Maths Workshop

Year 3

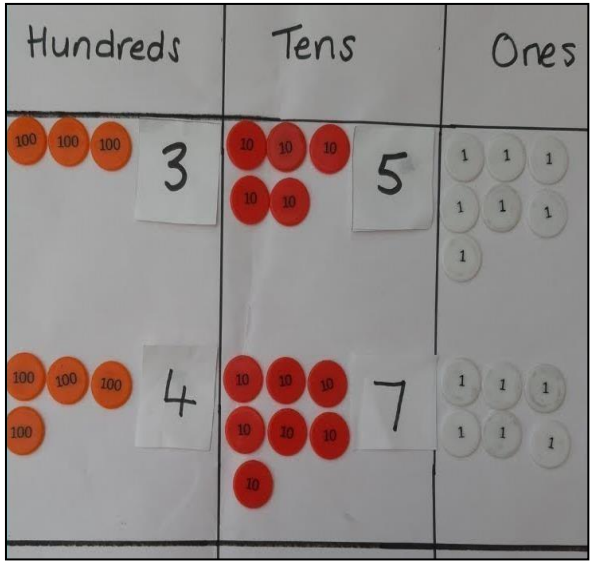
Aims of the session

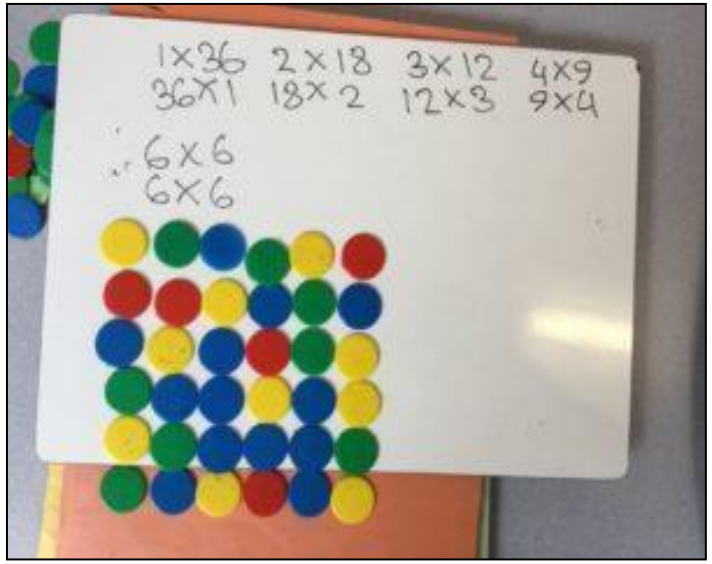
- To explain the concrete, pictorial and abstract approaches in maths
- What is a mastery approach
- To discuss the written calculation policy and how maths is taught at Wood Fold.
- Suggestions and ideas to support your child at home.

CPA Approach: Concrete, Pictorial and abstract

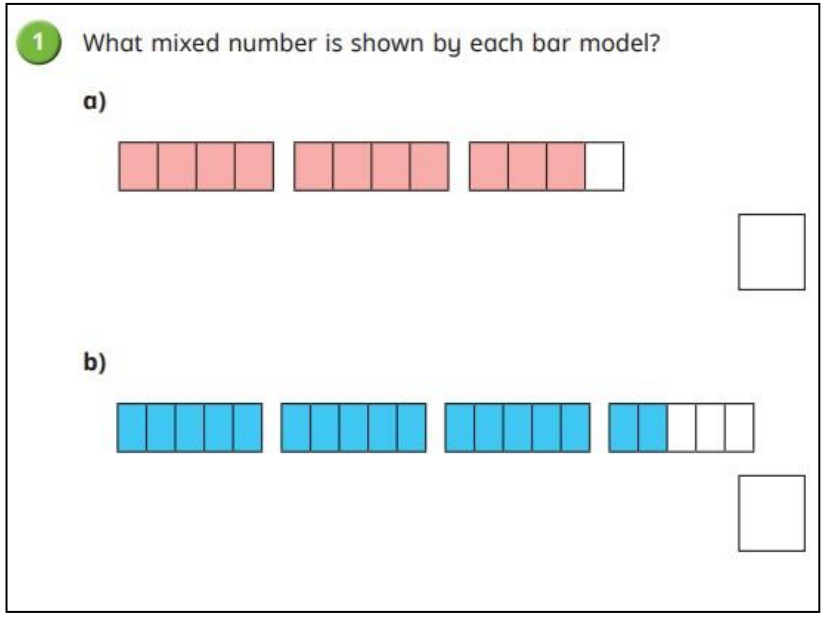
- Concrete – Doing the maths

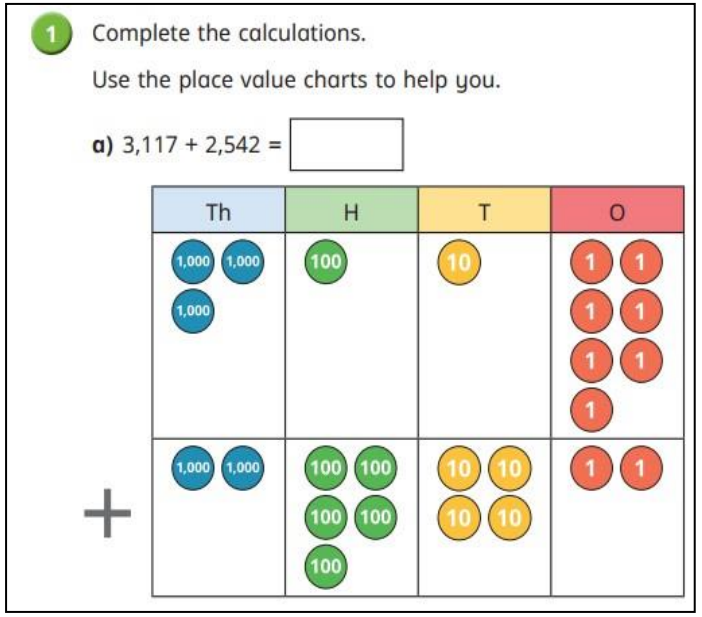
E.g. money, counters.



