Maths Workshop

Year 5

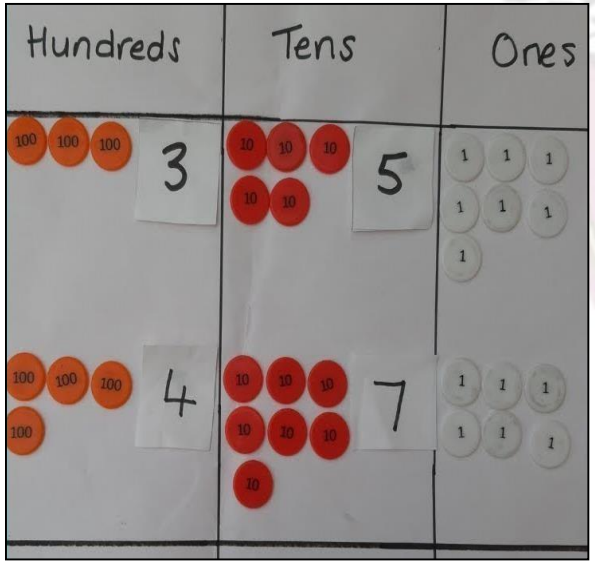
Aims of the session

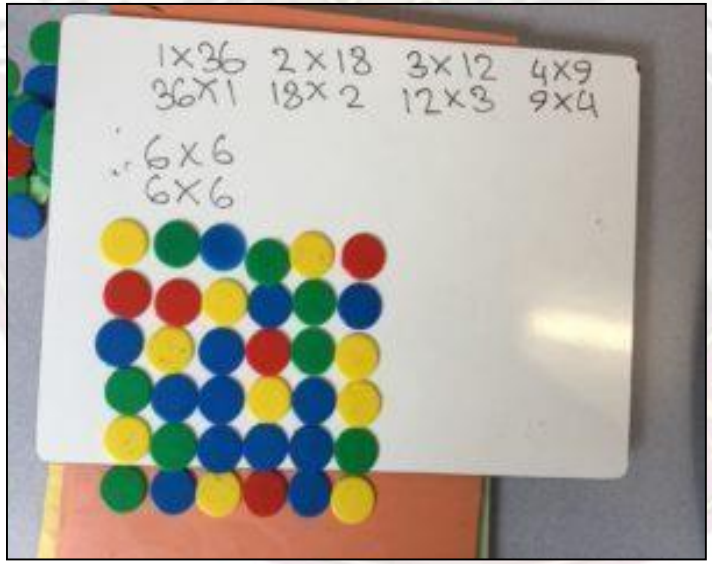
- To explain the concrete, pictorial and abstract approaches in maths
- What is a mastery approach
- To discuss the written calculation policy and how maths is taught at Wood Fold
- To try out some of the methods yourself and explore the resources that you can use to support your child at home.

CPA Approach: Concrete, Pictorial and abstract

Concrete – Doing the maths

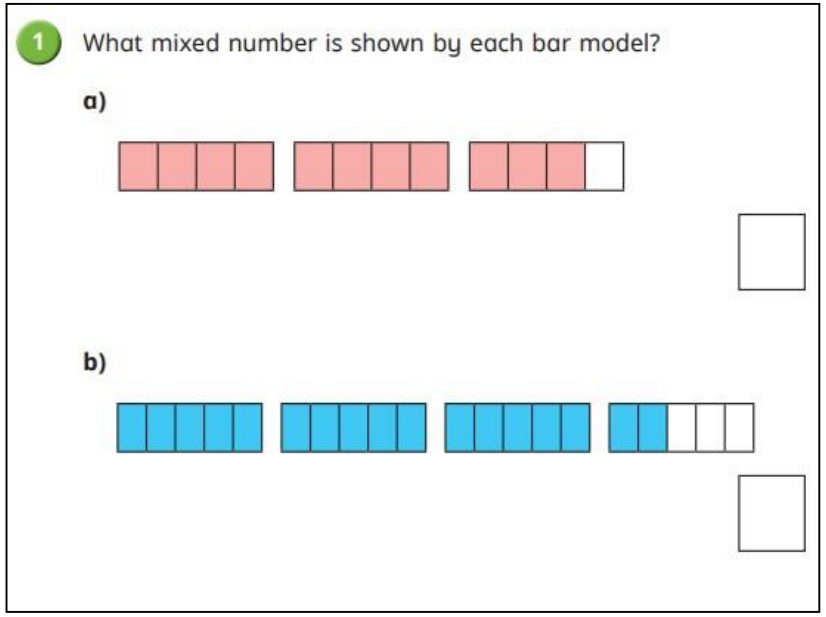
E.g. money, counters.

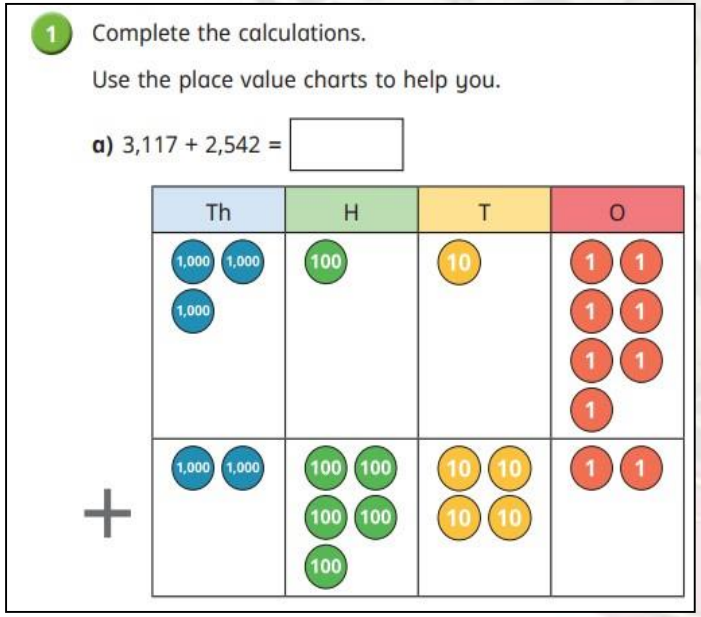




Pictorial: Seeing the maths

- Making connections between the concrete and the pictorial representations and the pictorial and the abstract. E.g. part whole models, bar models, ten frames.

