



YEAR 2 MATHS WORKSHOP

Mrs Wilcock & Mrs Morris

AIMS OF THE SESSION:

- To explain the concrete, pictorial and abstract approaches in maths
- To share the Wood Fold Maths sequence
- To discuss the written calculation policy
- To offer suggestions and ideas to support your child at home.



CPA APPROACH:

Concrete, Pictorial and Abstract

Concrete:

Doing the maths



CPA APPROACH:

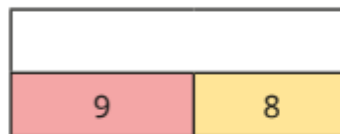
Concrete, Pictorial and Abstract

Pictorial:

Seeing the maths

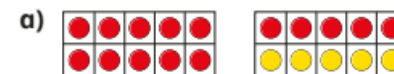
Making connections between the concrete and the pictorial representations and the pictorial and the abstract. E.g. part whole models, bar models, ten frames.

There are 9 boys and 8 girls in a class.
Complete the bar model to show this.

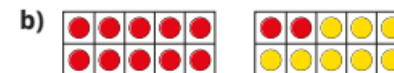


Write the fact family for the bar model.

- 1 What number bonds to 20 are shown?
The first one has been done for you.



$$15 + 5 = 20$$



$$\square + \square = \square$$



$$\square + \square = \square$$

CPA APPROACH:

Concrete, Pictorial and Abstract

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.

5 Tick any incorrect calculations.

$$3 + 7 = 10$$

$$10 = 3 + 7$$

$$7 + 3 = 10$$

$$10 = 7 + 3$$

$$10 - 7 = 3$$

$$7 - 3 = 10$$

$$3 - 10 = 7$$

$$7 = 10 - 3$$

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.

Flashback 4

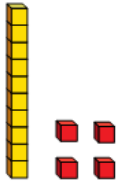
Year 2 | Week 5 | Day 1

1) 6, 8, 10, 12,

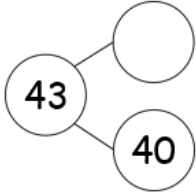
2) Use $<$, $>$ or $=$ to compare the candles.

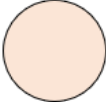
3) What is the missing part?

4) What is the mathematical name for this shape?











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 5th day they will complete a quiz.

Day 1

Example	20+6=
Q1	30+4=
Q2	50+5=
Q3	40+9=
Q4	60+7=
Recall Calculation	1 ten 9 ones ... 19

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 questions.

By the end of Year 2 the children are expected to know the following times tables:

x2, x5 and x10

2 STAGE 5 BLOCK 2 STEP 5



The 2 times-table

Complete the calculations.

1



$$4 \times 2 = \square$$

2



$$8 \times 2 = \square$$

3



$$\square = 2 \times 2$$

4



$$\square = 7 \times 2$$

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.

$$1) 10 = \square + 8$$

$$2) 1 + \square = 10$$

$$3) \begin{array}{cccc} \color{red}\blacksquare & \color{red}\blacksquare & \color{red}\blacksquare & \color{red}\blacksquare \end{array} + \begin{array}{cccc} \color{red}\blacksquare & \color{red}\blacksquare & \color{red}\blacksquare & \color{red}\blacksquare \end{array} =$$

$$4) \begin{array}{cccc} \color{yellow}\blacksquare & \color{yellow}\blacksquare & \color{yellow}\blacksquare & \color{yellow}\blacksquare \\ \color{yellow}\blacksquare & \color{yellow}\blacksquare & \color{yellow}\blacksquare & \color{yellow}\blacksquare \\ \color{yellow}\blacksquare & \color{yellow}\blacksquare & \color{yellow}\blacksquare & \color{yellow}\blacksquare \\ \color{yellow}\blacksquare & \color{yellow}\blacksquare & \color{yellow}\blacksquare & \color{yellow}\blacksquare \end{array} + \begin{array}{cccc} \color{yellow}\blacksquare & \color{yellow}\blacksquare & \color{yellow}\blacksquare & \color{yellow}\blacksquare \\ \color{yellow}\blacksquare & \color{yellow}\blacksquare & \color{yellow}\blacksquare & \color{yellow}\blacksquare \\ \color{yellow}\blacksquare & \color{yellow}\blacksquare & \color{yellow}\blacksquare & \color{yellow}\blacksquare \\ \color{yellow}\blacksquare & \color{yellow}\blacksquare & \color{yellow}\blacksquare & \color{yellow}\blacksquare \end{array} =$$