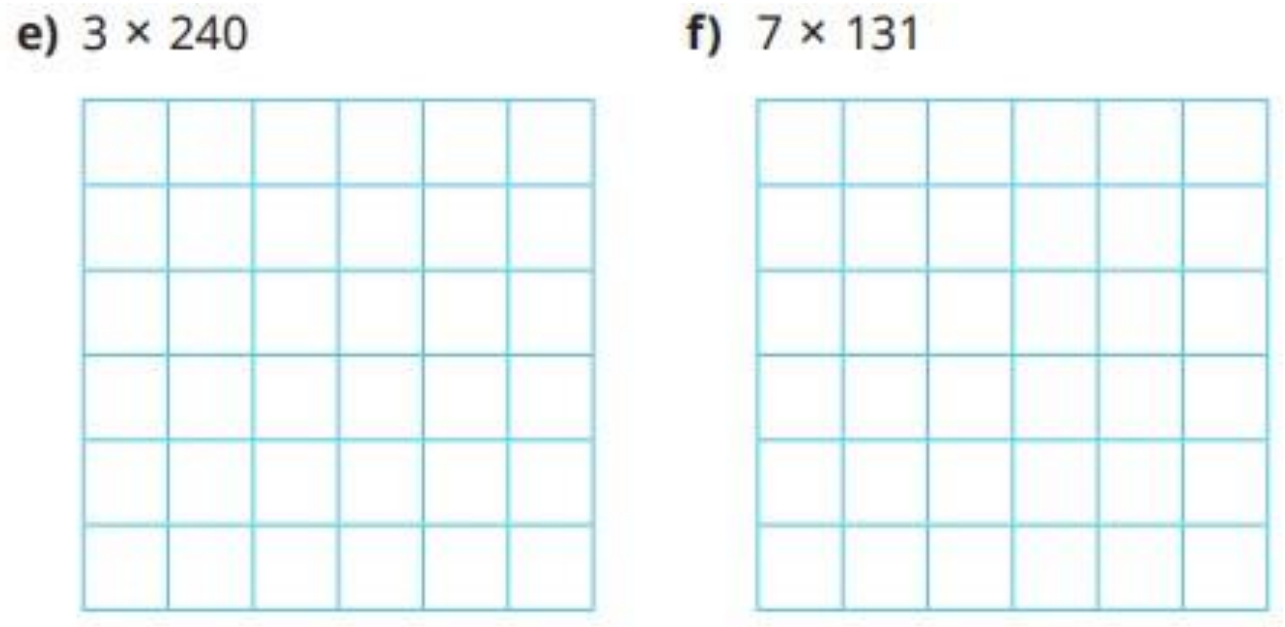


- **Pictorial: Seeing the maths**
- Making connections between the concrete and the pictorial representations and the pictorial and the abstract. E.g. part whole models, bar models, ten frames.

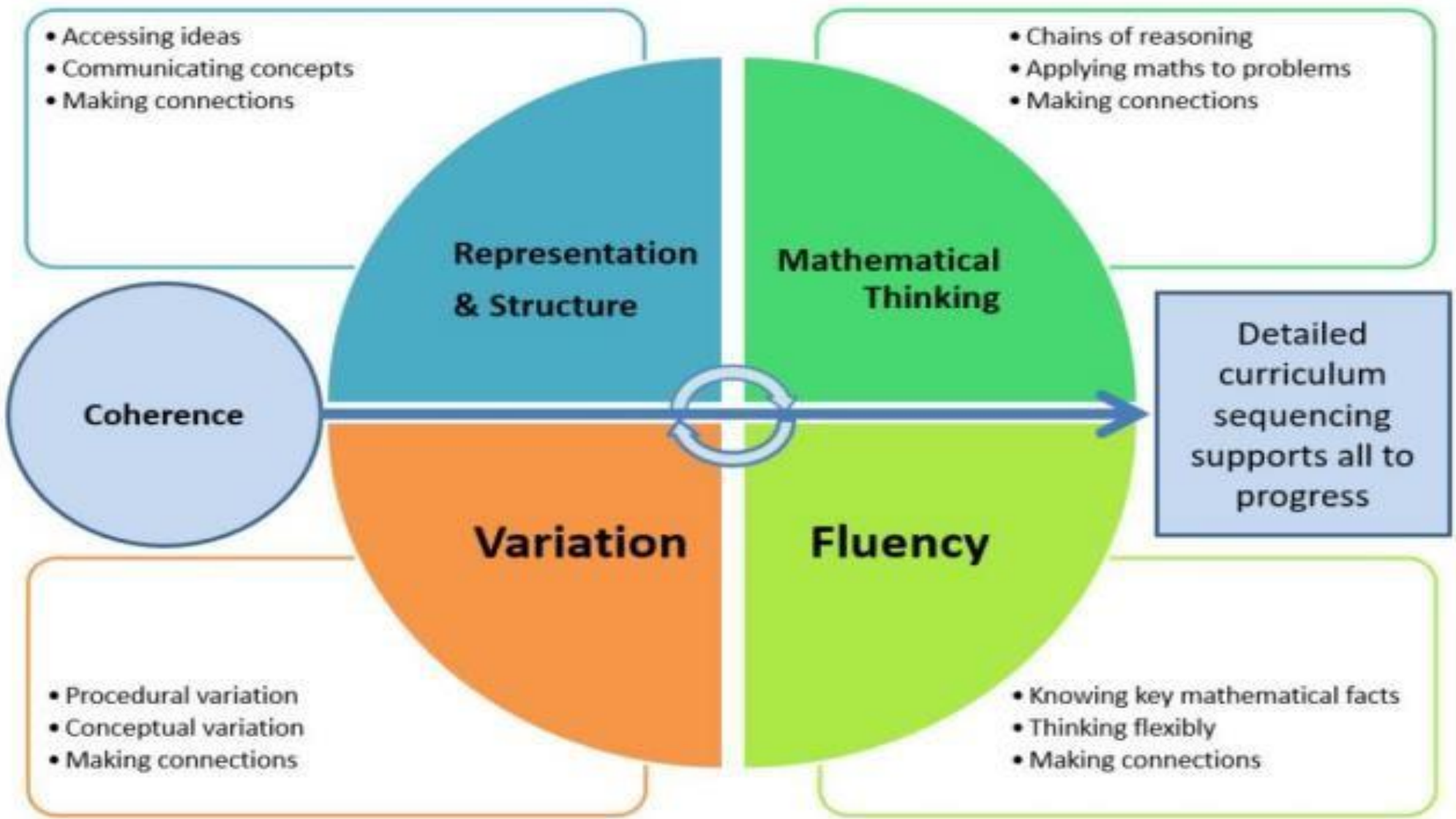




- **Abstract:** The final stage is for children to **understand abstract mathematical concepts, signs and notation**. When a child demonstrates with concrete models and pictorial representations that they have grasped a concept, we can be confident that they are ready to explore the abstract. At this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



