The Maths Curriculum at Naunton Park

NAUNTON PARK PRIMARY SCHOOL

Session purpose

- To try to make stronger connections with parents
- To give an outline of our current maths performance
- To inform parents of how we teach maths at Naunton Park, including an insight into what mastery maths teaching is
- To give a few helpful hints of ways that you can help with maths education at home

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Why do maths?

- Maths is a fundamental part of life for all people and we have a duty to ensure that children leave education as numerate people who can function in every day life
- Maths teaches crucial problem-solving, logical thinking, and analytical skills.
- Maths opens possibilities and doors to future jobs
- Maths teaches perseverance and resilience

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National Maths Assessments in school

- Y6 SATS
  - 3 test papers – 1 arithmetic, 2 reasoning and problem solving
  - Tested on the following areas:
    - Number and Place Value
    - Addition, Subtraction, Multiplication and Division
    - Fractions, Decimals and Percentages
    - Geometry (Shape, and Position & Direction)
    - Statistics
    - Ratio
    - Algebra
    - Measurement (including time)

- Y4 Multiplication Table Check
  - 25 questions
  - 6 seconds per question
  - Multiplication only – not division

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How are we doing?

MTC CHECK	2023	2024	2025
School Average score	19.8	21.3	22.1
National Average Score	20.2	20.6	21.1
	-0.4	+0.7	+1.0
School % full marks	13%	28%	42%
National % full marks	29%	34%	38%
	-16%	-6%	+4%

Y6 SATS	2023	2024	2025
School % at least at Expected standard	83%	78%	90%
National % at least at Expected standard	73%	73%	74%
	+10%	+5%	+16%
School % at Greater Depth Standard	31%	22%	47%
National % at Greater Depth Standard	24%	24%	26%
	+7%	-2%	+22%
School average scaled score	106.8	105	108.6
National average scaled score	104.2	104	105
	+2.6	+1	+3.6

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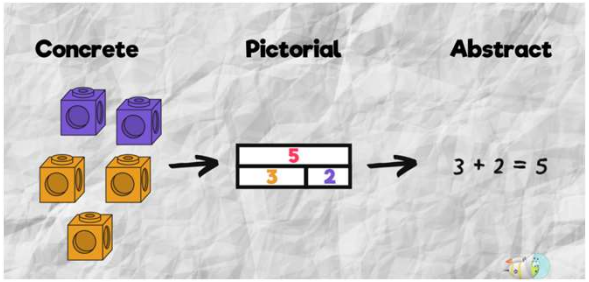
Mathematics at Naunton Park

- We foster positive, **all inclusive** 'can do' attitudes to mathematics.
- We believe in achievement for all and teach for secure and deep understanding of mathematical concepts.
- We use mistakes and misconceptions as an essential part of learning and provide challenge through rich and sophisticated problems to create a **love of learning**.
- Children receive Quality First Teaching where their needs are met through small-steps in a 'do it, secure it, deepen it' approach.
- We use modelling of worked examples using manipulatives which help to support and develop conceptual understanding and reduce the chances of misconceptions.

At Naunton Park we…

- This supports children moving from concrete, to pictorial and then the abstract.



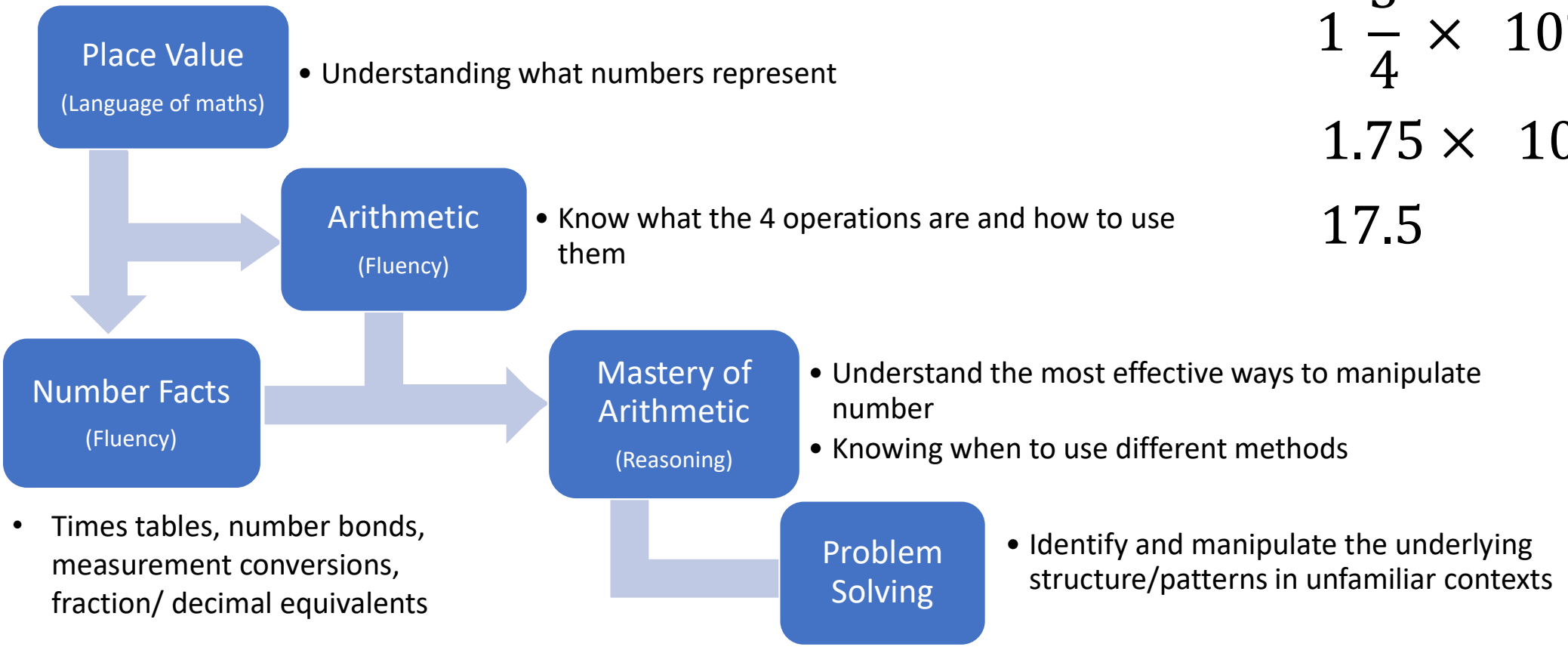
- Our mathematic content follows a well-crafted curriculum which builds on previous knowledge year on year.

- Each unit of work is structed in a progressive way with each lesson building on previous learning in small, manageable steps with a deeper level of challenge.

- All children work on the same step, although some will have more problem solving

- Through Maths on Track sessions, children have the opportunity to revisit and ‘deliberately’ practice particular mathematical skills through daily sessions. These sessions provide time to address children’s misconceptions, deepen knowledge and understanding and opportunity to retrieve prior knowledge.

Progression of Maths Understanding



Our Maths Curriculum

- **Main Maths Lessons** where teachers plan and deliver quality first teaching and learning opportunities where children develop their understanding of the subject.
- **Maths On Track Sessions** are short and pacey sessions where children rehearse their recall of key facts and processes and revisit prior learning.

- **Children typically take part in:**

- 45/50 minutes of maths lessons each day.
- 15/20 minutes of maths on track sessions

Maths On Track

- Time to practice arithmetic, number bonds, times tables and number facts (specific to each year group) developing pace and fluency of recall.
- Responding to class assessments or recent learning, giving time to develop children's understanding where it is clear that gaps have emerged.
- This may be different for each class and all teachers at Naunton Park use their class data to make decisions based on class need.
- Two ArithmeKit sessions:

  One based on the current year groups learning objectives.

  One based on prior learning.
- Various maths games can be used to develop recall speed.
- The use of manipulatives to help embed understanding is an essential part of Maths on Track and maths lessons.

Day	Activity	Extra Notes
Monday	Bonds / Tables / Facts 10-minute teaching activity 5-minute test / retrieval activity	Year 4 will complete two 'Tables Sessions' during the week, leaving only one spare session for: Responding to lessons Responding to Remember Its Responding to Ready to Progress Tests Year 2 will begin test in the summer term.
Tuesday	This session can be used for: Responding to lessons Responding to Remember Its Responding to Ready to Progress Tests Related Maths' Games	[Daily 10 - Mental Maths Challenge - Topmarks] Use a quick 'Daily Ten' before the start of each MOT session – this can be based on your number facts from the Monday session. It's another way of ensuring that we are giving the children enough opportunity to practice key bonds and tables.
Wednesday	Arithmekit – Previous Year Group This can be completed in any order	
Thursday	This session can be used for: Responding to lessons Responding to Remember Its Responding to Ready to Progress Tests Related Maths' Games	
Friday	Arithmekit – Current Year Group This should be completed in order. On completion of the final Arithmekit, you can start again from the beginning.	