NEW LEARNING:

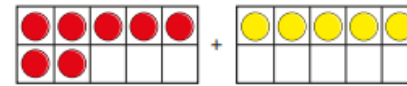
The main body of the lesson will be taught by teachers, focusing on the individual learning elements of the curriculum.

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.

Add by making 10

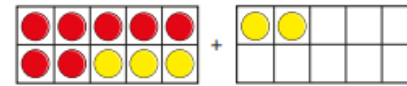
White Rose
MATHS

- 1 a) What addition is shown on the ten frames?



$$\square + \square$$

Jo moves some counters to help her add 7 and 5



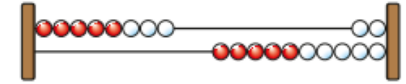
- b) Complete the addition shown now.

$$10 + \square$$

- c) Complete the addition.

$$7 + 5 = 10 + \square = \square$$

- 2 Mo uses a Rekenrek to work out $8 + 4$

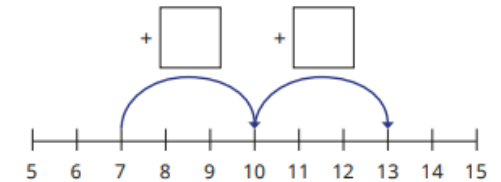


How many does Mo need to push to get to 10?

How many more does Mo need to push to find the answer?

What is $8 + 4$?

- 3 Sam uses a number line to work out $7 + 6$. Complete Sam's workings.



$$7 + 6 = \square$$

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PROBLEM SOLVING & REASONING:

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

Sam needs 100 balloons.



I have some balloons, but I need 30 more.

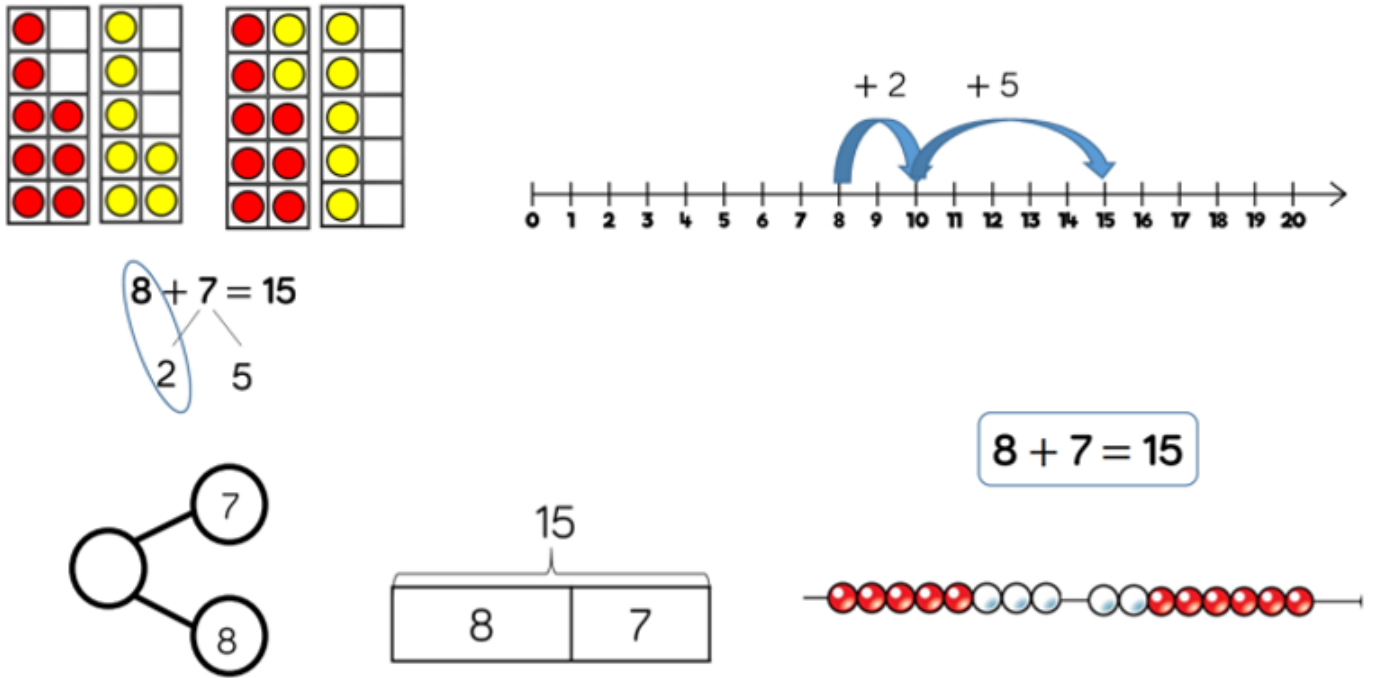
How many balloons does Sam have?
How do you know?



