What mistake has Tiny made?

Find the correct answer.

Problem solving

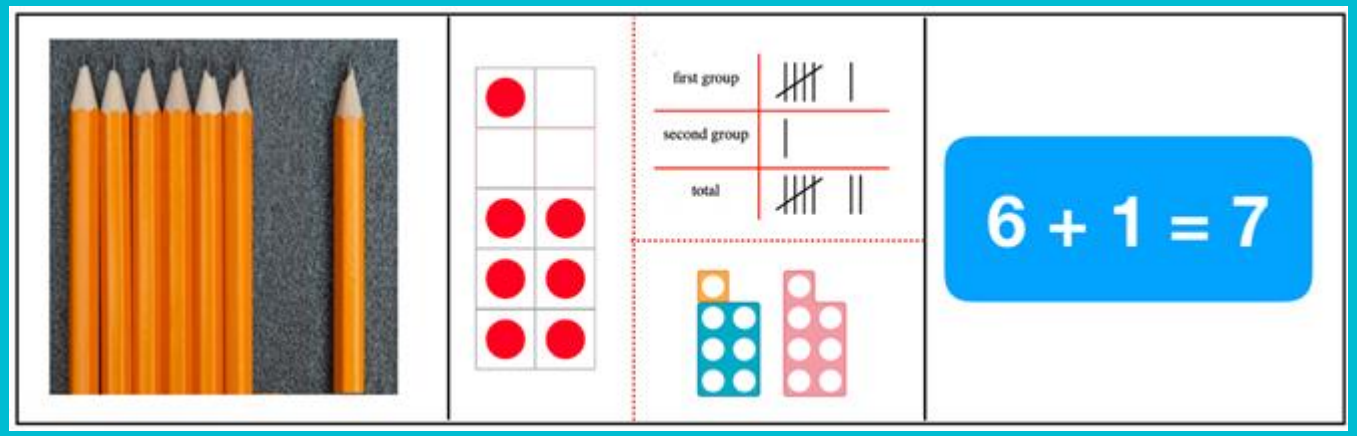
Dexter adds a 4-digit number to a 2-digit number.



	Th	H	T	O
+				
	9	0	9	0

What could Dexter's numbers be?

How do we teach maths?



Concrete representation

This is a 'hands on' component using real objects and it is the foundation for conceptual understanding

Pictorial representation

Using representations, such as a diagram or picture of the problem.

Abstract Experiences

The symbolic stage - representing problems by using mathematical notation, for example: 12 ÷ 2 = 6