Mastering	Aut 1			Aut 2			Spring 1			Spring 2			Summer 1			Summer 2		
	Week 1 - 3	Week 4 - 7		Week 1 - 3	Week 4 - 7		Week 1 - 3	Week 4 - 6		Week 1 - 3	Week 4 - 6		Week 1 - 3	Week 4 - 6		Week 1 - 3	Week 4 - 7	
Year 1 L.1	Count forwards/backwards in 1s (to 100)	Count forwards/backwards in 1s (to 100)		Count forwards/backwards in 10s (from multiples of 10)	Count forwards/backwards in 10s (from any number)		Count forwards/backwards in 2s (from even numbers)	Count forwards/backwards in 2s (from even numbers)		Count forwards/backwards in 2s (from odd numbers)	Count forwards/backwards in 2s (from odd numbers)		Count forwards/backwards in 5s (from multiples of 5)	Count forwards/backwards in 5s (from multiples of 5)		10x	10x	
Year 2 L.1-2	10x	10x		2x	2x		5x	5x		10x IF ready, begin learning division facts	2x IF ready, begin learning division facts		5x IF ready, begin learning division facts	5/10x IF ready, begin learning division facts		2x IF ready, begin learning division facts	4x	
Year 3 L.2-3	2x	4x		8x	4x		3x	8x		2/4x	5/10x		2/4/8x	3x		2/4/8x	3x	
Year 4 L.3-5	2/5/10x	2/4/8x		3x	6x		9x	7x		11x	12x		4/8/12x	3/6/9x		All	All	
Year 5 L.5	3/6/9x	7/11x		4/8/12x	3/6/9x		Review x and ÷ for any weak TT	2/5/10x		4/8/12x	3/6/9x		7/8x	4/8/12x		7/8x	Review any weak TT	
Year 6 L.5	4/8/12x	3/6/9x		7/8x	2/5/10/11x		All	All		All								

YEAR 3-6 TTRS BATTLE (CLASS V CLASS)

YEAR 2-6 TTRS BATTLE (FIND THE CHAMP)

YEAR 2-6 TTRS BATTLE (YR V YR)

YEAR 2-5 TTRS BATTLE (GIRLS V BOYS)

TTRS BATTLE (PARENTS V PUPILS)

TTRS BATTLE (CHILDREN V TEACHERS)

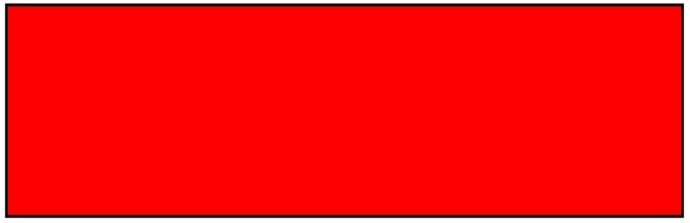
Level 1 means x facts

Level 2 means x and ÷facts

Level 3 means introduction of connected facts (10x, 100x, 0.1x etc) see below for year group specfic guide.

Level 4 means interleaving of different tables

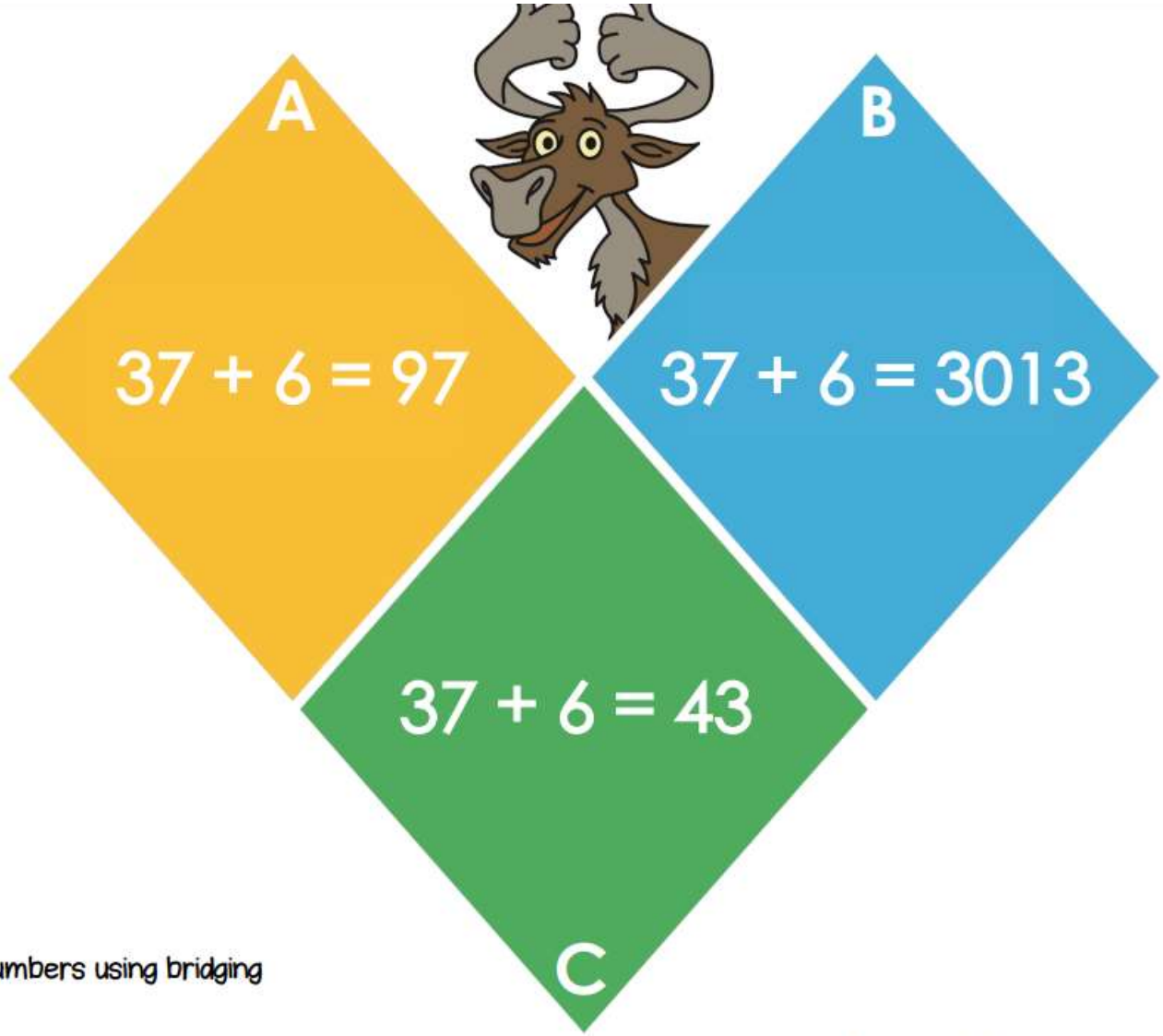
Level 5 means incorporating missing number questions