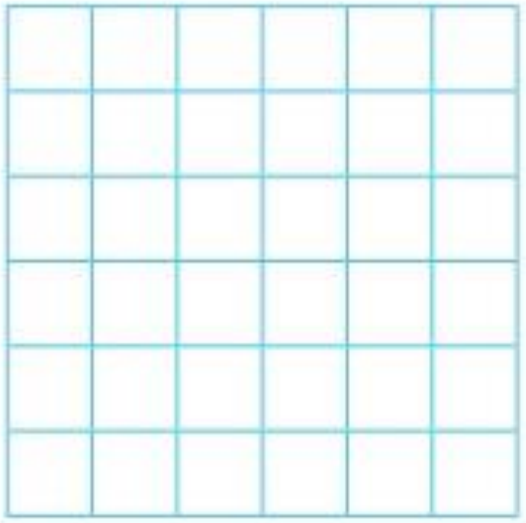




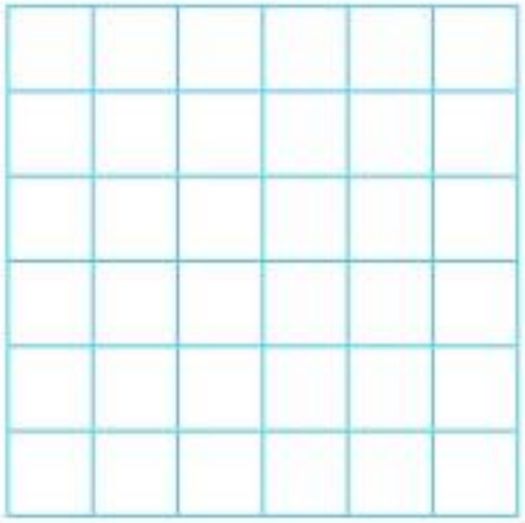
Abstract

The final stage is for children to **understand abstract mathematical concepts, signs and notation**. When a child demonstrates with concrete models and pictorial representations that they have grasped a concept, we can be confident that they are ready to explore the abstract. At this stage, pupils are expected to have a depth of knowledge, which can now be applied without the need for physical or visual support strategies.