ADDITION:

Vocabulary:

- Add
- Addition
- More
- Plus
- Increase sum,
- Total, altogether
- How many more to make...?

Skill: Add 1 and 2-digit numbers to 20	Year: 2
 The composite image illustrates the addition $8 + 7 = 15$ using multiple methods: Grids: Four ten-frame grids. The first two show 8 red dots and 7 yellow dots. The last two show 15 yellow dots. Number Line: A number line from 0 to 20. A blue arrow starts at 8 and jumps to 10, labeled "+ 2". Another blue arrow starts at 10 and jumps to 15, labeled "+ 5". Equation: $8 + 7 = 15$ with a blue oval around the 8 and a line connecting it to a 2 below it, and another line connecting the 7 to a 5 below it. Tree Diagram: A circle with two branches leading to circles labeled 7 and 8. Partitioned Box: A rectangle divided into two sections labeled 8 and 7, with 15 written above it. Equation: $8 + 7 = 15$ inside a blue rounded rectangle. Bead String: A string of 15 beads, with 8 red beads and 7 white beads.	When adding one-digit numbers that cross 10, it is important to highlight the importance of ten ones equalling one ten. Different manipulatives can be used to represent this exchange. Use concrete resources alongside number lines to support children in understanding how to partition their jumps.

ADDITION:

Skill: Add two 2-digit numbers to 100	Year: 2														
<table border="1"><thead><tr><th>Tens</th><th>Ones</th></tr></thead><tbody><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr></tbody></table> $\begin{array}{r} 38 \\ + 23 \\ \hline 61 \\ 1 \end{array}$ <table border="1"><thead><tr><th>Tens</th><th>Ones</th></tr></thead><tbody><tr><td>10 10 10</td><td>1 1 1 1 1 1 1 1</td></tr><tr><td>10 10</td><td>1 1 1</td></tr></tbody></table> +2 +21 38 40 61 38 + 23 = 61 ? <table border="1"><tr><td>38</td><td>23</td></tr></table> 38 23	Tens	Ones					Tens	Ones	10 10 10	1 1 1 1 1 1 1 1	10 10	1 1 1	38	23	At this stage children to use the formal column method when calculating alongside base 10 or place value counters. Children can also use a blank number line to count on to find the total. Encourage them to jump to multiples of 10 to become more efficient.
Tens	Ones														
Tens	Ones														
10 10 10	1 1 1 1 1 1 1 1														
10 10	1 1 1														
38	23														

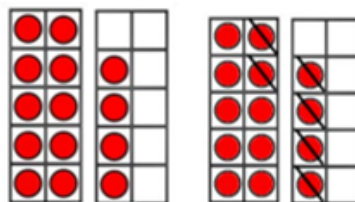
SUBTRACTION:

Vocabulary:

- Subtract
- Subtraction
- Take (away)
- Minus
- Decrease
- How many are left/leftover?
- Difference
- How many more/fewer is... than...?