Teaching for Mastery

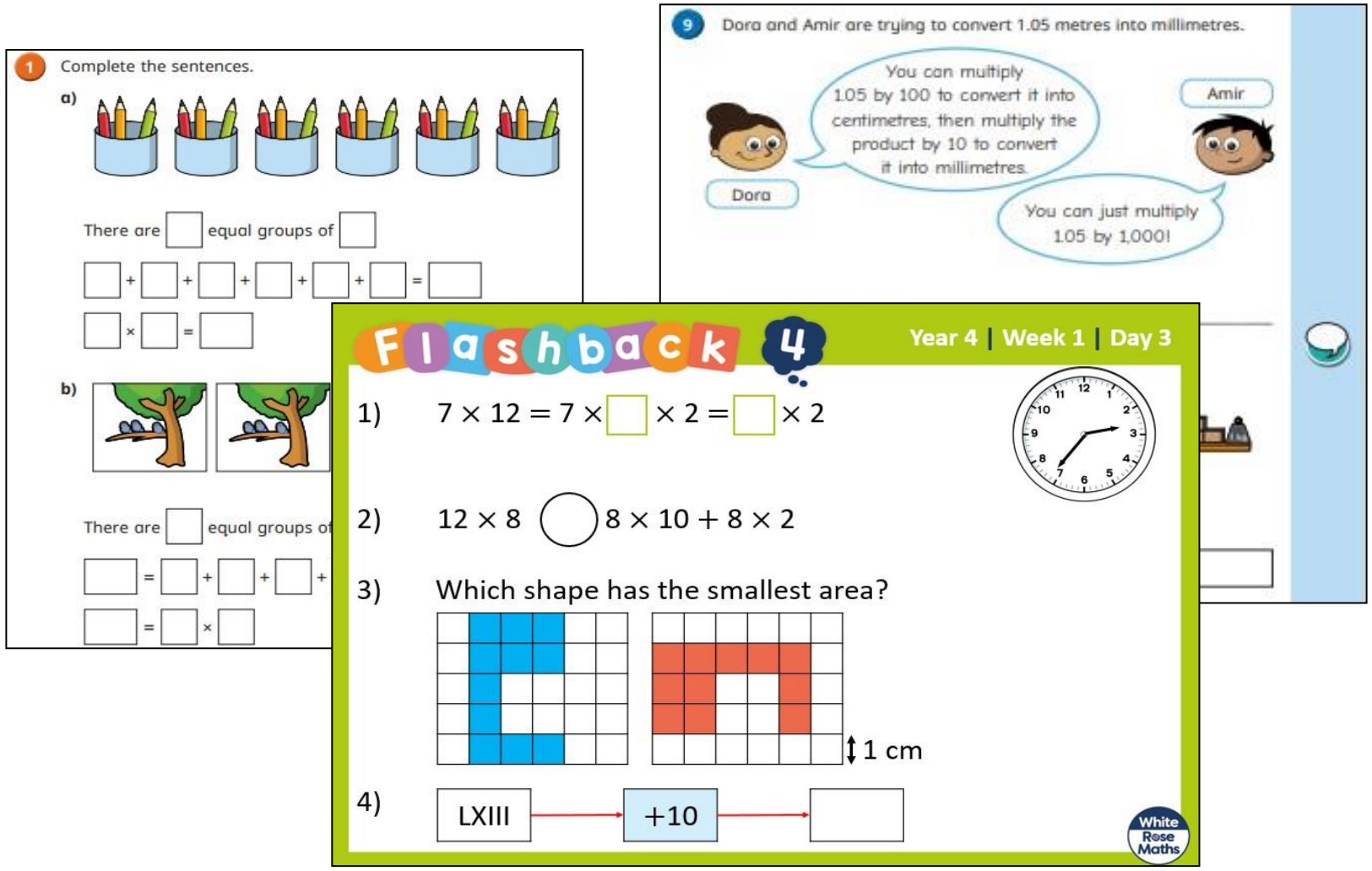


The Mastery Approach

- Mathematic teaching for mastery assumes **everyone can learn and enjoy mathematics.**
- Mathematical learning behaviours are developed such that pupils focus and engage as learners who reason and seek to **make connections.**
- Lesson design links **to prior learning** to ensure all can access the new learning and identifies **carefully sequenced steps** in progression to build secure understanding.
- **Practice and revisiting previous learning** is a vital part of our maths lessons.

- Pupils are taught through whole-class interactive teaching enabling all to master the concepts.
- In a typical lesson, the teacher leads back and forth interaction, including questioning, short tasks, explanation, demonstration, and discussion, enabling pupils to think, reason and apply their knowledge to solve problems.
- Use of precise mathematical language enables all pupils to communicate their reasoning and thinking effectively.
- Key number facts are learnt to automaticity, and other key mathematical facts are learned deeply and practised regularly, to avoid cognitive overload in working memory and enable pupils to focus on new learning.