e) 3 × 240



f) 7 × 131

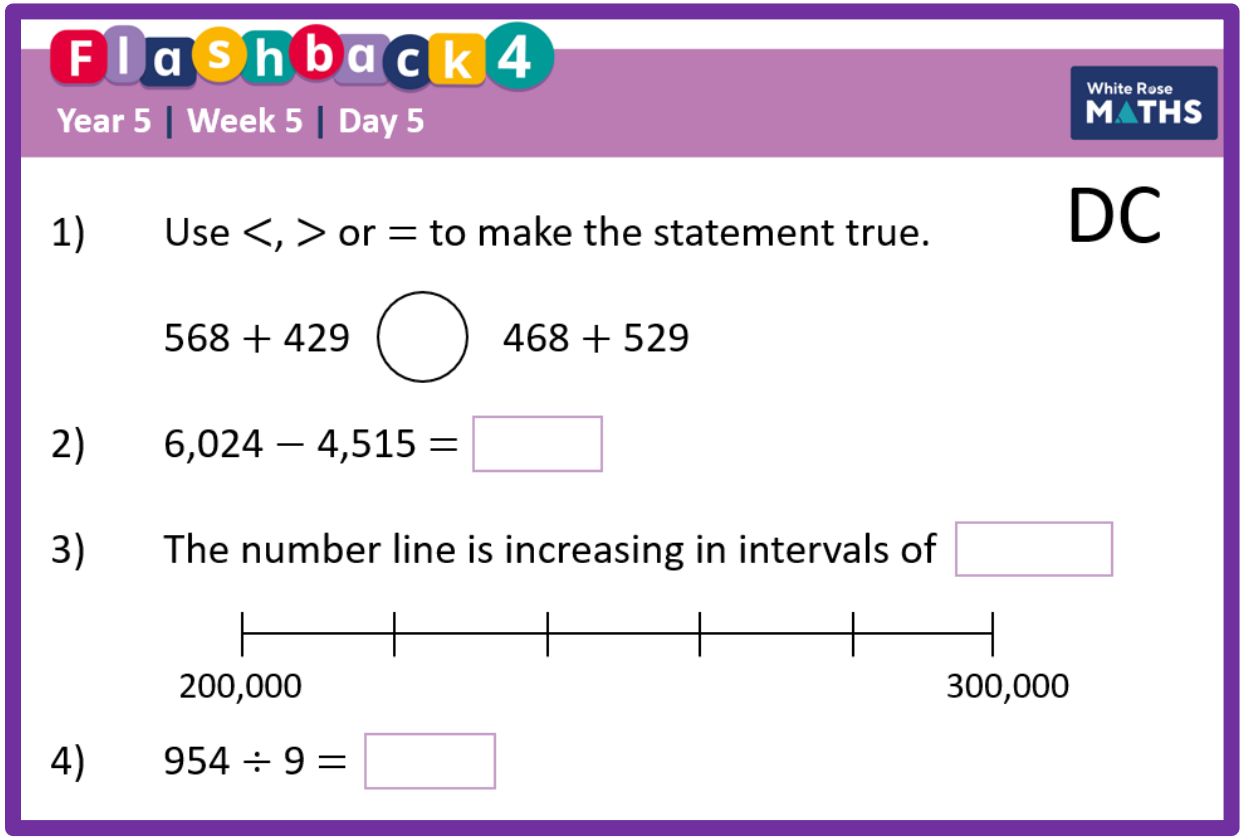


WOOD FOLD MATHS SEQUENCE:

- Flashback 4
- Arithmetic
- Times Tables
- Get Ready
- New Learning
- Problem Solving & Reasoning

FLASHBACK 4:

Flashback 4 is a daily 4-question activity from White Rose Maths that serves as a starter to a lesson, reinforcing knowledge and skills from the previous lesson, week, and term to aid retention and promote a mastery-based approach to learning.



ARITHMETIC:

Arithmetic covers the four foundational operations: addition, subtraction, multiplication and division.

Arithmetic is essential because it forms the foundational building blocks for all other forms of mathematics.

The teacher will share an example with the children and discuss different strategies to answer the question. The children will then complete a set of 4 questions each day and then on the 5^{th} day they will complete a quiz.

Day 1

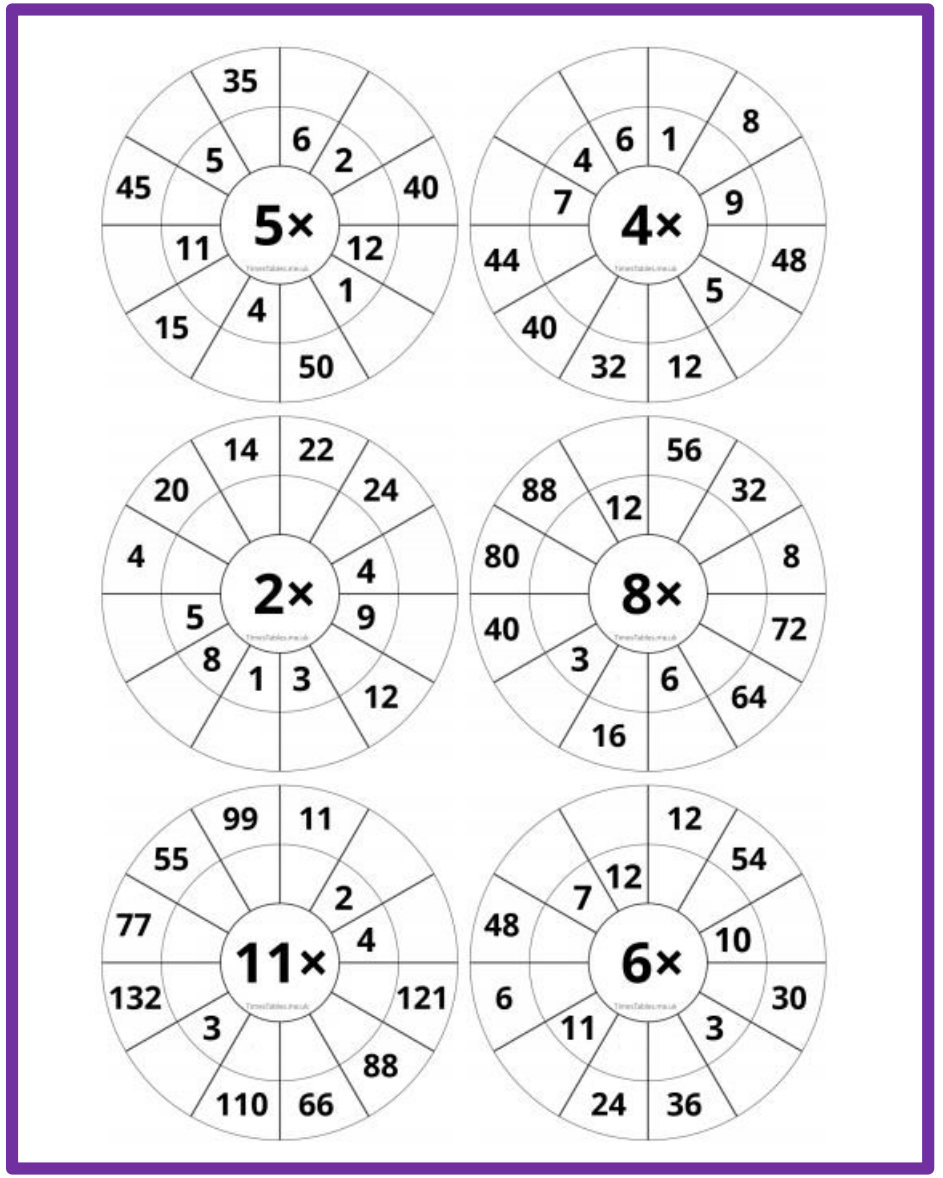
Example	234 + ____=546
	

How do I use the inverse to answer a question with a missing number?