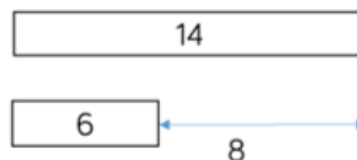
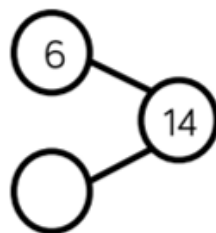
Skill: Subtract 1 and 2-digit numbers to 20

Year: 2

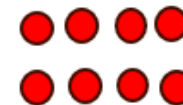


$$14 - 6 = 8$$

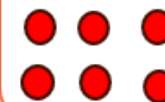
Diagram showing 14 as a bond of 10 and 4, with 6 subtracted from the 10, leaving 4 and the original 4, totaling 8.



$$14 - 6 = 8$$



Take away mat



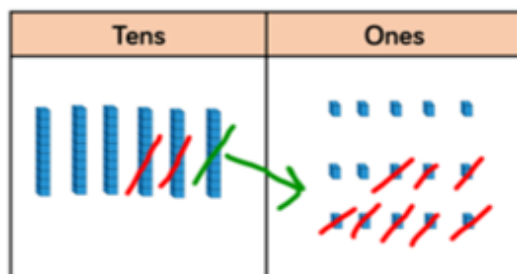
When subtracting one-digit numbers that cross 10, it is important to highlight the importance of ten ones equalling one ten.

Children should be encouraged to find the number bond to 10 when partitioning the subtracted number. Ten frames, number shapes and number lines are particularly useful for this.

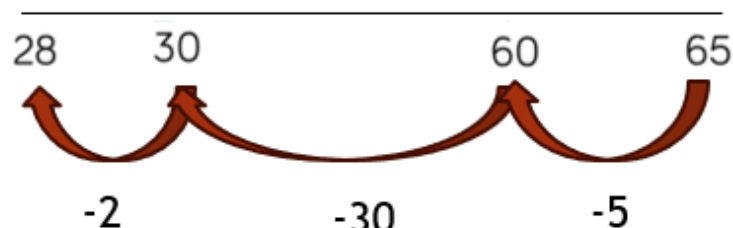
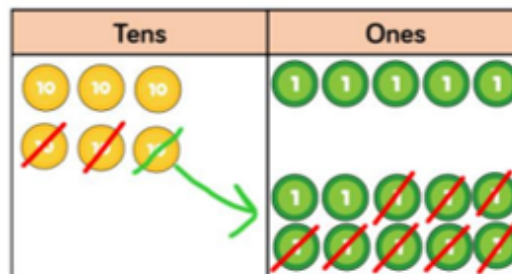
SUBTRACTION:

Skill: Subtract 1 and 2-digit numbers to 100

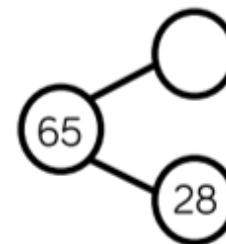
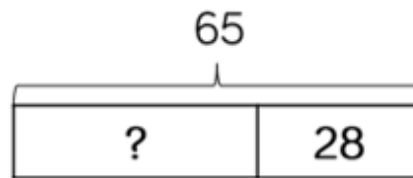
Year: 2



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



$$65 - 28 = 37$$



At this stage, encourage children to use the formal column method when calculating alongside base 10 or place value counters.