Year 2 – Example Lesson

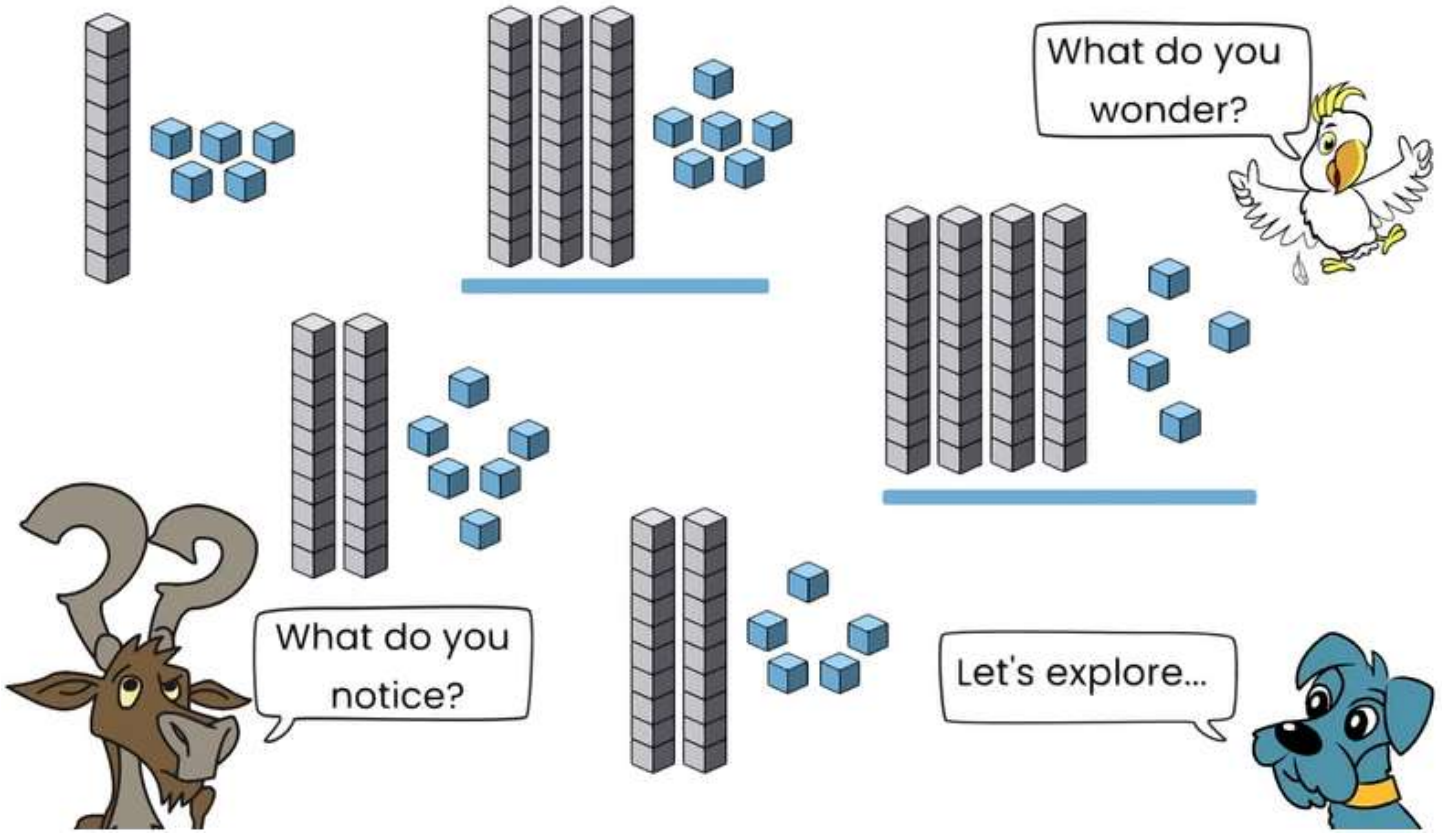
Classroom Beliefs

- Mistakes are valuable
- Everyone can learn Maths to the highest level.
- Questions are really important.
- Depth is more important than speed.
- Maths is about making connections.



Add ones to 2-digit numbers using bridging

Theme: Calculating – Addition and Subtraction



https://candomaths.mykajabi.com/products/plan-and-teach-resources-y1-6/categories/2154913915/posts/2176676409 Time – 3.00

Theme: Calculating – Addition and Subtraction

LO: Add multiples of ten to 2-digit numbers using number facts

Key vocabulary

sum

total

altogether

tens

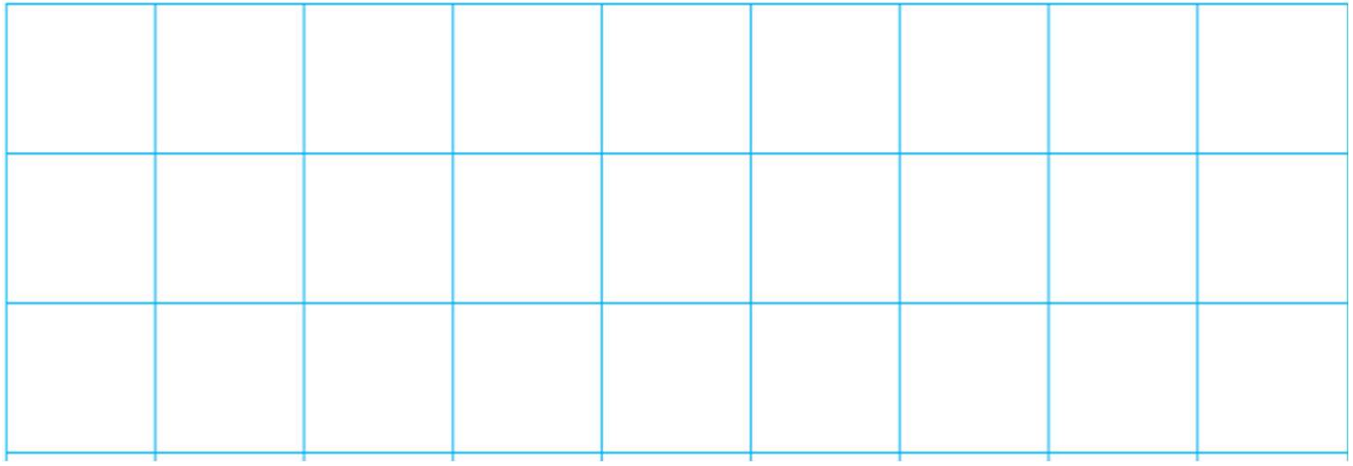
ones

digit

I DO - Teach It - Do It - What it is…

Calculate

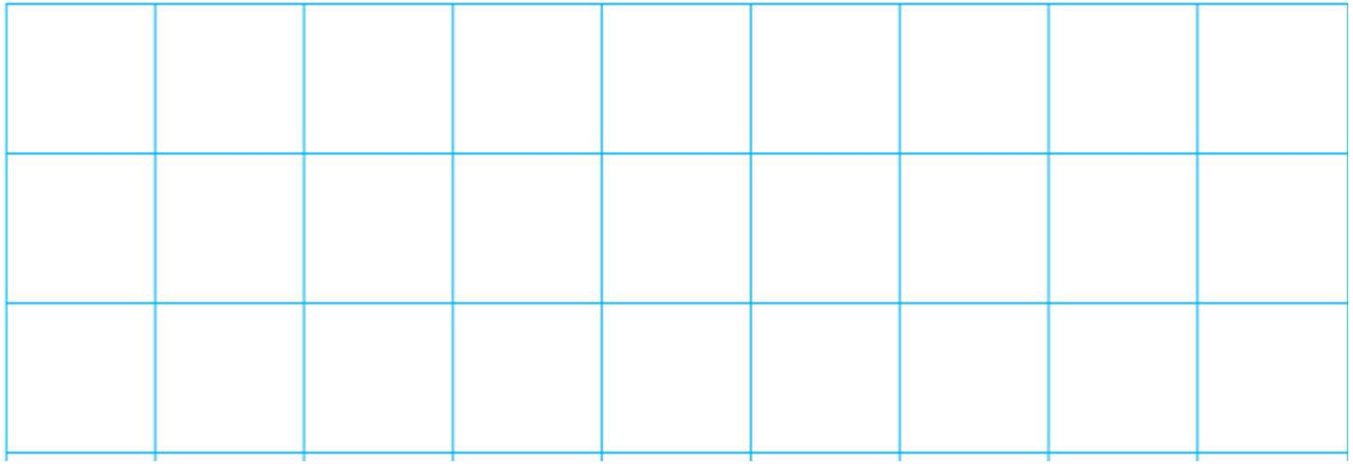
$18 + 20 =$



WE DO - Teach It - Do It - What it is...

Calculate

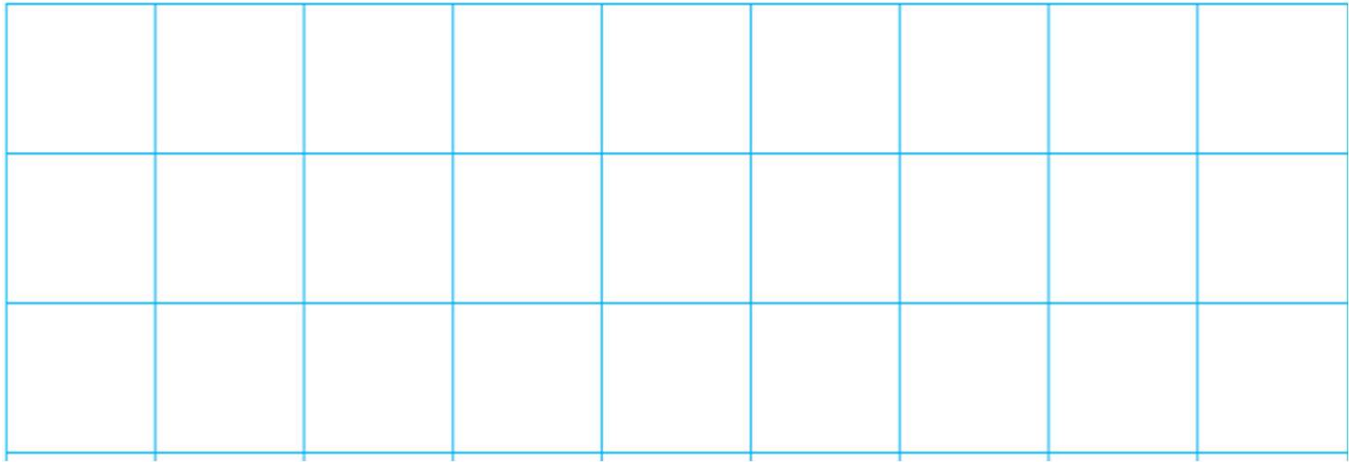
$16 + 20 =$



YOU DO - Teach It - Do It - What it is...