TIMES TABLES:

Particular attention is placed on the children having security and fluency with times tables. Each child will be exposed to daily teaching of times tables in relation to the school's Times Tables Curriculum Overview, as well as a weekly test consisting of 25 multiplication and division questions.

By the time the children are in Year 5 they should be fluent with rapid recall of all multiplication and corresponding division facts up to 12 x 12.



GET READY:

"Get Ready" in White Rose Maths refers to the initial part of a lesson where children are prompted to review and activate prior knowledge relevant to the new topic, ensuring they have the necessary foundation before moving on to the main part of the lesson.

1) $2{,}431 + 3{,}156 = 5{,}587$

Use the addition to find the missing numbers.

$\square + 2{,}431 = 5{,}587$

$5{,}587 - 3{,}156 = \square$

$5{,}587 - \square = 3{,}156$

2) Work out $1{,}000 - 473$

3) Work out $999 - 472$

1) $2{,}431 + 3{,}156 = 5{,}587$

Use the addition to find the missing numbers.

$\boxed{3{,}156} + 2{,}431 = 5{,}587$

$5{,}587 - 3{,}156 = \boxed{2{,}431}$

$5{,}587 - \boxed{2{,}431} = 3{,}1$

		0	9	9		
		~~1~~	~~10~~	~~10~~	10	
	−		4	7	3	
			5	2	7	

2) Work out $1{,}000 - 473$

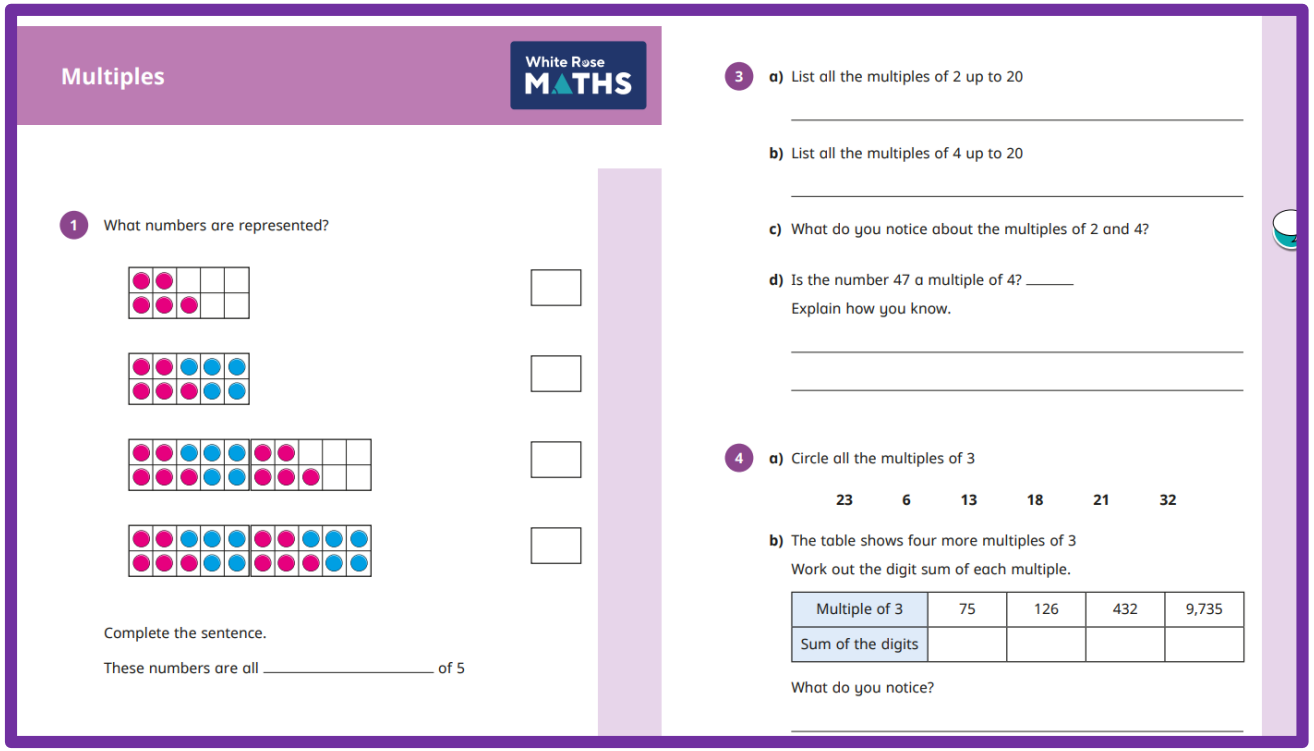
3) Work out $999 - 472$

			9	9	9	
	−		4	7	2	
			5	2	7	

NEW LEARNING:

The main body of the lesson will be taught be teachers, focusing on the individual learning elements of the curriculum.

Learning in each lesson will be recorded in either Maths or White Rose books, with opportunities given for children to self and peer assess where possible.



Multiples

White Rose MATHS

1 What numbers are represented?

Complete the sentence.

These numbers are all _____ of 5

3 a) List all the multiples of 2 up to 20

b) List all the multiples of 4 up to 20

c) What do you notice about the multiples of 2 and 4?

d) Is the number 47 a multiple of 4? _____

Explain how you know.