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

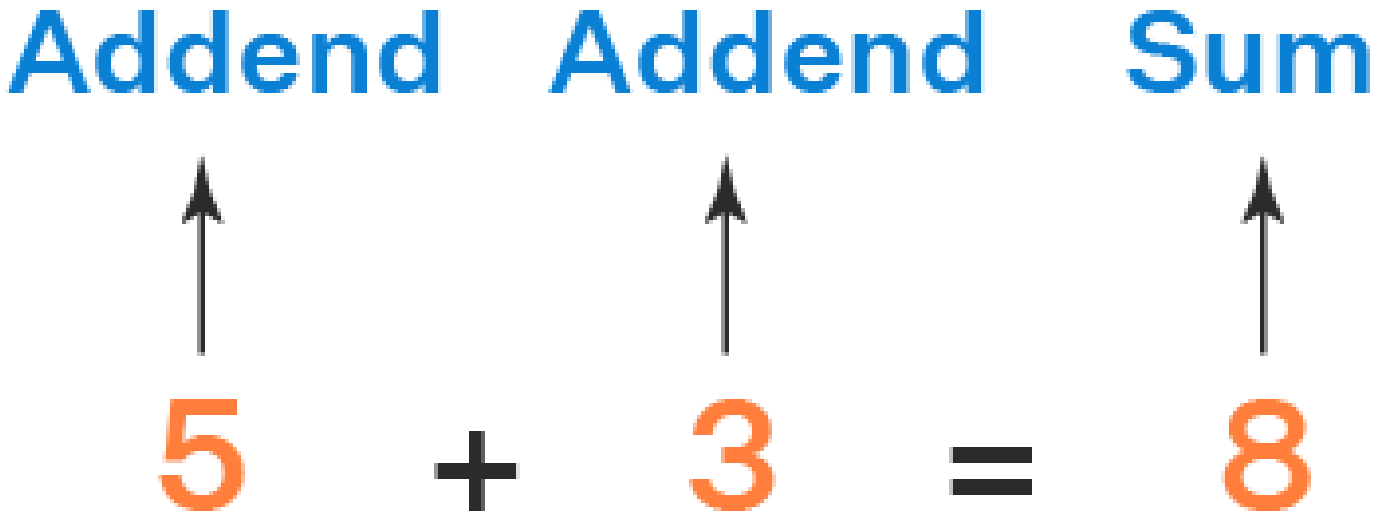


Addition

- Vocabulary

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

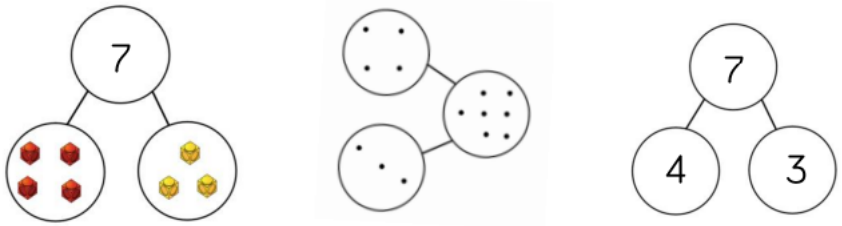
addend



Addition in Year 3

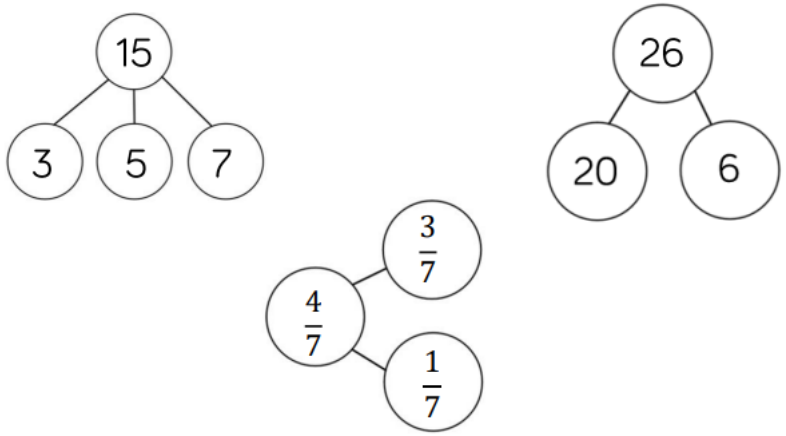
Y3 Objectives
Adding 2 and 3-digit numbers
Finding change
Duration of time
Finding the perimeter
Adding fractions
Adding mass and capacity

Partitioning with the Part-Whole Model



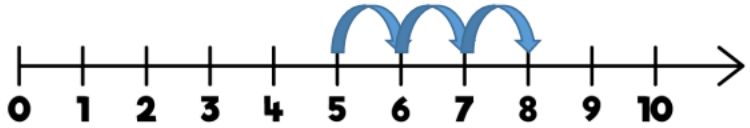
$7 = 4 + 3$
$7 = 3 + 4$

$7 - 3 = 4$
$7 - 4 = 3$

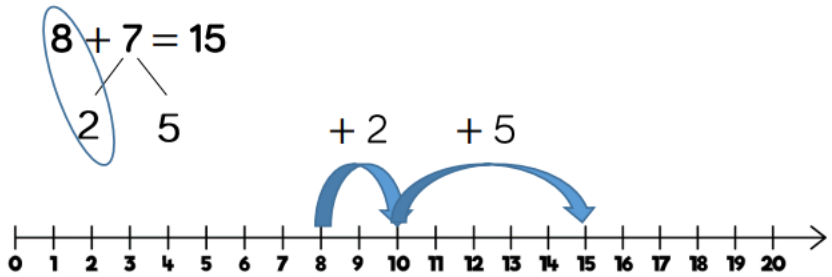


Number lines

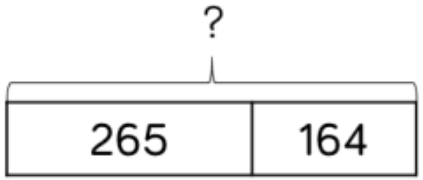
$5 + 3 = 8$



$8 + 7 = 15$



Bar Model

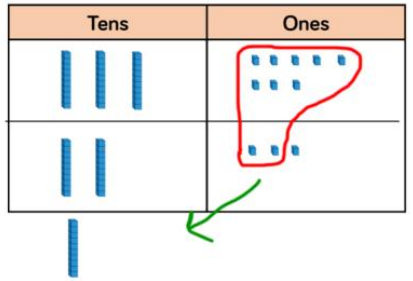


Column Addition

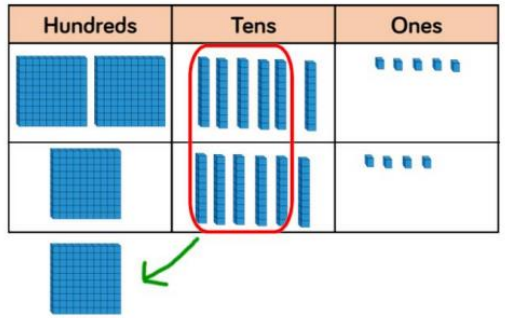
Add numbers up to 3 digits.
Use of compact column method.