Calculate

$40 + 16 =$



Teach It - What it is not - Secure it...

Colin thinks that

$32 = 42 + 10$

Explain why he is incorrect.

Vocabulary:

sum
total
altogether
tens
ones
digit

Colin is incorrect because he has taken away 10 instead of adding 10. The sum of $42 + 10 = 52$.

HINGE QUESTION

?? = 48 + 20

Do it - What it is ?

Calculate:

17 + 20 =

17 + 40 =

30 + 16 =

□ = 40 + 32

□ = 48 + 50

Do it
Fluency work where children have the opportunity to answer questions based on their learning.

Teach It - What it is not - Secure it...

Colin thinks:

$$42 = 20 + 62$$

Explain why he is incorrect.

Vocabulary:

sum
total
altogether
tens
ones
digit

The answer is

Colin is incorrect because…

Secure it –
An opportunity for children to reason, explain and to test knowledge / understanding.

Discuss It - Deepen It

$$A + B = 76$$

A is a multiple of 10.

Find all the possible values for A and B.

Deepen it – Problem Solving

Review it : What have you learnt?

A

24 = 30 + 54

B

24 + 30 = 27

24 + 30 = 54

C

Add multiples of ten to 2-digit numbers using number facts

Assessment Opportunity

Maths Scoop Groups for any children who have misconceptions from the lesson.

Same day intervention.

Supporting Teaching Using Manipulatives

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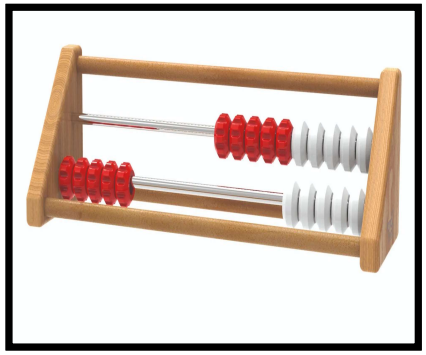
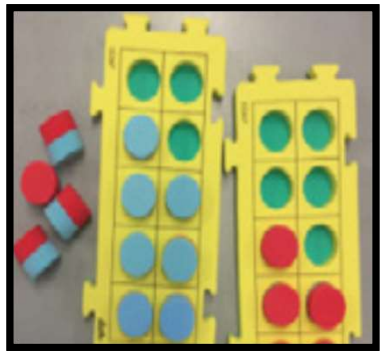
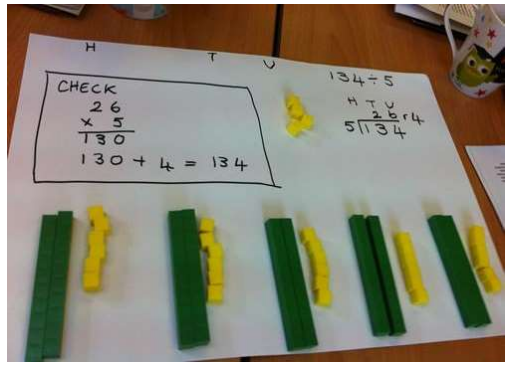


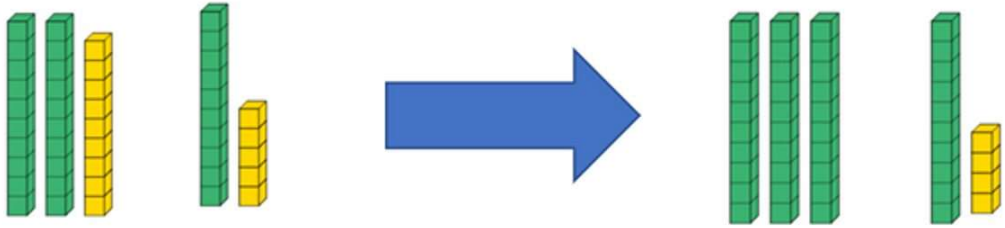


Why are Manipulatives Important

- **They reveal underlying structures:**
- **Learning / understanding the concept rather than learning a simple quick method with surface level understanding.**



- **They support fluency and flexibility:**
- **Help to make connections with learning and develop flexibility and fluency.**



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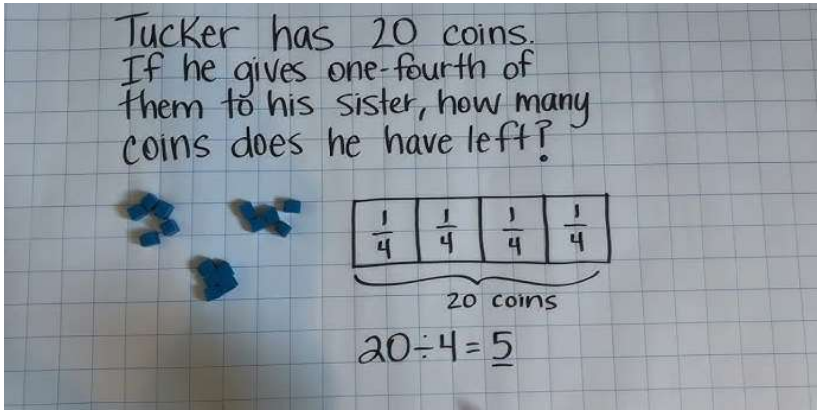
Why are Manipulatives Important

- **They provide a talking tool:**
- **Help encourage mathematical discussion.**
- **Help children to verbalise their mathematical thinking and understanding.**

- **They support problem solving:**
- **Manipulatives can help children visualise and explore problems in different ways.**
- **In pairs / groups, children can compare strategies and reasoning further deepening understanding.**



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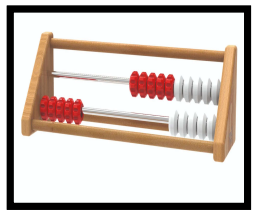
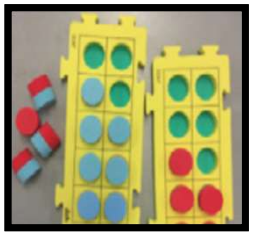
Why are Manipulatives Important

- **They reveal and help support with misconceptions:**
- **Children use manipulatives to communicate what they know.**

- **For Teachers:**
- **Manipulatives help to reveal any misconceptions children may have and help them to adapt teaching to build on children's prior knowledge.**

