



Maths Workshop

Year 2

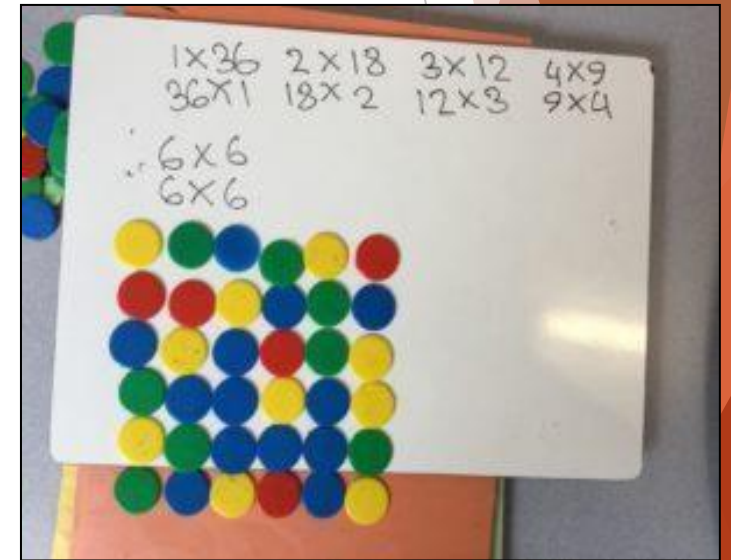
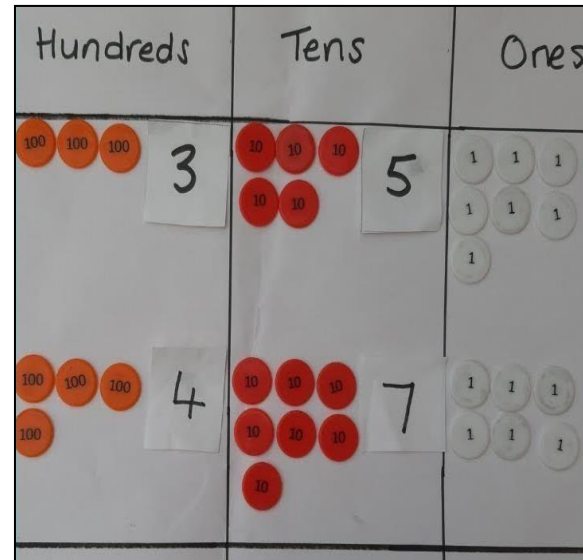
Aims of the session

- ▶ To explain the concrete, pictorial and abstract approaches in maths.
- ▶ 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.

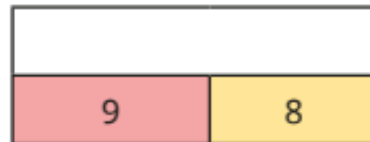
1 What number bonds to 20 are shown?
The first one has been done for you.

a) 
 $15 + 5 = 20$

b) 
 + =

c) 
 + =

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.

- **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.

$$3 + 7 = 10$$

$$10 = 3 + 7$$

$$7 + 3 = 10$$

$$10 = 7 + 3$$

$$10 - 7 = 3$$

$$7 - 3 = 10$$

$$3 - 10 = 7$$

$$7 = 10 - 3$$

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


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?

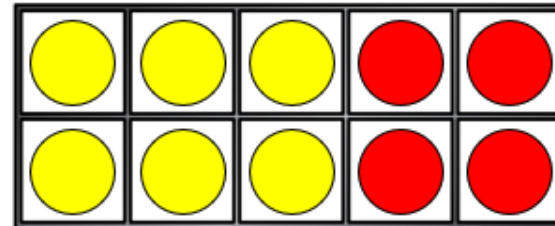
4) What is the mathematical name for this shape?