Add the ones first, carry numbers underneath the bottom line, remind pupils of actual value eg, 3 tens add 7 tens.

$$\begin{array}{r} 236 \\ +\ 73 \\ \hline 309 \\ {\scriptstyle 1} \end{array}$$



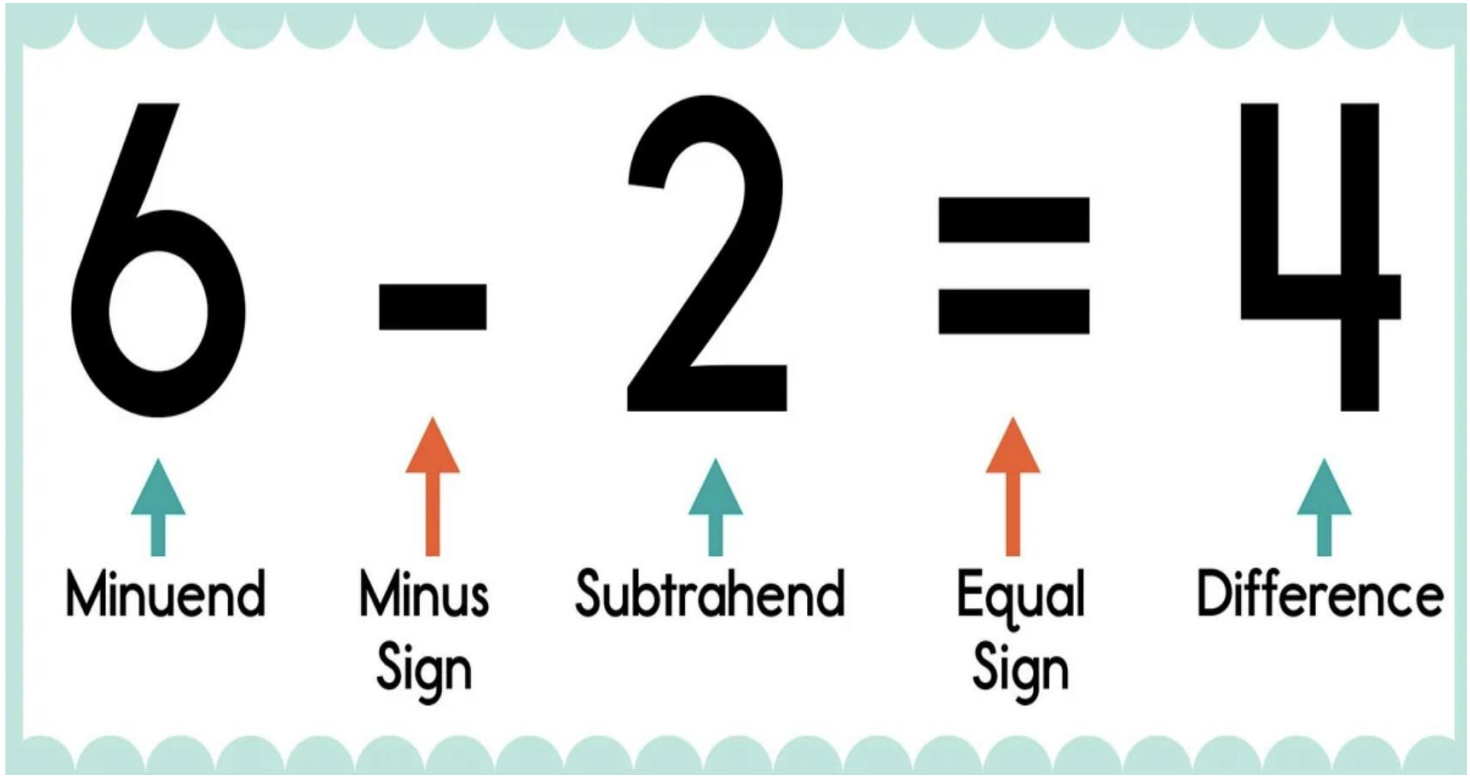
$$\begin{array}{r} 38 \\ +\ 23 \\ \hline 61 \\ {\scriptstyle 1} \end{array}$$