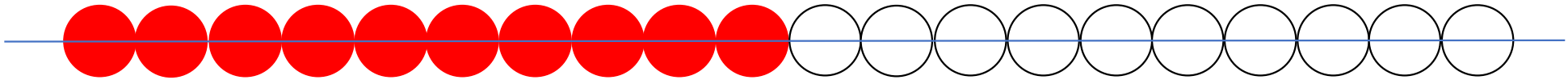
- **Here are some examples…**

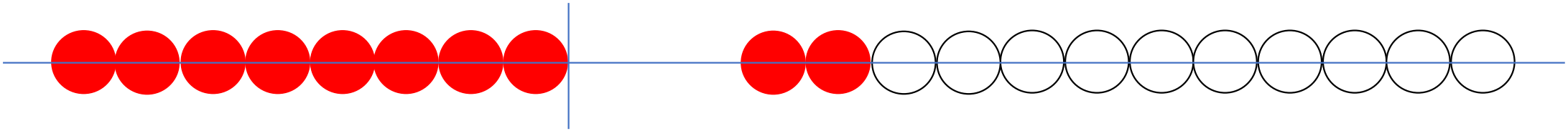



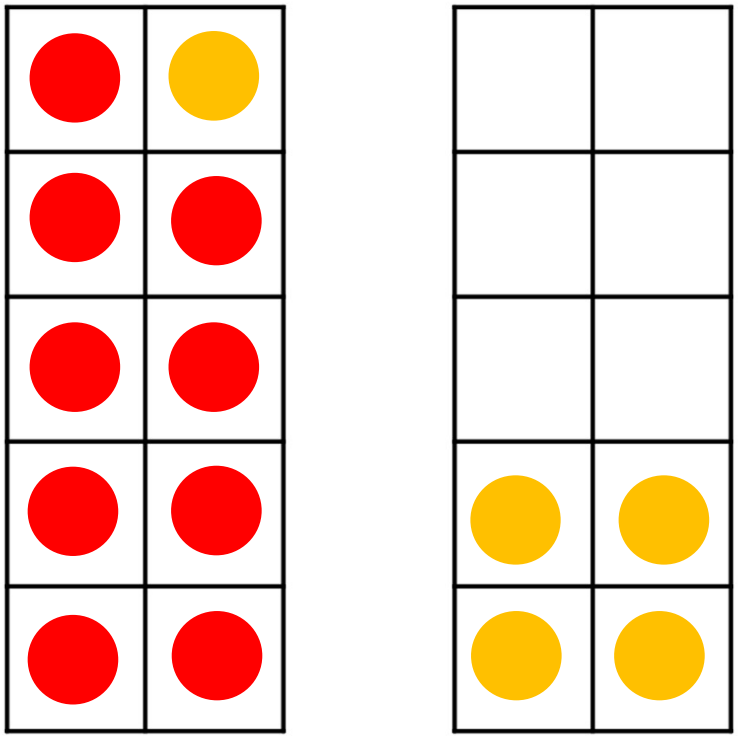
ITP Beadstring - Mathsframe

8 + 4 = 12





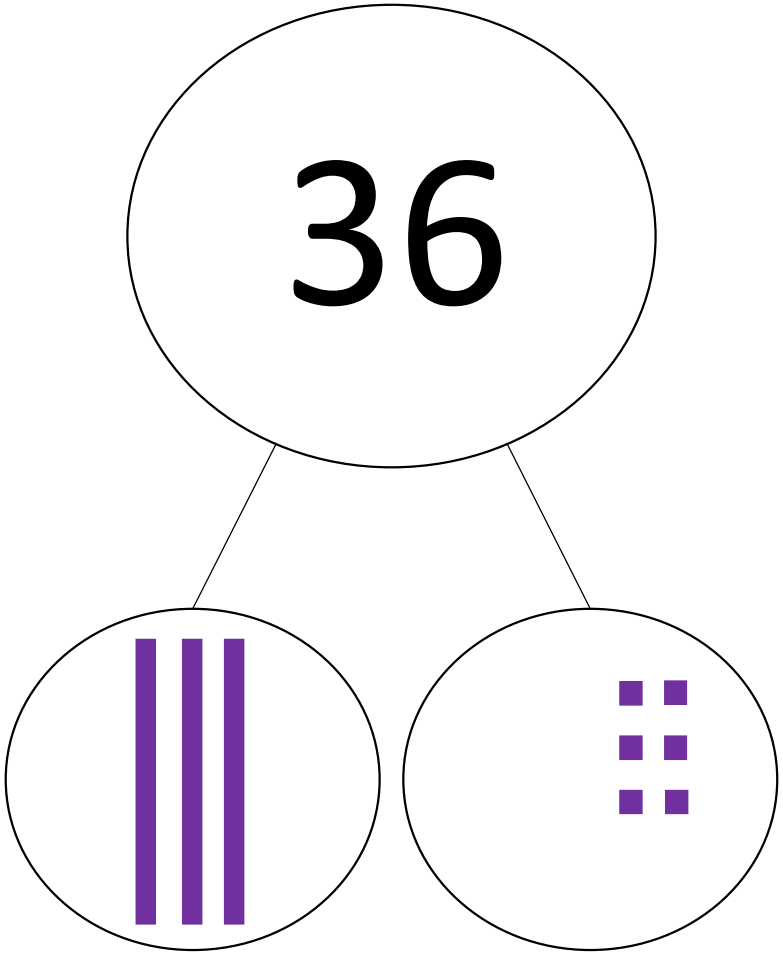
9 + 5 =

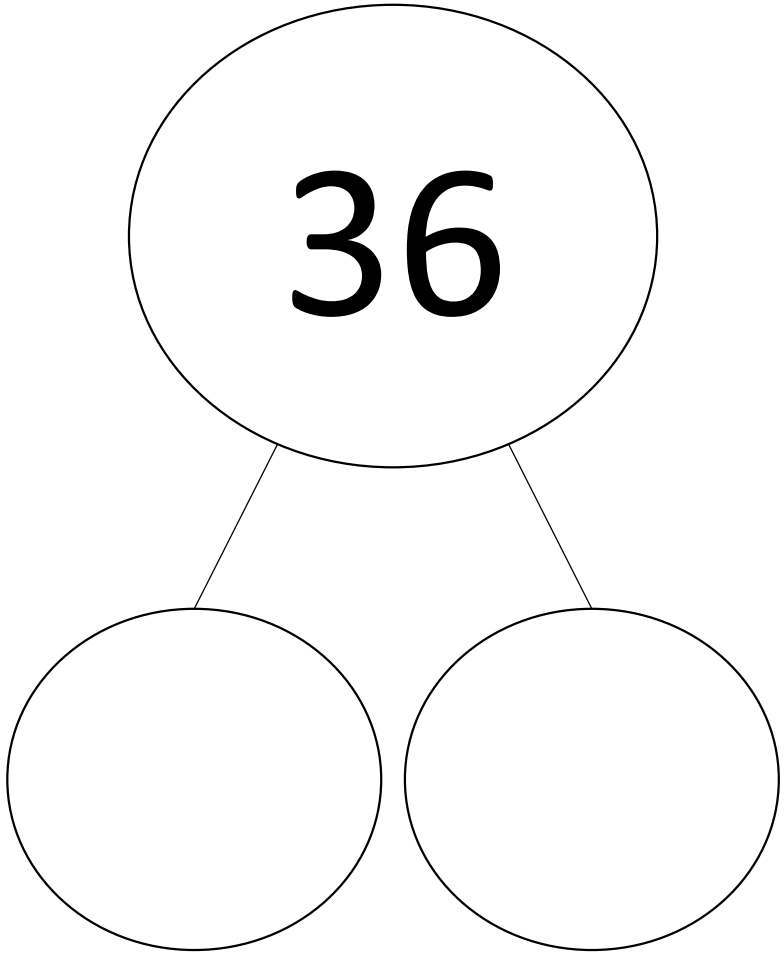


Ten Frame Modeller

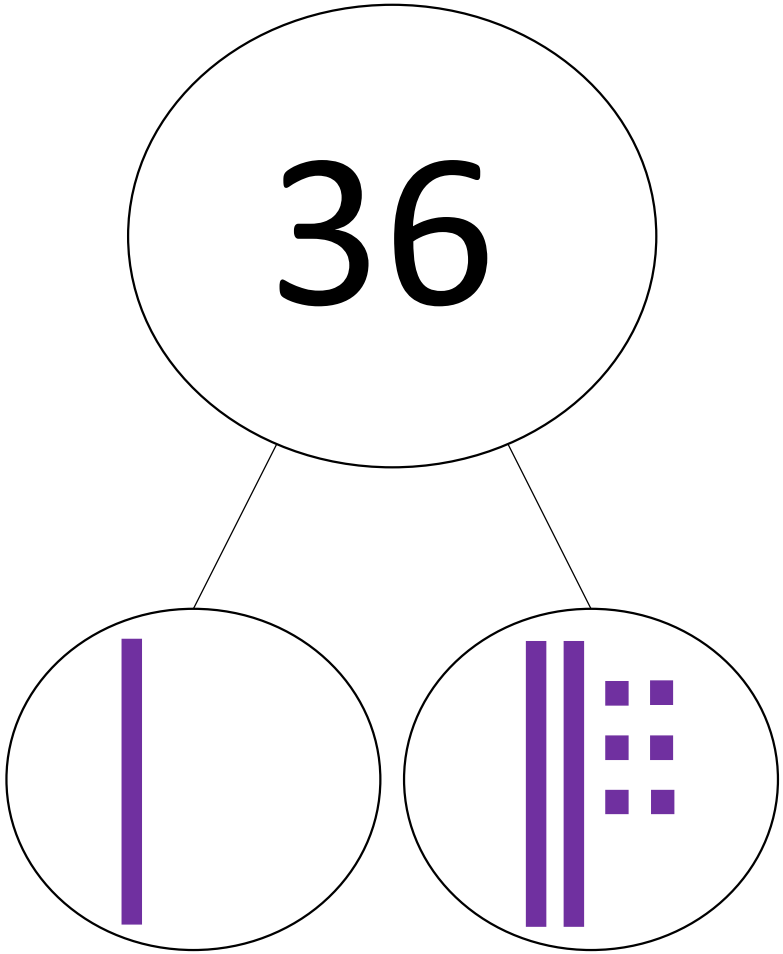
9 + 5 =

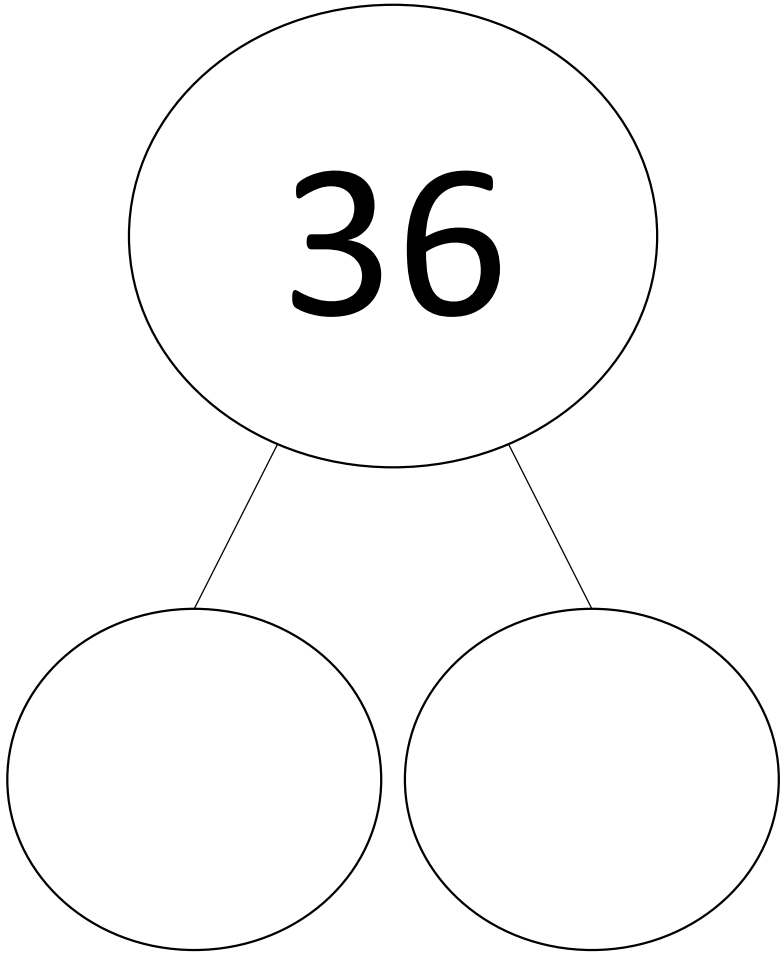