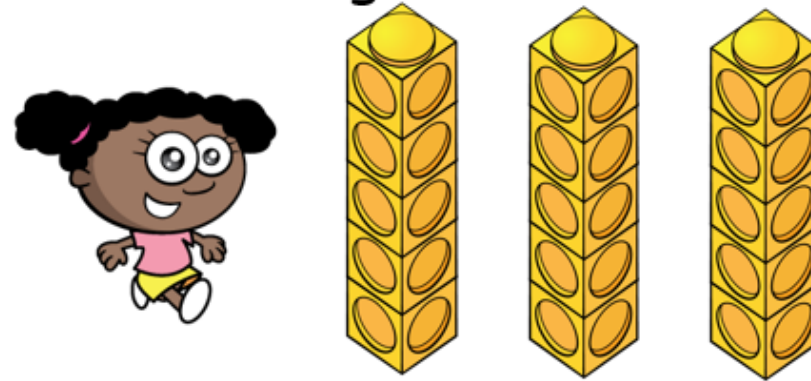
Children can also use a blank number line to count on to find the difference. Encourage them to jump in multiples of 10 to become more efficient.

MULTIPLICATION:

Vocabulary:

- Lots of
- Groups of
- Multiply
- Multiplication
- Multiplied by
- Multiple of
- Product
- Factors

Whitney has also been building towers using cubes.



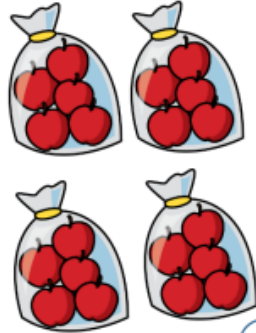
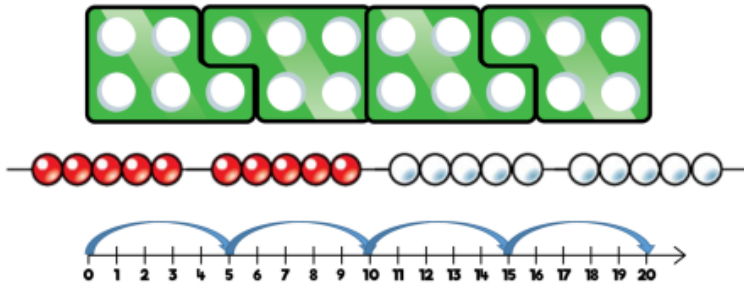
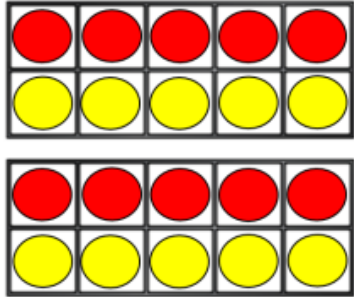
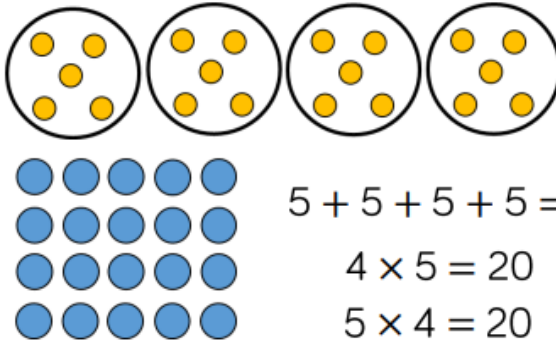
How many towers has she built? 3

How many cubes are in each tower? 5

How many cubes has she used in total? 15

$$\boxed{3} \times \boxed{5} = \boxed{15} \quad \text{or} \quad \boxed{5} \times \boxed{3} = \boxed{15}$$

MULTIPLICATION:

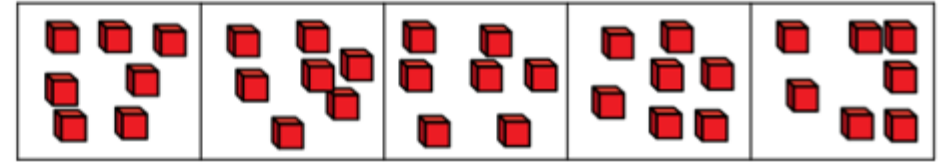
Skill: Solve 1-step problems using multiplication	Year: 1/2
  One bag holds 5 apples. How many apples do 4 bags hold?   $5 + 5 + 5 + 5 = 20$$4 \times 5 = 20$$5 \times 4 = 20$	Children represent multiplication as repeated addition in many different ways. In Year 1, children use concrete and pictorial representations to solve problems. They are not expected to record multiplication formally. In Year 2, children are introduced to the multiplication symbol.

DIVISION:

Vocabulary:

- Halve
- Share
- Share equally
- Group in...
- Groups of
- Divide
- Division
- Dividend
- Divided by
- Divisible by

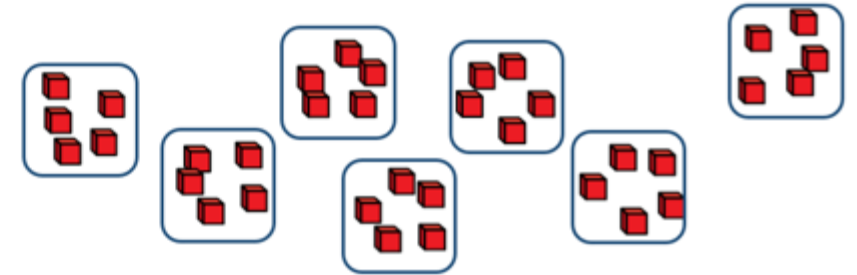
Sharing



There are 7 cubes in each group.

$$35 \div 5 = 7$$

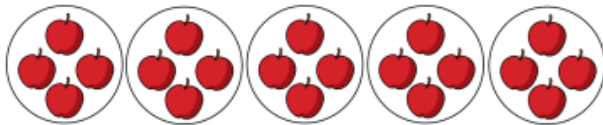
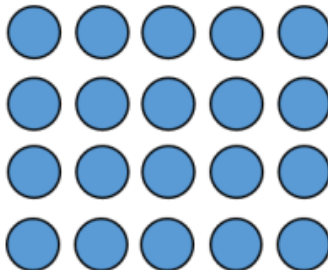
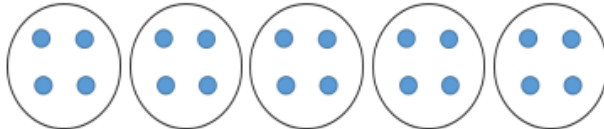
Grouping



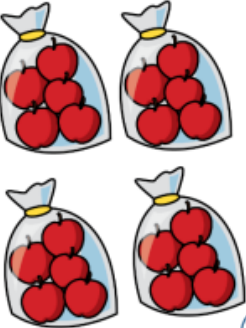
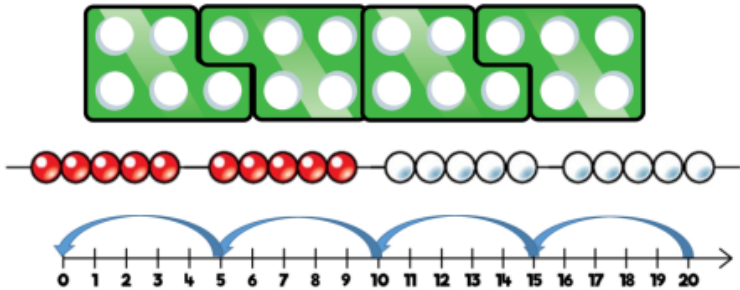
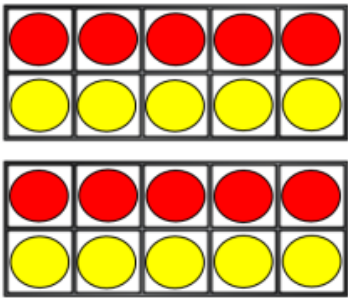
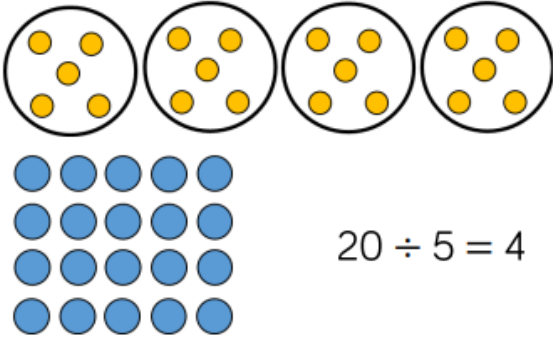
There are 7 groups of 5