4 a) Circle all the multiples of 3

23 6 13 18 21 32

b) The table shows four more multiples of 3

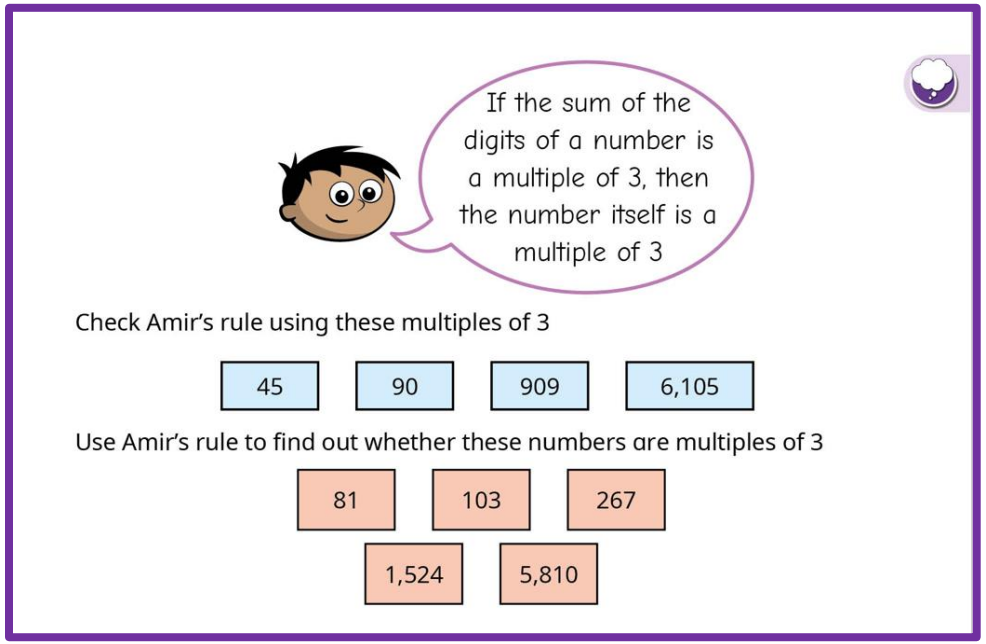
Work out the digit sum of each multiple.

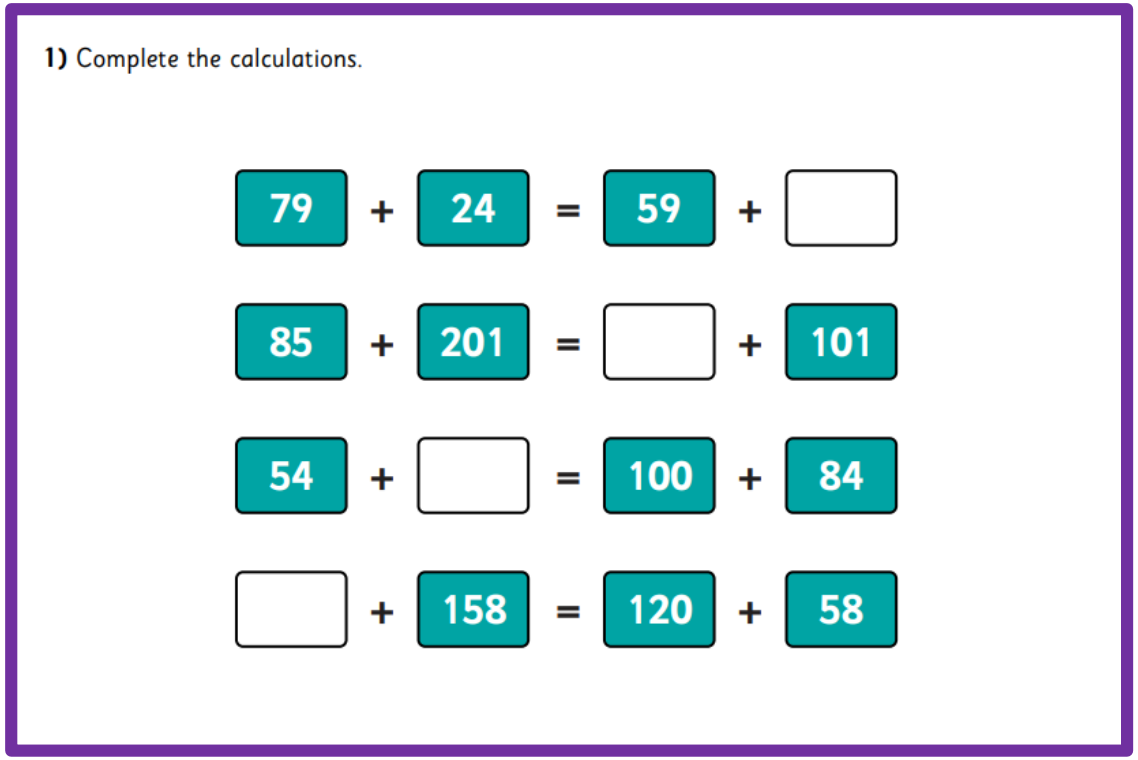
Multiple of 3	75	126	432	9,735
Sum of the digits				

What do you notice?