$$\begin{array}{r} 265 \\ +\ 164 \\ \hline 429 \\ {\scriptstyle 1} \end{array}$$

Subtraction

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



Y3 Objectives

Subtracting 2 and 3-digit numbers

Finding change

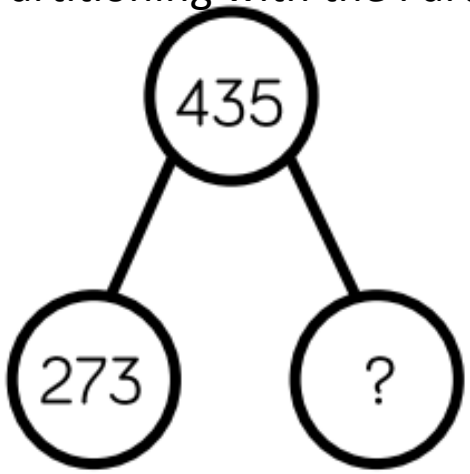
Finding the perimeter

Subtracting fractions

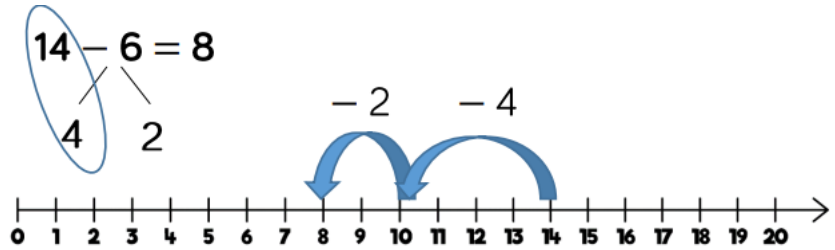
Subtracting mass and capacity

Subtraction in Year 3

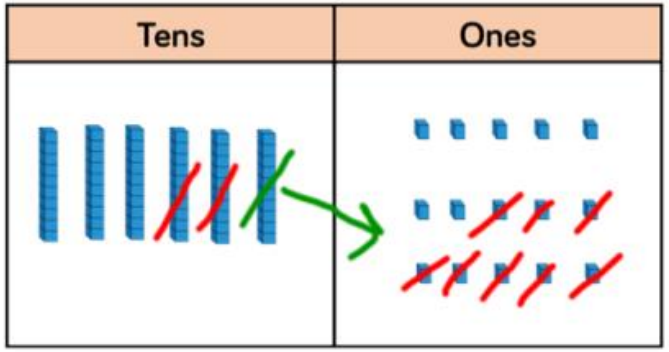
Partitioning with the Part-Whole Model



Number lines

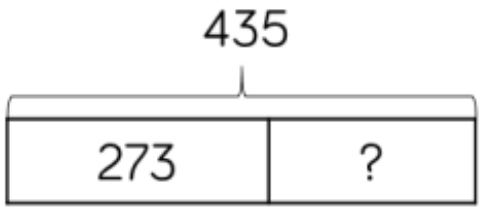


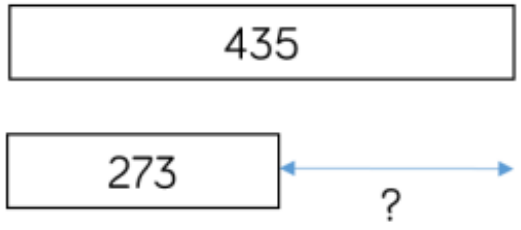
Column Subtraction

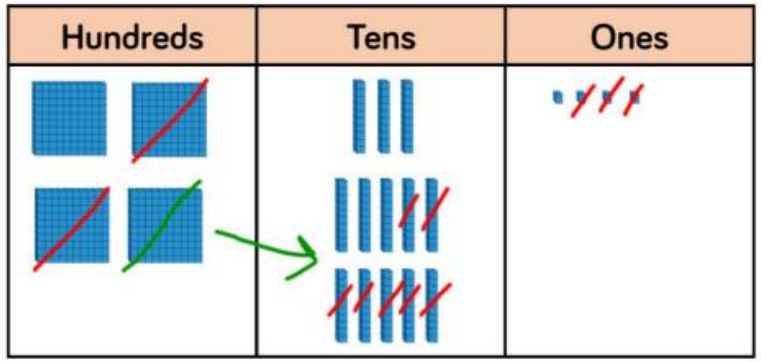


$$\begin{array}{r} {}^{5}\cancel{6}{}^{1}\cancel{5} \\ -\ 28 \\ \hline 37 \end{array}$$

Bar Model



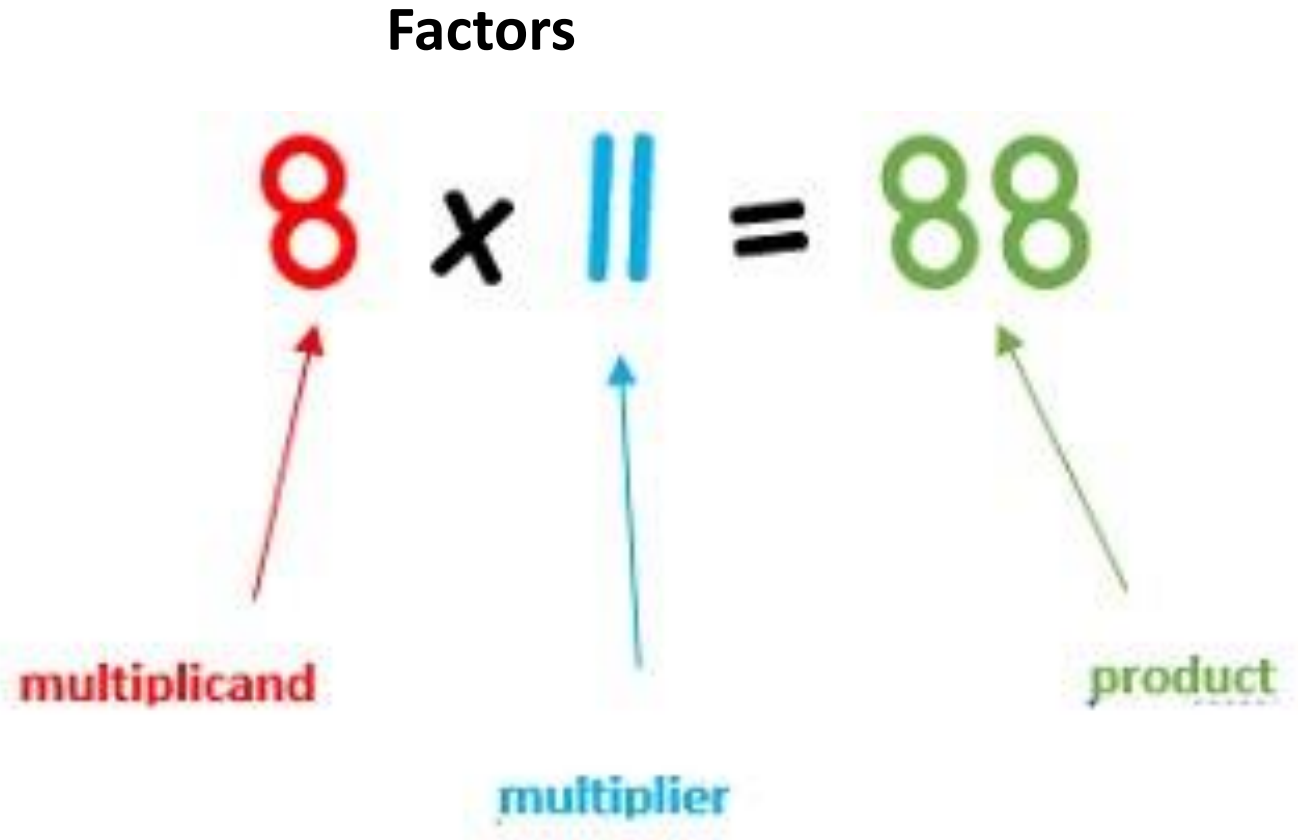




$$\begin{array}{r} {}^{3}\cancel{4}{}^{1}\cancel{3}5 \\ -\ 273 \\ \hline 262 \end{array}$$