$$35 \div 5 = 7$$

DIVISION:

Skill: Solve 1-step problems using multiplication (sharing)	Year: 1/2					
 20 <table><tr><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td></tr></table> There are 20 apples altogether. They are shared equally between 5 bags. How many apples are in each bag?   $20 \div 5 = 4$	?	?	?	?	?	Children solve problems by sharing amounts into equal groups. In Year 1, children use concrete and pictorial representations to solve problems. They are not expected to record division formally. In Year 2, children are introduced to the division symbol.
?	?	?	?	?		

DIVISION:

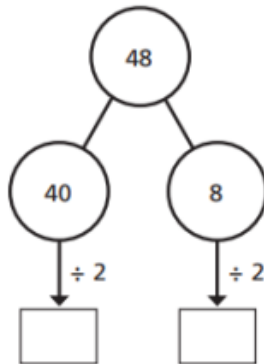
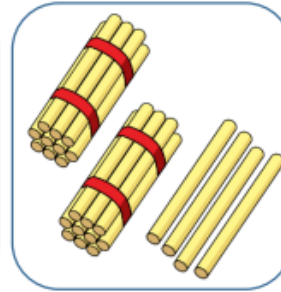
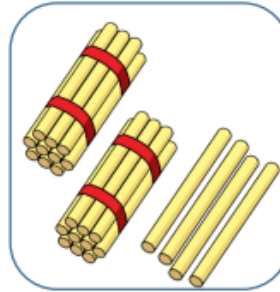
Skill: Solve 1-step problems using division (grouping)	Year: 1/2
  There are 20 apples altogether. They are put in bags of 5. How many bags are there?   $20 \div 5 = 4$	Children solve problems by grouping and counting the number of groups. Grouping encourages children to count in multiples and links to repeated subtraction on a number line. They can use concrete representations in fixed groups such as number shapes which helps to show the link between multiplication and division.

DIVISION:

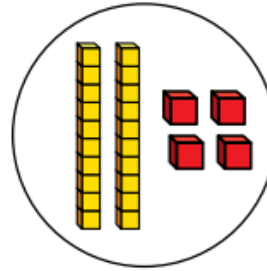
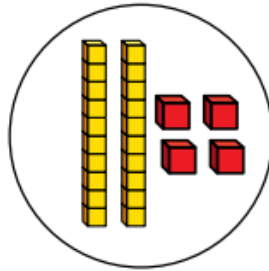
Skill: Divide 2-digits by 1-digit (sharing with no exchange)

Year: 1/2

Tens	Ones
10 10	1 1 1 1
10 10	1 1 1 1



$$48 \div 2 = 24$$



When dividing larger numbers, children can use manipulatives that allow them to partition into tens and ones.

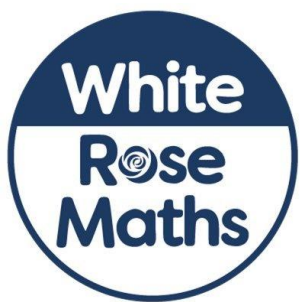
Straws, Base 10 and place value counters can all be used to share numbers into equal groups.

Part-whole models can provide children with a clear written method that matches the concrete representation.