The CPA Approach

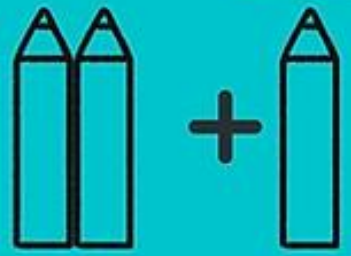


C for Concrete

Using physical objects to solve a problem

P for Pictoral

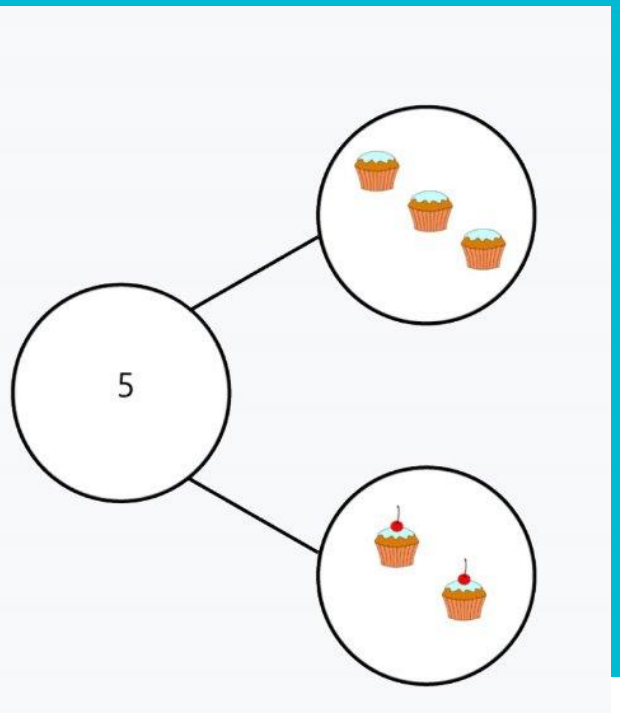
Using drawings to solve math problems

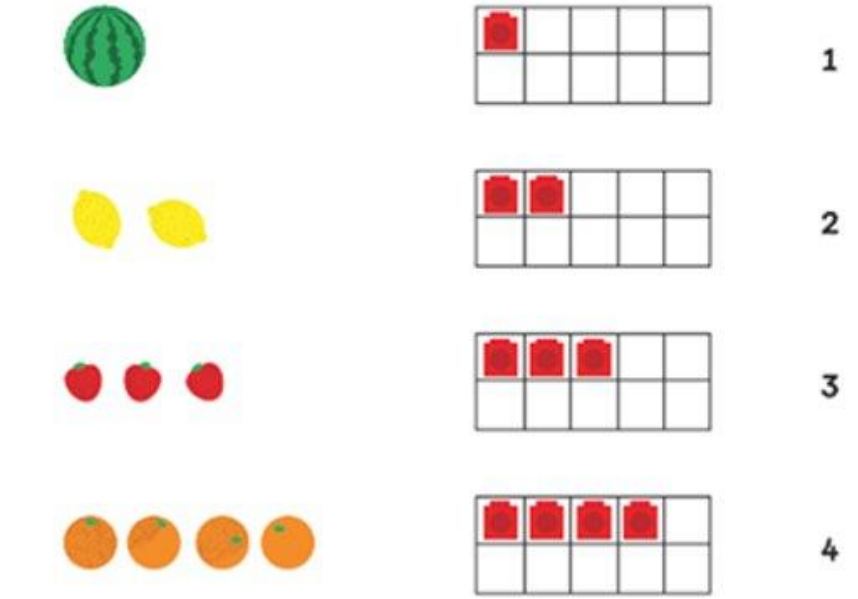


A for Abstract



Solving math problems using only numbers











Using Manipulatives









Explore

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Reasoning ….

‘If you can’t explain it simply, you don’t know it well enough.’

(Albert Einstein)

Mastery

We follow a Mastery approach to teaching mathematics

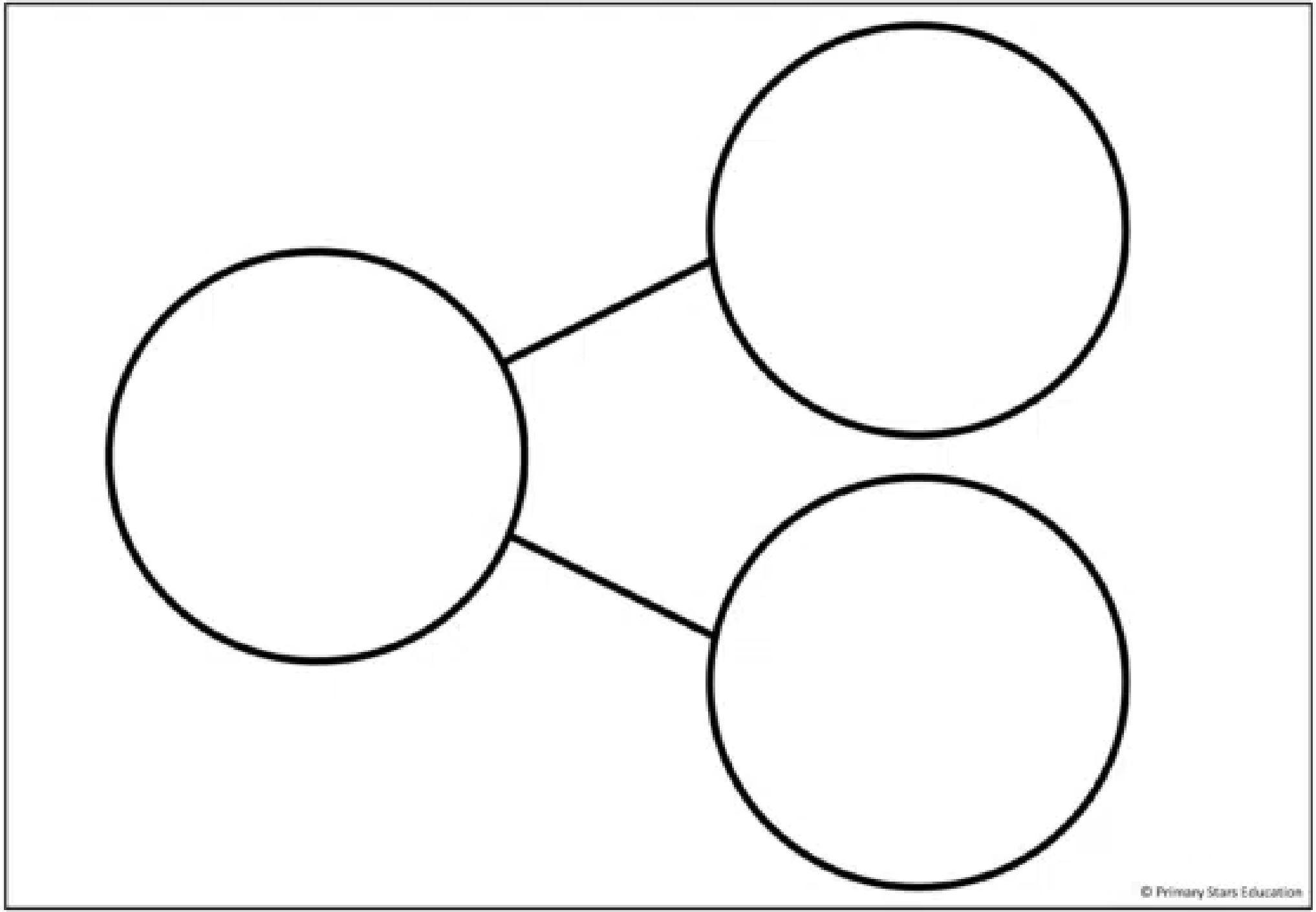
Sequence of learning that builds firm foundations for deep learning.

1. Start at an accessible point
2. Build the learning in small connected steps
3. Slow down where necessary so that all are learning together- adaptive teaching
4. Give opportunities for focused talk

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Supporting at home

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1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100