Part-Part-Whole





Part-Part-Whole



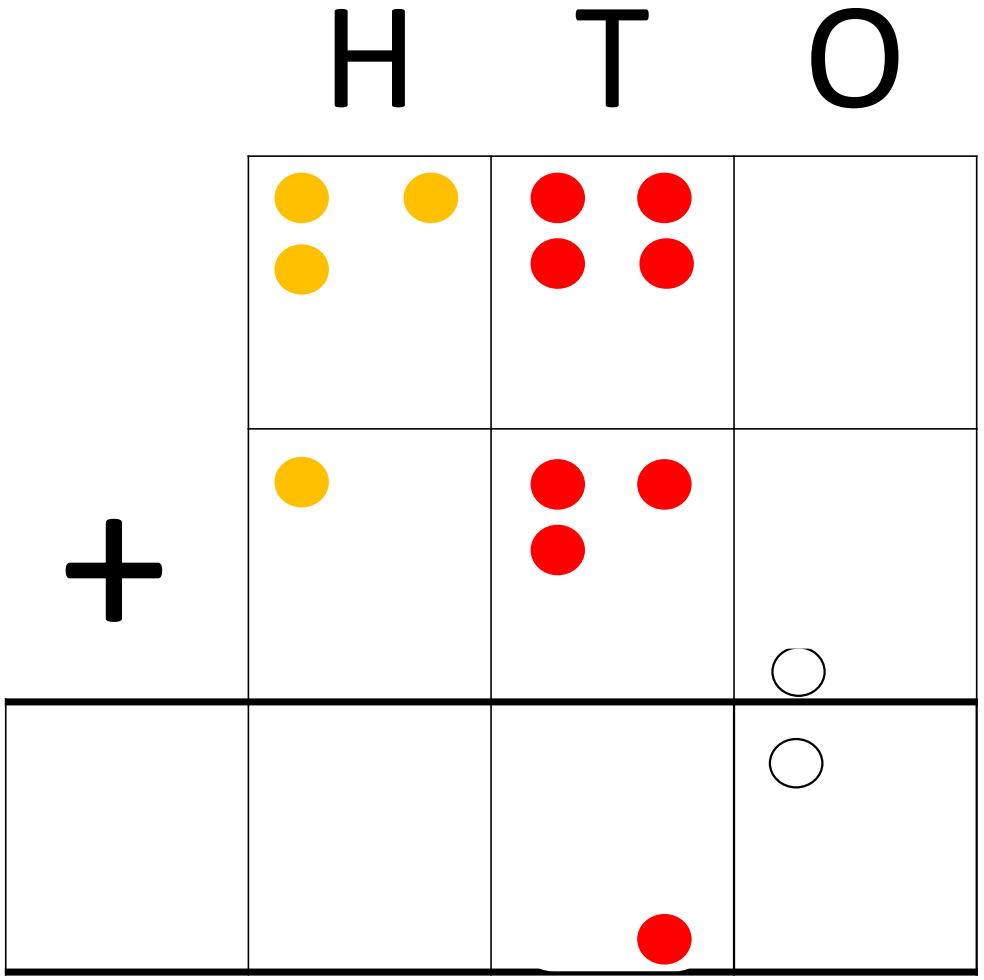


	T	O
	3	6
+	1	6

	T	O
	III	
+	I	. .

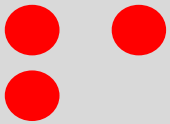
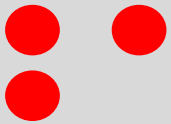
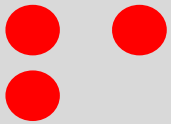
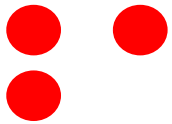
[The Column Method for Addition]

	H	T	O
	3	4	4
+	1	3	7



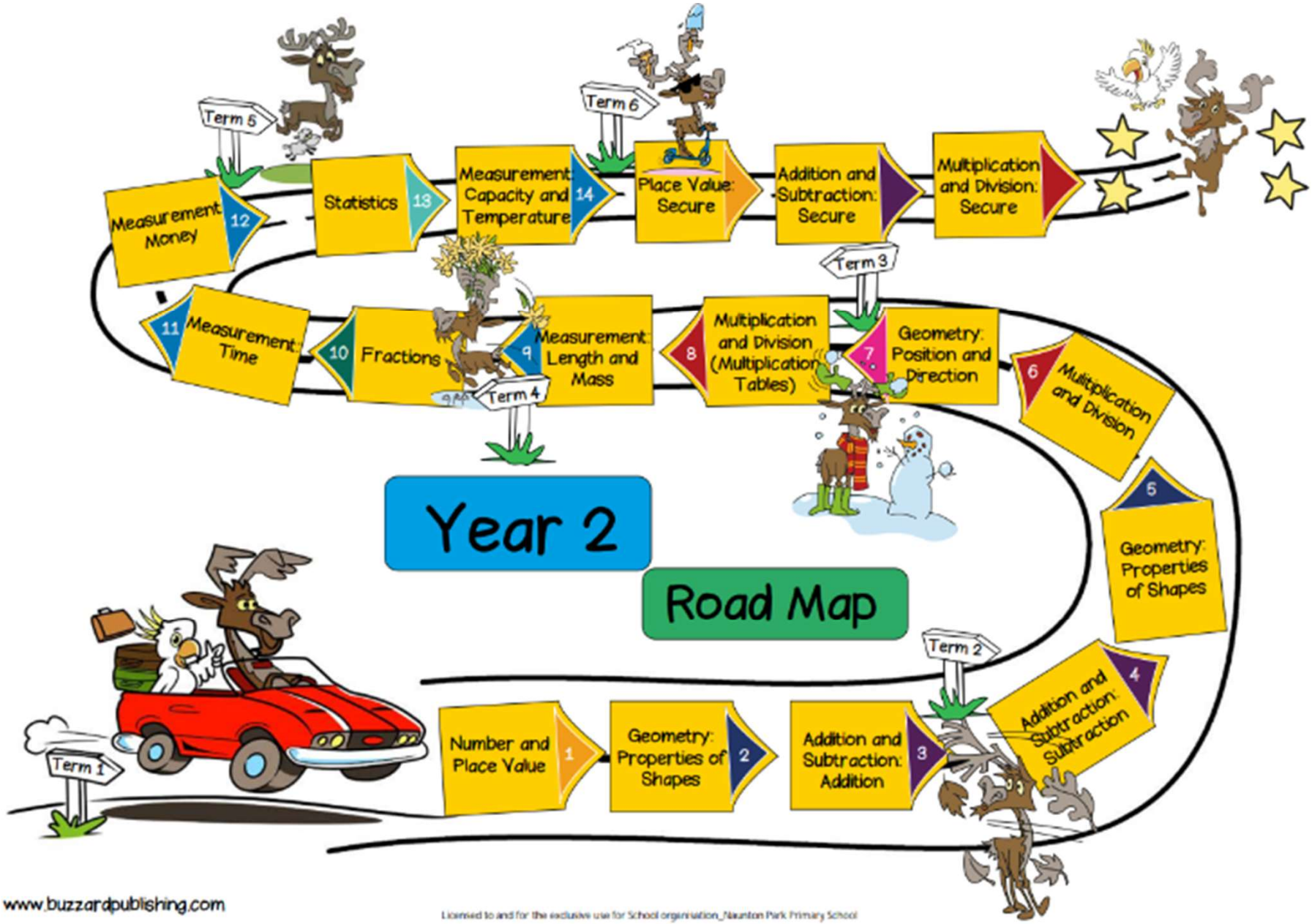
[The Column Method for Addition]