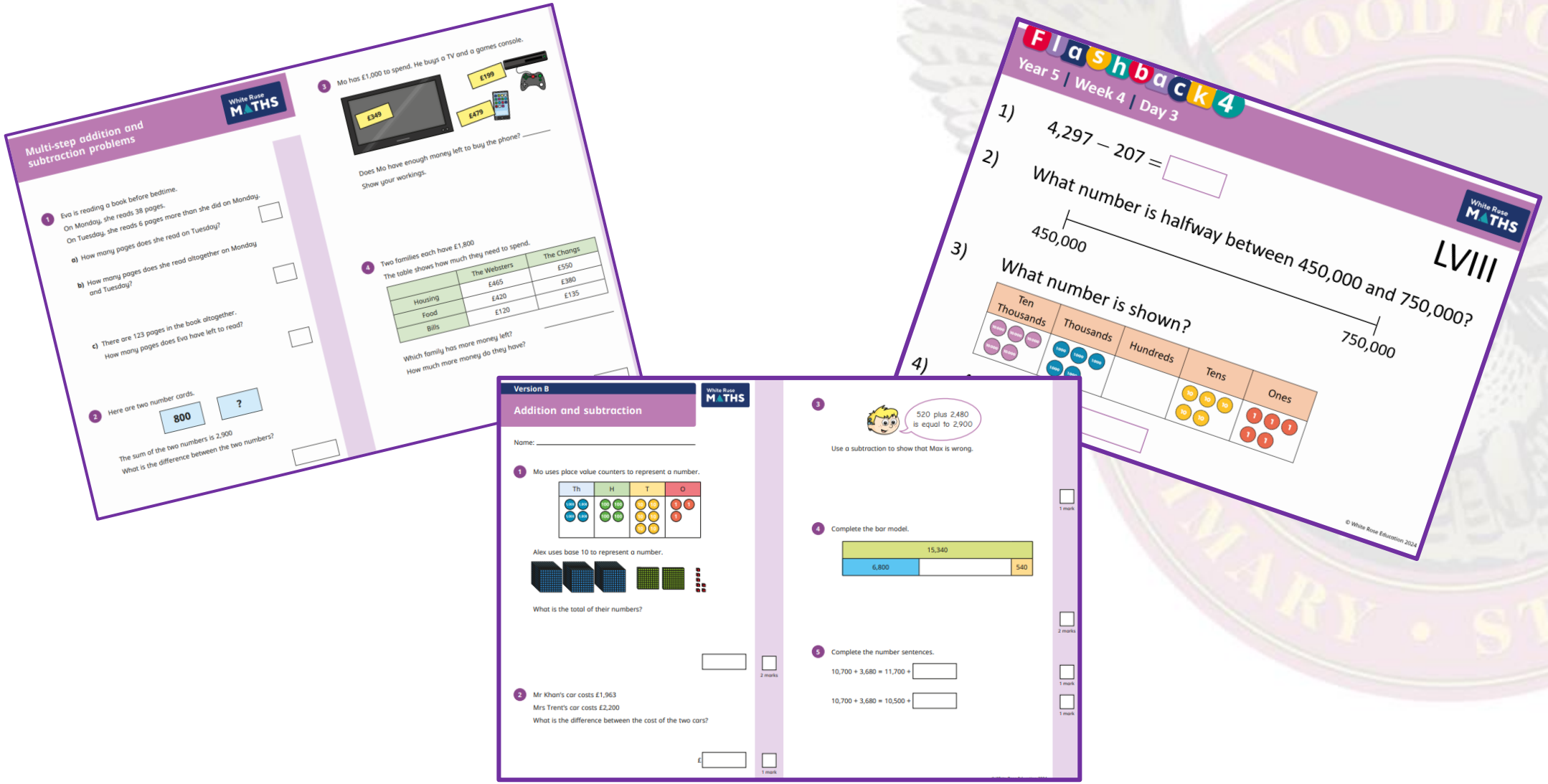
PROBLEM SOLVING & REASONING:

To conclude the lesson, children will complete reasoning problems that consolidates their understanding from the lesson.





We use White Rose resources across the school as the main resources to deliver lessons



Addition Vocabulary

Add, addition, more, plus, increase sum, total, altogether, how many more to make…?

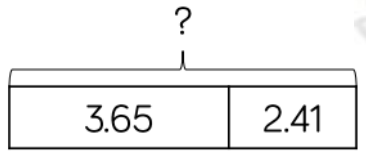
Subtraction Vocabulary

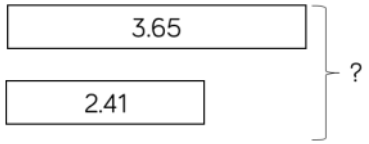
Subtract, subtraction, take (away), minus, decrease, how many are left/leftover? Difference, how many more/fewer is… than…?

Addition in Year 5

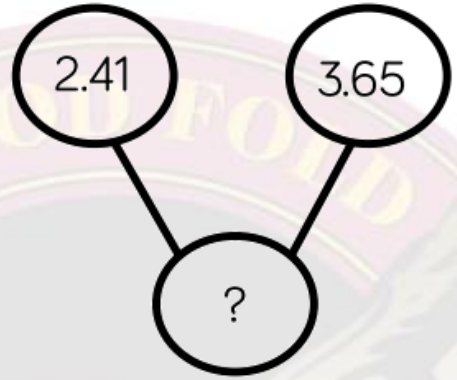
Y5 Objectives
Add numbers with more than 4 digits
Add numbers with up to 3 decimal places
Multi-step problems

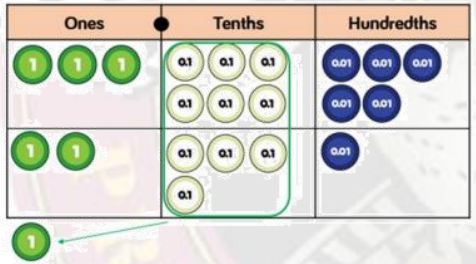
Children to use part whole and bar model to develop estimation and number sense.