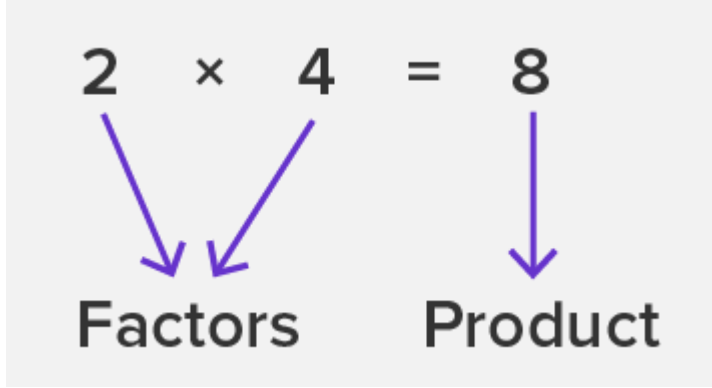
Multiplication

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

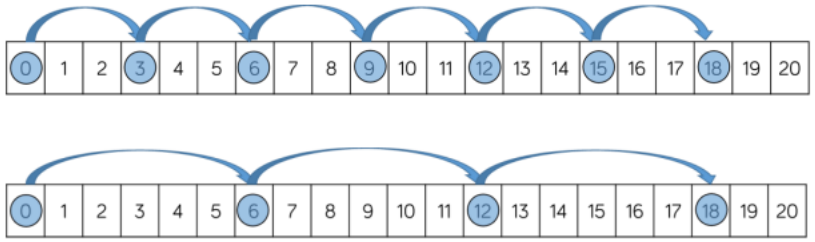


Multiplication in Year 3

Y3 Objectives
Focus:
3, 4 and 8 Times tables
Finding Perimeter
Multiply 2-digit by 1-digit
Mass and Capacity
Statistics