ITP Fractions - Mathsframe

The whole is: 12			
Three quarters are: 			

The whole is: 12			
Three quarters are:			

ROAD MAPS



Year 2 Term 2

Term 2. W/c		KPI	DfE RtP	Maths Lessons: Intelligent Practice Lesson by Lesson Plan Resources for planning included in Gold and All Access Pass	
04/11/2024	M	KPI 8, 9	2NF-1 2AS-2 3AS-3	**Addition and Subtraction: Subtraction Unit 4**	Extra Problem Solving
	T				Understand why subtraction is not commutative
	W				Recall subtraction facts of two single digits within 10
	T				Recall subtraction facts of 2-digit numbers (20 or less) subtract a single digit not bridging 10
	F				Recall subtraction facts of 2-digit numbers (20 or less) subtract a single digit bridging 10
11/11/2024	M			**Addition and Subtraction: Subtraction**	Use subtraction facts of 10 to subtract multiples of ten from 100
	T				Subtract ones from 2-digit numbers using number facts where the tens don't change
	W				Subtract ones from 2-digit numbers using bridging
	T				Subtract ones from 2-digit numbers by rounding to ten then compensating
	F				Subtract multiples of ten from 2-digit numbers using number facts
18/11/2024	M			**Addition and Subtraction: Subtraction**	Subtract two 2-digit numbers by counting back in tens then 1 s
	T				Subtract two 2-digit numbers by rounding to the nearest ten then compensating
	W				Subtract by finding the difference between two numbers - counting on
	T				Derive addition and subtraction facts using inverse operations
	F				Extra Problem Solving
25/11/2024	M			**Geometry: Properties of Shapes Unit 5**	Identify and describe the properties of cylinders
	T				Identify and describe the properties of cones
	W				Identify and describe 2-D shapes on the surface of 3-D shapes
	T				Compare and sort 3-D shapes and explain how they are similar or different
	F				Compare and sort 2-D shapes and explain how they are similar or different
02/12/2024	M	KPI 10, 11, 12	2MD-1, 2 4MD-2	**Multiplication and Division Unit 6**	Count in steps of 3 from zero
	T				Show and use the connection between multiplication and repeated addition
	W				Create multiplication statements to describe and solve equal grouping problems
	T				Use arrays to solve multiplication problems
	F				Show and use the commutativity of multiplication
09/12/2024	M			**Multiplication and Division**	Create division statements to describe and solve grouping problems
	T				Create division statements to describe sharing and solve problems
	W				Show that division is not commutative
	T				Extra Problem Solving
	F				Use mathematical language to describe position
16/12/2024	M	KPI 13		**Geometry: Position and direction Unit 7**	Use mathematical language to describe direction of a turn, including meaning of clockwise and anti-clockwise
	T				Understand and use the language of right angles to describe the size of turn
	W				Interpret and devise instructions for following a simple route
	T				Order combinations of mathematical objects in patterns and sequences
	F				*End of Term Assessment: Remembertt 2*
					Christmas break

If you wanted to help, this is what you can do…

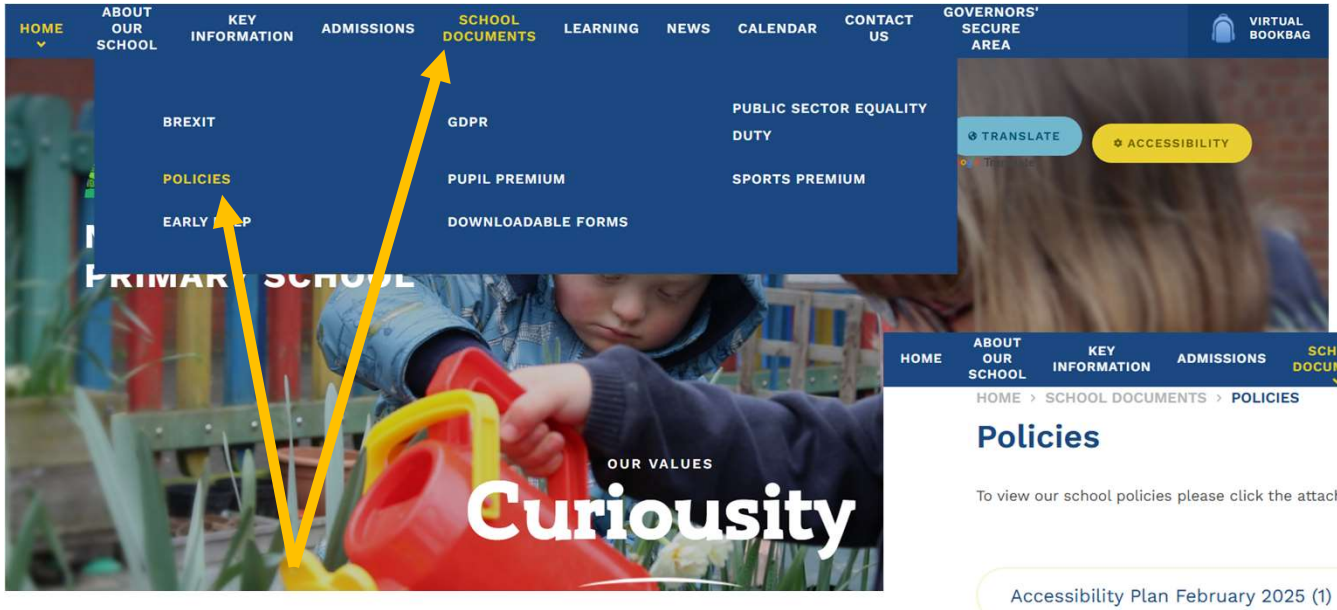
Our Platforms to Support Learning:

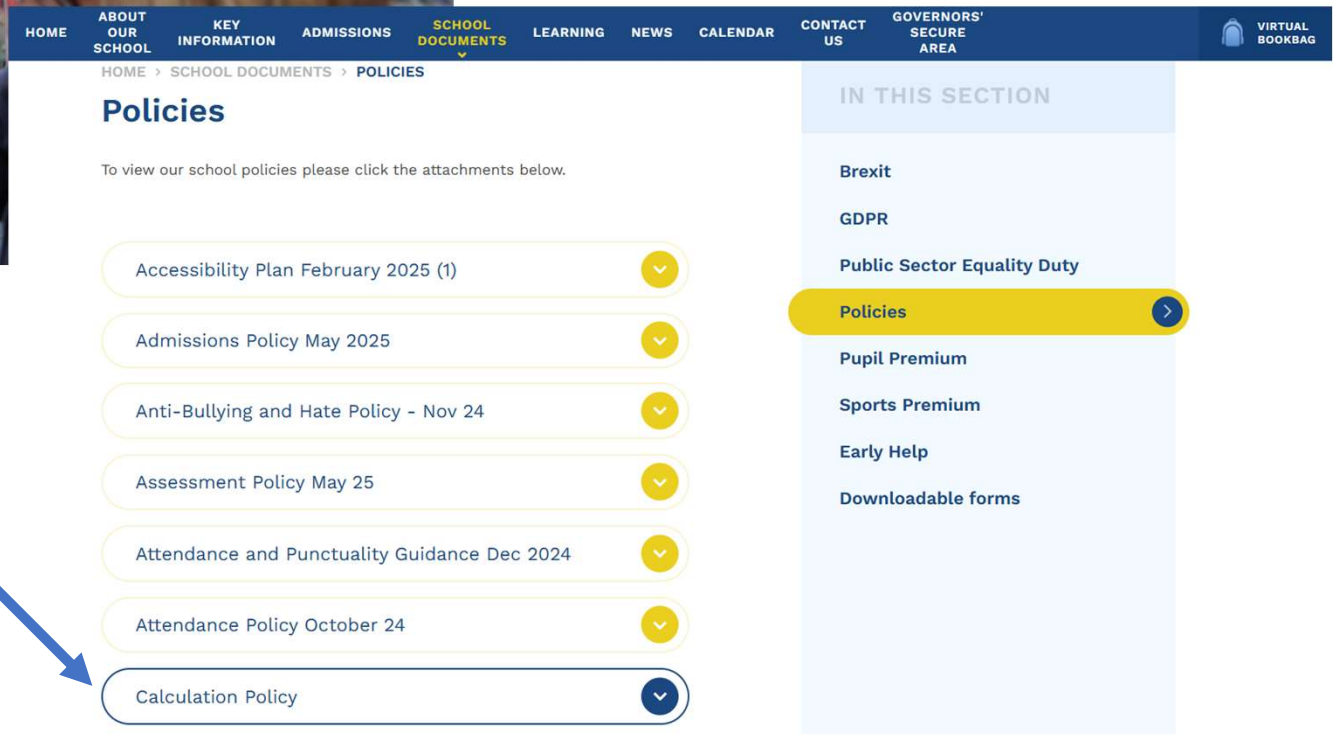
How much time should your children spend on these platforms?

3 times per week
5 minutes

Dice games
Counting in 2,3,4 etc
Noticing numbers in the environment

What if school works things out differently?





Naunton Park Primary School
Calculation Policy

NAUNTON PARK PRIMARY SCHOOL - CALCULATION POLICY – ADDITION Y1-Y3

YEAR 1

+ = signs and missing numbers

Children need to understand the concept of equality before using the '=' sign. Calculations should be written either side of the equality sign so that the sign is not just interpreted as 'the answer'.

2 = 1 + 1

2 + 3 = 4 + 1

Missing numbers need to be placed in all possible places.

3 + 4 = □ □ = 3 + 4

3 + □ = 7 7 = □ + 4

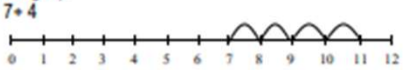
Counting and Combining sets of Objects

Combining two sets of objects (aggregation) which will progress onto adding on to a set (augmentation)

Understanding of counting on with a numbertrack:

Understanding of counting on with a numberline (supported by models and images).

7+ 4



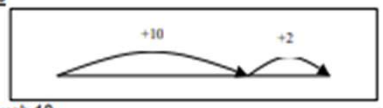
YEAR 2

Missing number problems e.g 14 + 5 = 10 + □ 32 + □ + □ = 100 35 = 1 + □ + 5

It is valuable to use a range of representations (also see Y1). Continue to use numberlines to develop understanding of:

Counting on in tens and ones

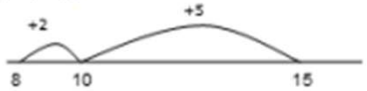
23 + 12 = 23 + 10 + 2
= 33 + 2
= 35



Partitioning and bridging through 10.

The steps in addition often bridge through a multiple of 10
e.g. Children should be able to partition the 7 to relate adding the 2 and then the 5.

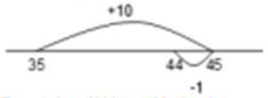
8 + 7 = 15



Adding 9 or 11 by adding 10 and adjusting by 1

e.g. Add 9 by adding 10 and adjusting by 1

35 + 9 = 44

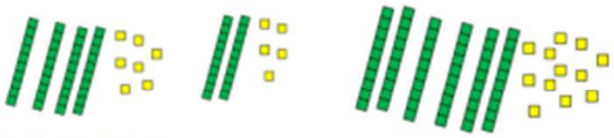


Towards a Written Method

Partitioning in different ways and recombine

47+25

47 + 25 = 60 + 12



Leading to exchanging:

72

Expanded written method

40 + 7 + 20 + 5 =

40+20 + 7 + 5 =

60 + 12 = 72

YEAR 3

Missing number problems using a range of equations as in Year 1 and 2 but with appropriate, larger numbers.

Partition into tens and ones

Partition both numbers and recombine.

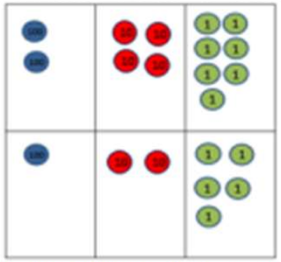
Count on by partitioning the second number only e.g.

247 + 125 = 247 + 100 + 20+ 5
= 347 + 20 + 5
= 367 + 5
= 372

Children need to be secure adding multiples of 100 and 10 to any three-digit number including those that are not multiples of 10.

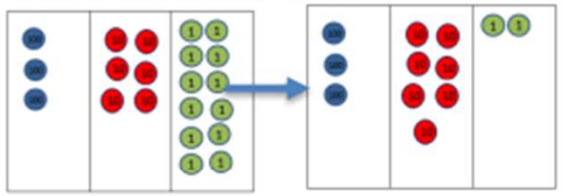
Towards a Written Method

Introduce expanded column addition modelled with place value counters (Dienes could be used for those who need a less abstract representation)



247
+125
12
60
300
372

Leading to children understanding the exchange between tens and ones.

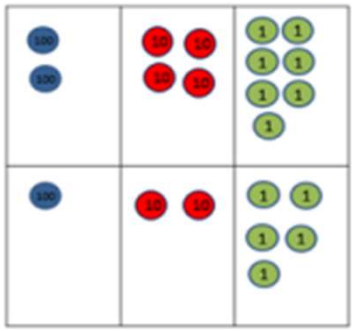
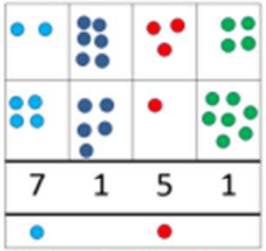


Some children may begin to use a formal columnar algorithm, initially introduced alongside the expanded method. The formal method should be seen as a more streamlined version of the expanded method, not a new method.

247
+125
372
1

PLEASE NOTE THE LOCATION OF CARRIED NUMBER

NAUNTON PARK PRIMARY SCHOOL - CALCULATION POLICY – ADDITION Y4-Y6

	YEAR 4	YEAR 5	YEAR 6
	Missing number/digit problems: **Mental methods** should continue to develop, supported by a range of models and images, including the number line. The bar model should continue to be used to help with problem solving. **Written methods (progressing to 4-digits)** Expanded column addition modelled with place value counters, progressing to calculations with 4-digit numbers:  200 + 40 + 7 100 + 20 + 5 300 + 60 +12 = 372 247 +125 12 60 300 372 **Compact written method** Extend to numbers with at least four digits.  2634 +4517 7151 **Children should be able to make the choice of reverting to expanded methods if experiencing any difficulty.** Extend to up to two places of decimals (same number of decimals places) and adding several numbers (with different numbers of digits). 72.8 + 54.6 127.4 1 1	Missing number/digit problems: **Mental methods** should continue to develop, supported by a range of models and images, including the number line. The bar model should continue to be used to help with problem solving. Children should practise with increasingly large numbers to aid fluency e.g. 12462 + 2300 = 14762 **Written methods (progressing to more than 4-digits)** As year 4, progressing when understanding of the expanded method is secure, children will move on to the formal columnar method for whole numbers and decimal numbers as an efficient written algorithm. 172.83 + 54.68 227.51 1 1 1 Place value counters can be used alongside the columnar method to develop understanding of addition with decimal numbers.	Missing number/digit problems: **Mental methods** should continue to develop, supported by a range of models and images, including the number line. The bar model should continue to be used to help with problem solving. **Written methods** As year 5, progressing to larger numbers, aiming for both conceptual understanding and procedural fluency with columnar method to be secured. Continue calculating with decimals, including those with different numbers of decimal places **Problem Solving** Teachers should ensure that pupils have the opportunity to apply their knowledge in a variety of contexts and problems (exploring cross curricular links) to deepen their understanding. .