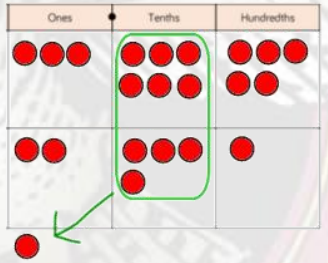




$$\begin{array}{r} 3.65 \\ +\ 2.41 \\ \hline 6.06 \\ \hline 1 \end{array}$$







Vary the number of digits in the number.

247 +14699 =

Add more than two numbers together.

1242 + 354 + 26489 =

Write = in different positions.

? = 6.9 + 14.32

Balanced equations
648 + ? = 1036 +58

Adding fractions

A is an odd number which rounds to 100,000 to the nearest thousand.
It has a digit total of 30.
B is an even number which rounds to 500,000 to the nearest hundred thousand.
It has a digit total of 10.
A and B are both multiples of 5 but end in different digits.

A	B
631,255	

Subtraction in Year 5

Y5 Objectives
Subtract numbers with more than 4 digits
Subtract with up to 3 decimal places
Multi-step problems

- Vary the number of digit in the number.

  15.743 – 214.9=

- Subtract more than two numbers.

  143,524 – 12,345 - 1698 =

- Missing boxes.

  _____ - 200 = 23, 837

- Balanced equations.

  231.64 - ? = 254.2 - 0.58

- Subtracting fractions.

  $\frac{5}{6} - \frac{1}{4} =$

Children to use part whole and bar model to develop estimation and number sense.

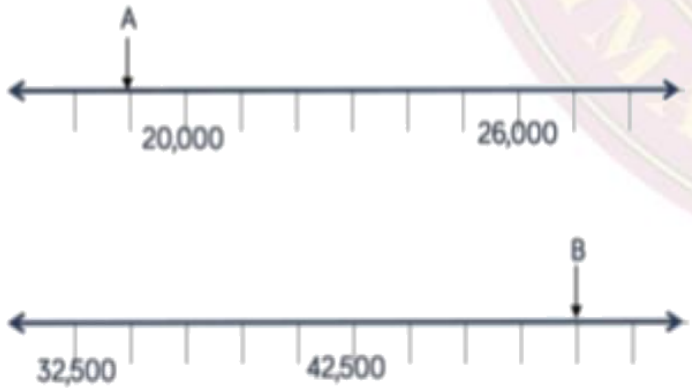
487.3	
?	2.9

Problem Solving

A four bedroom house cost £450,000.
A three bedroom house costs £199,000 less.
How much does the three bedroom house cost?
What method did you use to find the answer?

Multi-step problems

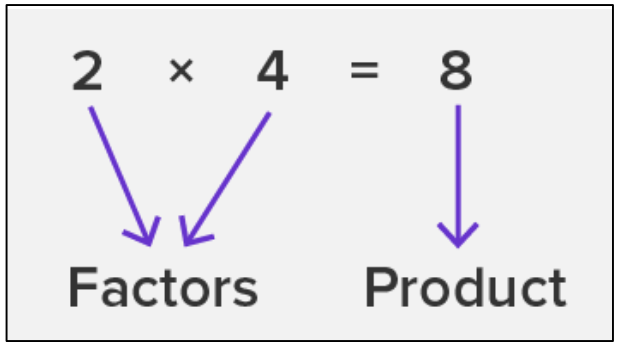
Find the difference between A and B



In Year 5 the children will tackle subtraction calculations relating to fractions, subtracting more than two numbers and by completing multi-step word problems.

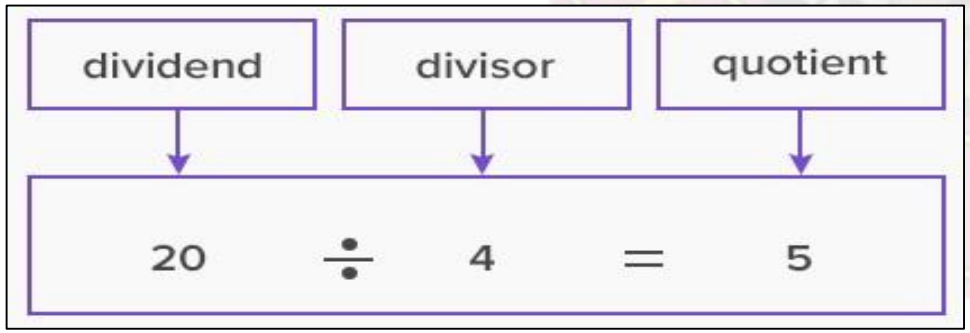
Multiplication Vocabulary

Lots of, groups of, multiply, multiplication, multiplied by, multiple of, product, factors



Division Vocabulary

Halve, share, share equally, group in…, groups of, divide, division, dividend, divided by, divisible by, inverse, quotient



Multiplication

Y5 Objectives
Multiply 4-digit numbers by 1-digit numbers
Multiply 2, 3 & 4 digit numbers by a 2-digit number
Multi-step problems