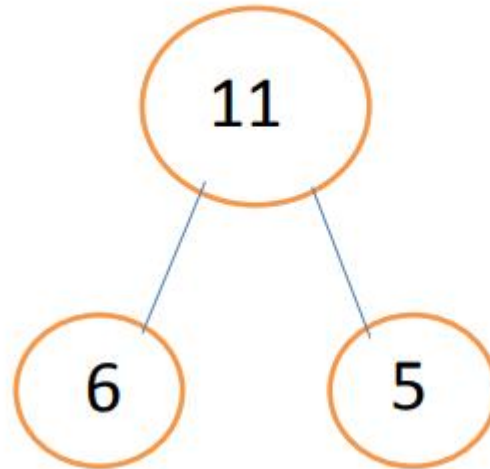
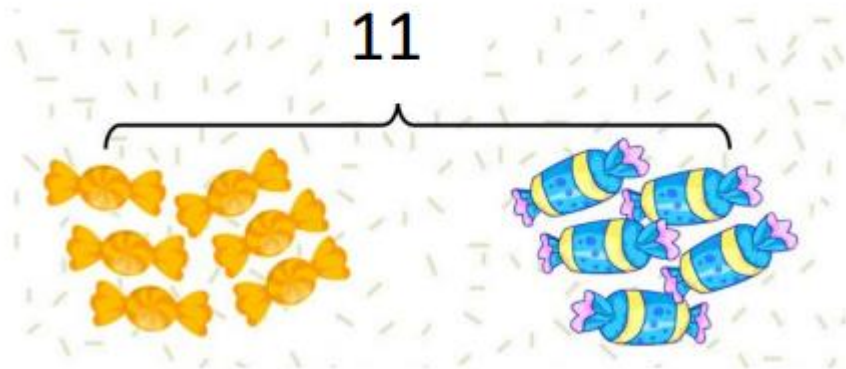
Dora is calculating a number bond to 10

$$6 + \boxed{4} = 10$$

I need to add 4 to 6 to make 10



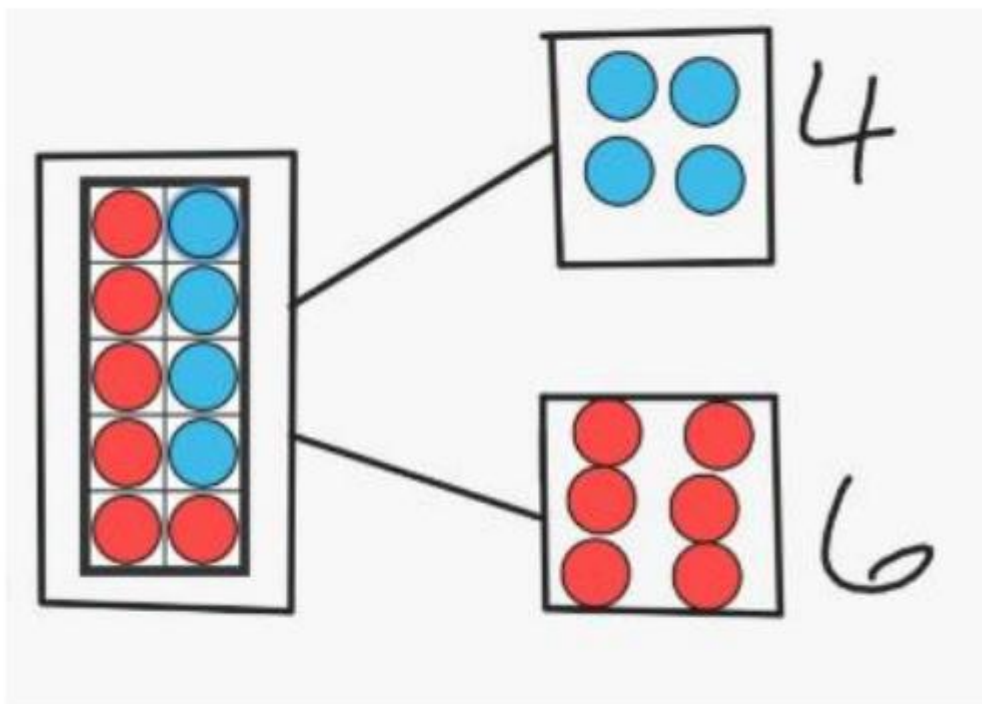
Part –Whole Structures



My whole is 11. One part is 6 and the other part is 5. 6 plus 5 is equal to 11.