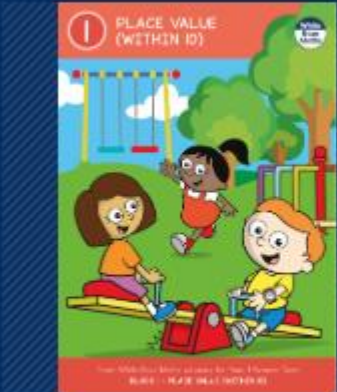
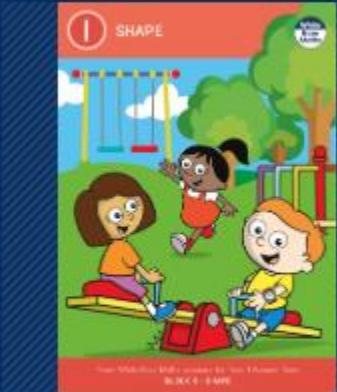
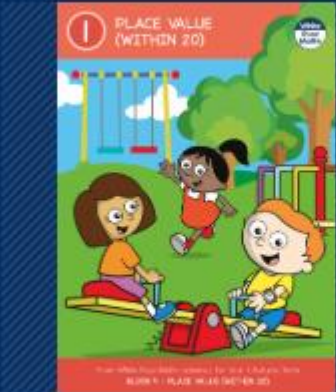
SUPPORTING AT HOME:





White Rose parent workbooks for Years 1 - 6 give children and parents an extra tool for enjoying maths together.

If you would like these to support any topics/units, please speak directly to your child's class teacher.

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
					
Autumn Block 1 Place value (within 10)	Autumn Block 2 Addition and subtraction (within 10)	Autumn Block 3 Shape	Autumn Block 4 Place value (within 20)	Spring Block 1 Addition and subtraction (within 20)	

Telling the time

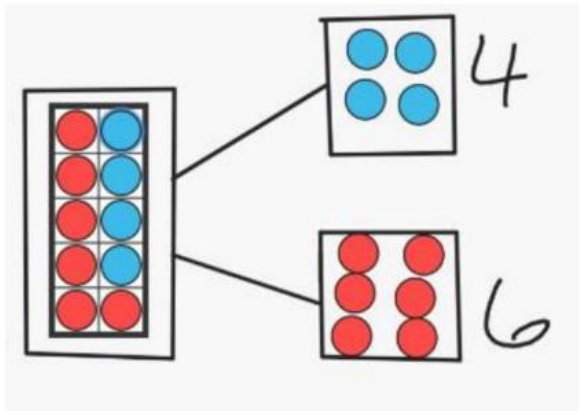
In Year 2, the children will be learning to:

- Tell the time to o'clock, half past, quarter past and quarter to.
- Tell the time to the nearest 5 minutes.
- To know how many minutes are in an hour and how many hours are in a day.



Number bonds

In Year 2, the children need to be able to quickly recall the number bonds to 10, 20 and 100.



$$\begin{array}{r} 4 \\ \hline \end{array} + \begin{array}{r} 6 \\ \hline \end{array} = \begin{array}{r} 10 \\ \hline \end{array}$$

$$\begin{array}{r} 10 \\ \hline \end{array} = \begin{array}{r} 4 \\ \hline \end{array} + \begin{array}{r} 6 \\ \hline \end{array}$$

$$\begin{array}{r} 10 \\ \hline \end{array} - \begin{array}{r} 4 \\ \hline \end{array} = \begin{array}{r} 6 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ \hline \end{array} = \begin{array}{r} 10 \\ \hline \end{array} - \begin{array}{r} 4 \\ \hline \end{array}$$





QUESTIONS

The word "QUESTIONS" is centered in a large, white, bold, sans-serif font. It is surrounded by a cluster of overlapping squares in various shades of blue and green. The squares vary in size and opacity, creating a dynamic, layered effect. The entire graphic is set against a plain white background.