$1{,}826 \times 3 = 5{,}478$

	Th	H	T	O
	1	8	2	6
×				3
	5	4	7	8
	2		1	

	H	T	O
		2	2
×		3	1
		2	2
	6	6	0
	6	8	2

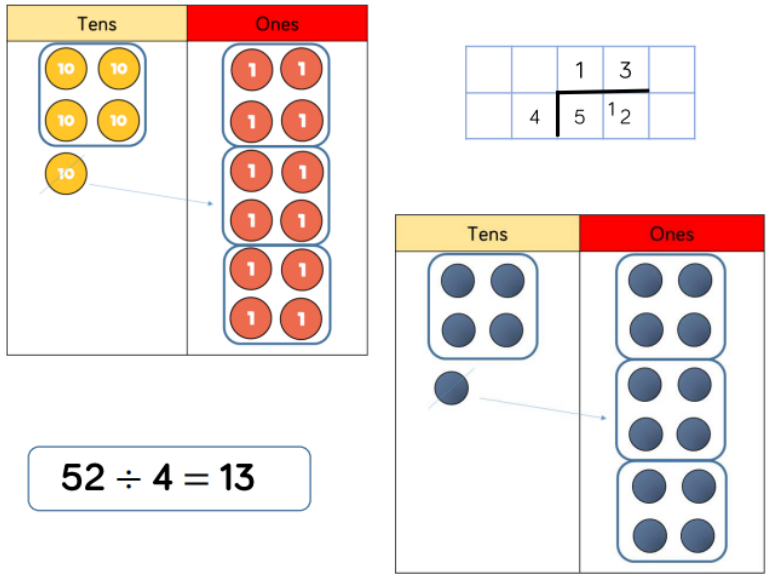
place holder

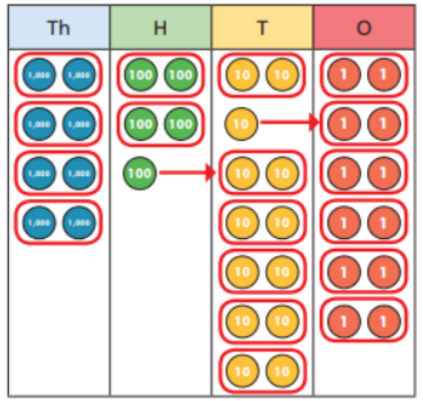
TTh	Th	H	T	O
	2	7	3	9
×			2	8
2 (2)	1 (5)	9 (3)	1 (7)	2
5 (1)	4	7 (1)	8	0
7	6	6	9	2
		1		

$2{,}739 \times 28 = 76{,}692$

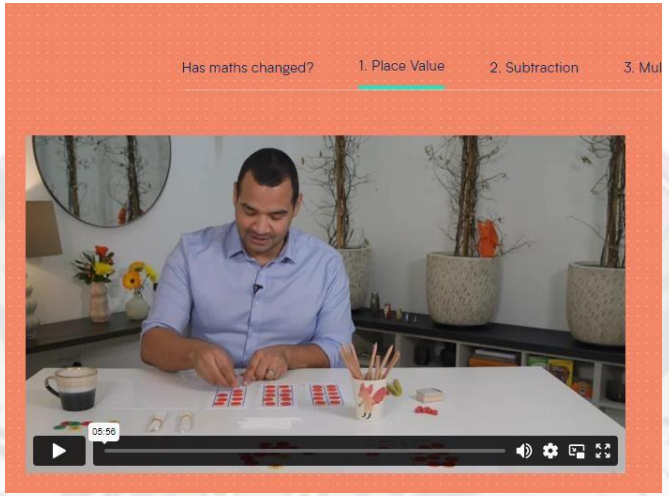
Division

Y5 Objectives
Divide 3-digit numbers by a 1-digit number (grouping)
Divide 4-digit numbers by a 1-digit number (grouping)
Multi-step problems

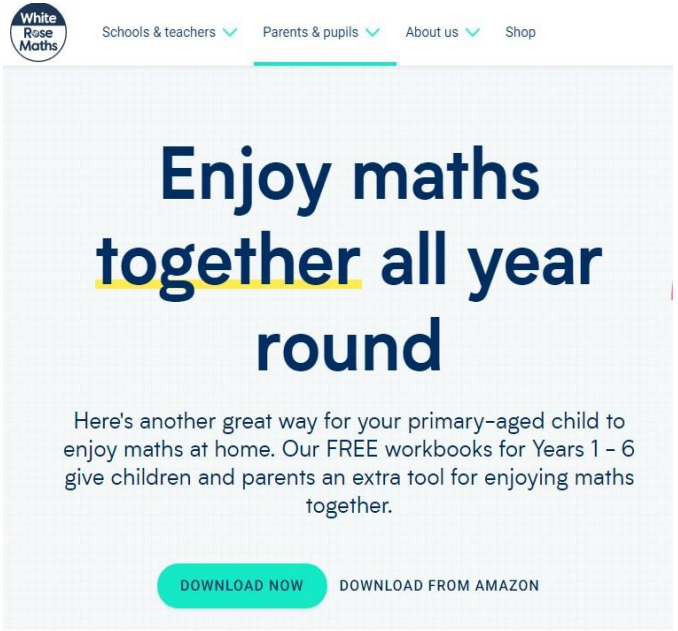
Skill: Divide 2-digits by 1-digit (grouping)	Year: 4/5
 52 ÷ 4 = 13	When using the short division method, children use grouping. Starting with the largest place value, they group by the divisor. Language is important here. Children should consider 'How many groups of 4 tens can we make?' and 'How many groups of 4 ones can we make?' Remainders can also be seen as they are left ungrouped.

Skill: Divide 4-digits by 1-digit (grouping)	Year: 5
 4 2 6 6 2 8 5 13 12 8,532 ÷ 2 = 4,266	Place value counters or plain counters can be used on a place value grid to support children to divide 4-digits by 1-digit. Children can also draw their own counters and group them through a more pictorial method. Children should be encouraged to move away from the concrete and pictorial when dividing numbers with multiple exchanges.

Supporting you child at home



[Parent resources | Maths workbooks | White Rose Education]



TIMES TABLES ROCK STARS