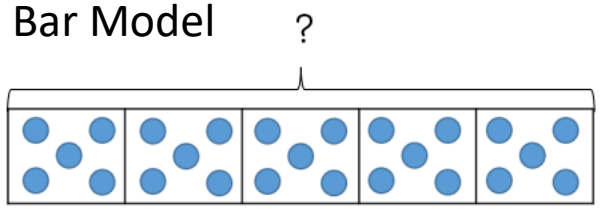


Number tracks

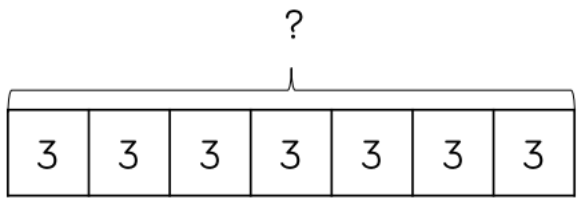


$6 \times 3 = 18$
$3 \times 6 = 18$

Bar Model

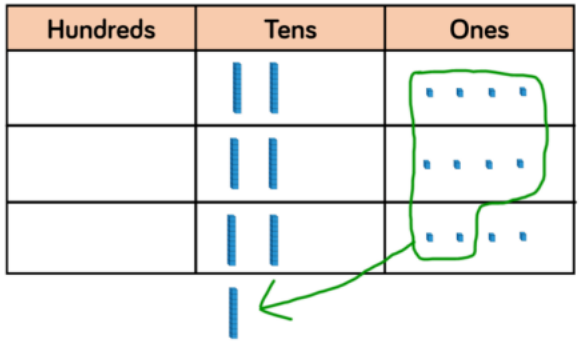


$5 \times 5 = 25$



$3 \times 7 = 21$
$7 \times 3 = 21$

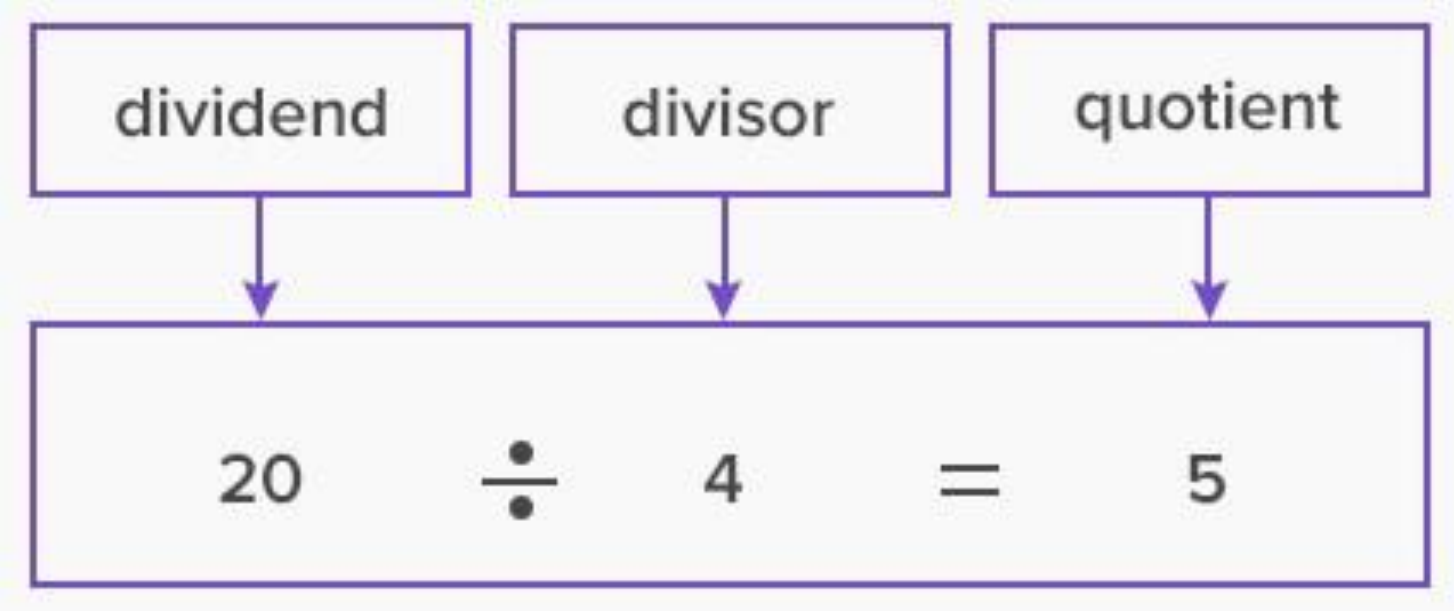
Column Addition



$$\begin{array}{r} 24 \\ \times\ 3 \\ \hline 72 \\ \hline 1 \end{array}$$

Division

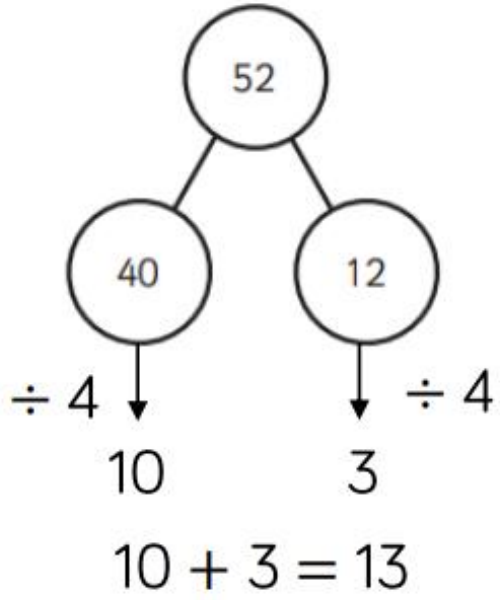
- Vocabulary
- Halve, share, share equally, group in…, groups of, divide, division, dividend, divided by, divisible by, inverse, quotient



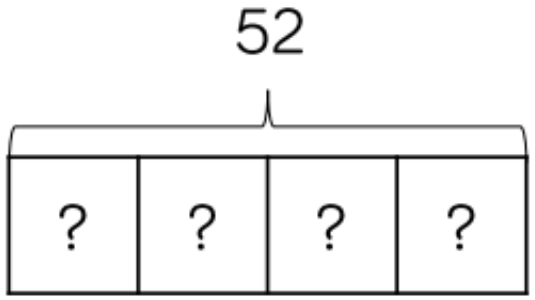
Division in Year 3

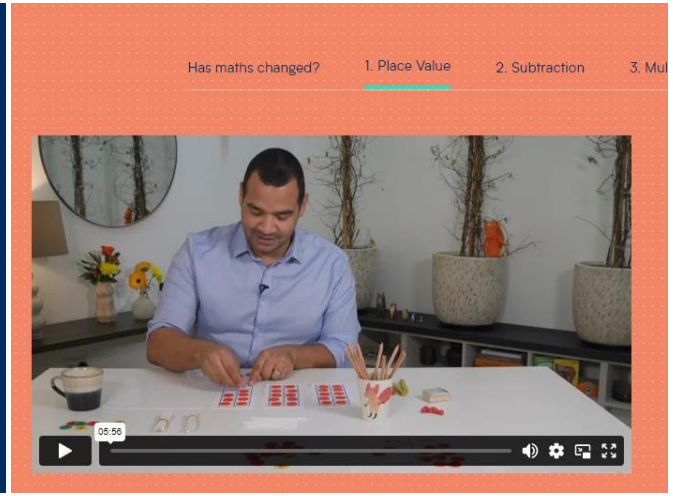
Sharing

Partitioning with multiples



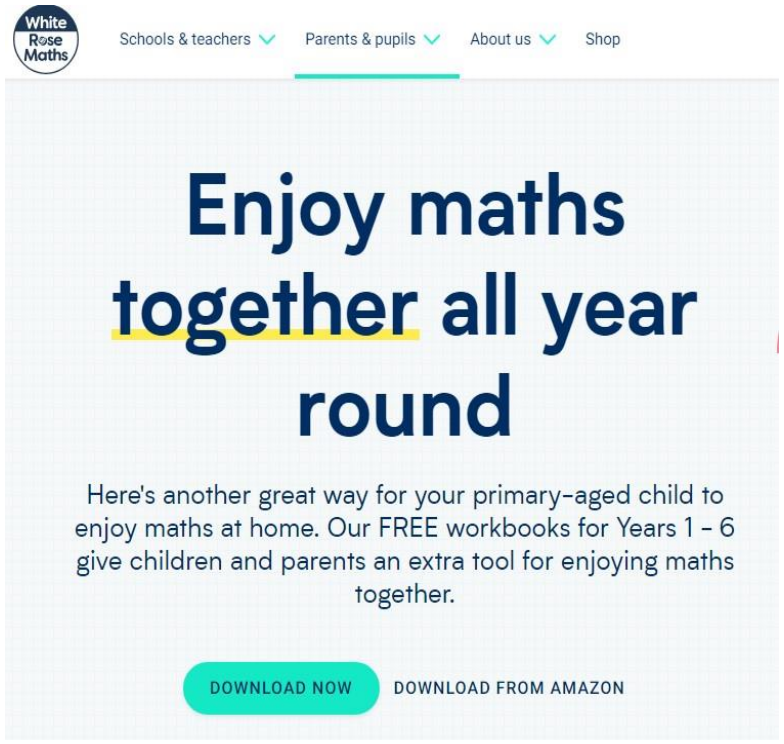
Bar Model





Supporting at Home

https://whiteroseeducation.com/parent-pupil-resources/maths/free-downloads



TIMES TABLES ROCK STARS

can develop their mathematical skills to the full.

'Mathematics is not about numbers, equations, computa about understanding.' William Paul Thurston.

Please click on this link for Maths Strategies

Files to Download

- Addition and Subtraction Calculation Policy
- Maths Curriculum Overview
- Maths Policy
- Multiplication and Division Calculation Policy
- White Rose Maths Pathways
- Written Strategies

Community
Context for Learning
Educational Trips
Forest School
Long Term Plans
SEND
Subject
Art
Computing
Design Technology (DT)
English
Geography
History
Maths
Music