| | |
|----|---|
| 11 | |
| 6 | 5 |

Written Equations



$$\underline{4} + \underline{6} = \underline{10}$$

$$\underline{10} = \underline{4} + \underline{6}$$

$$\underline{10} - \underline{4} = \underline{6}$$

$$\underline{6} = \underline{10} - \underline{4}$$

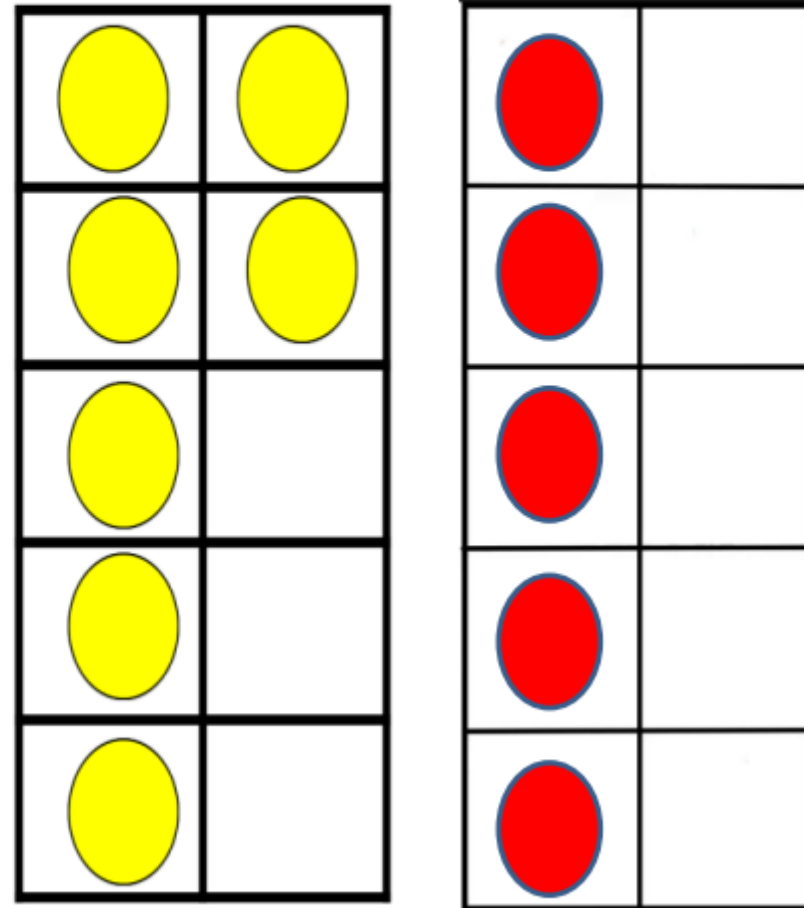
My whole is 10. One part is 6 and the other part is 4. 6 plus 4 is equal to 10.

'Make 10' strategy

There are 7
daffodils and 5
roses.

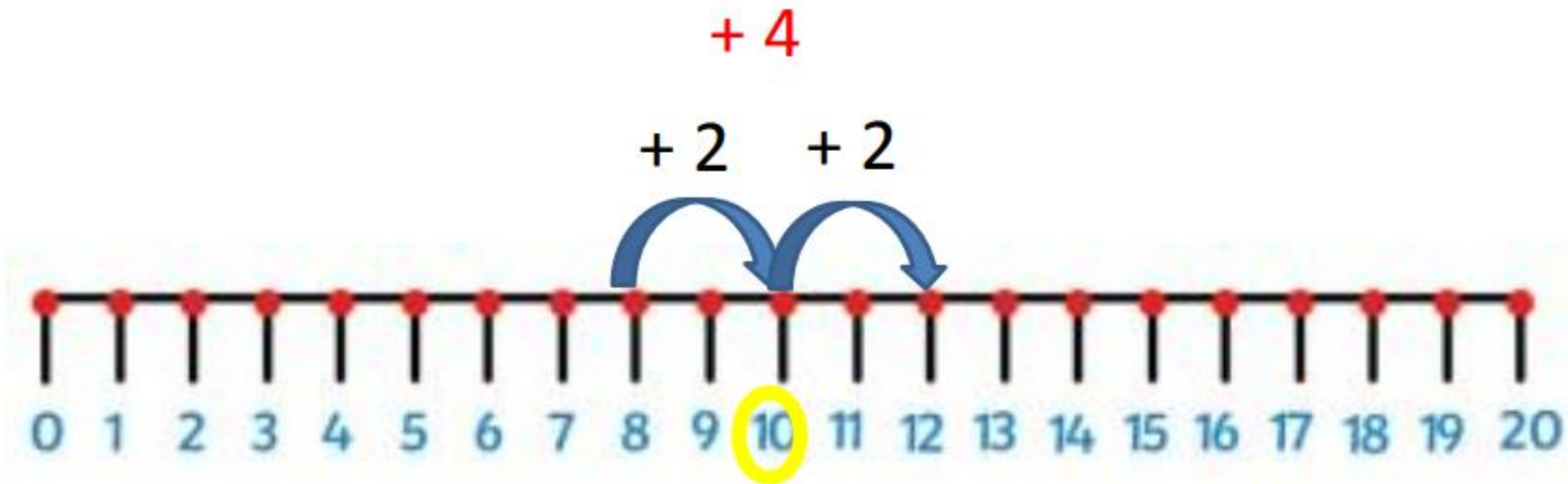
How many
flowers are there
altogether?

10



Recording 'Make 10' strategy

- $8 + 4 = 12$



Recording 'Make 10' strategy

- $8 + 4 = 12$
2 2

$$8 + 2 = 10$$

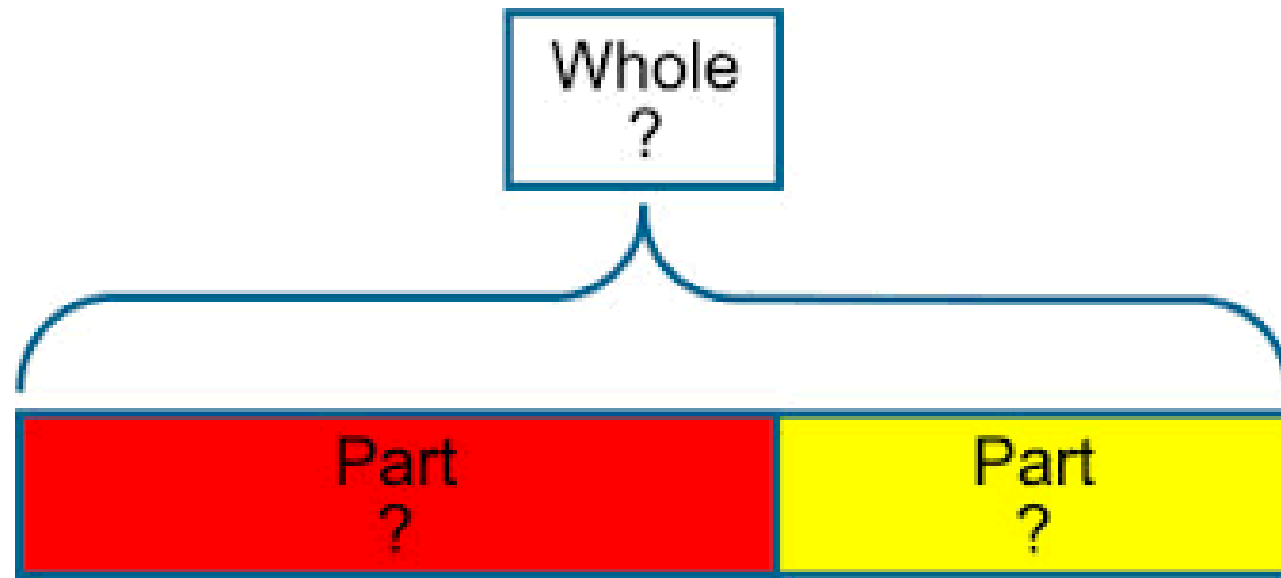
$$10 + 2 = 12$$

- $8 + 4 = 12$
2 6

$$6 + 4 = 10$$

$$10 + 2 = 12$$

Bar Models



Adding Near Doubles

• $4 + 5 =$

$7 + 8 =$

| | |
|--------------|----------------|
| $1 + 1 = 2$ | $6 + 6 = 12$ |
| $2 + 2 = 4$ | $7 + 7 = 14$ |
| $3 + 3 = 6$ | $8 + 8 = 16$ |
| $4 + 4 = 8$ | $9 + 9 = 18$ |
| $5 + 5 = 10$ | $10 + 10 = 20$ |

Addition

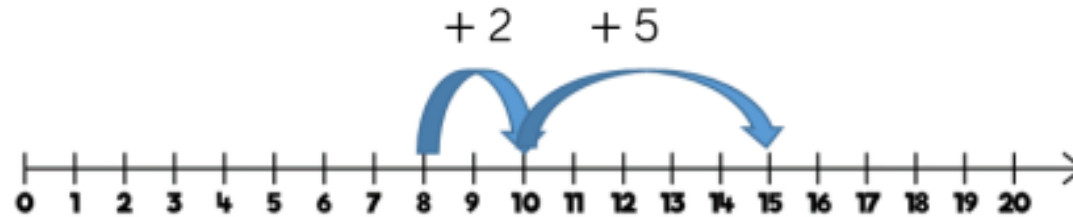
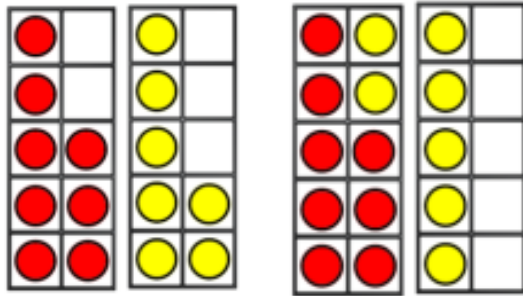
► Vocabulary

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

Addition in Year 2

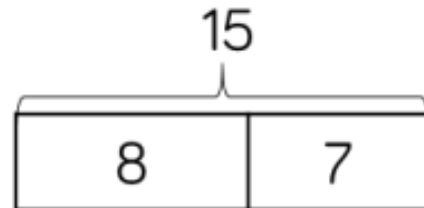
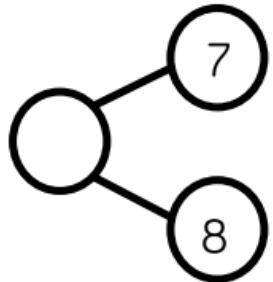
Skill: Add 1 and 2-digit numbers to 20

Year: 2



$$8 + 7 = 15$$

2 5



$$8 + 7 = 15$$



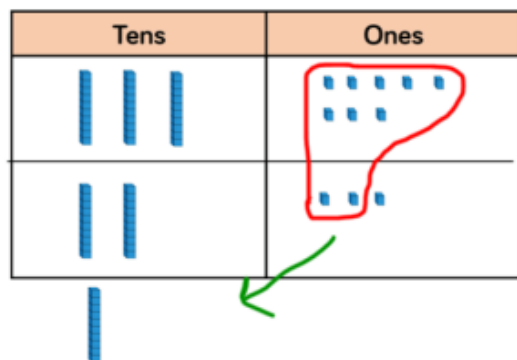
When adding one-digit numbers that cross 10, it is important to highlight the importance of ten ones equalling one ten.

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.

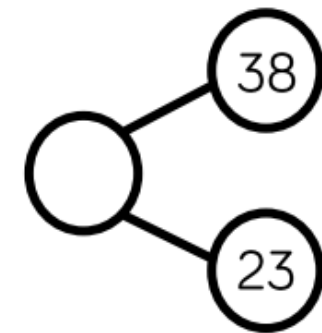
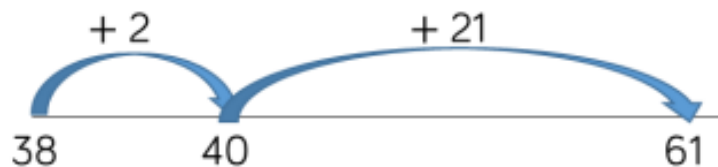
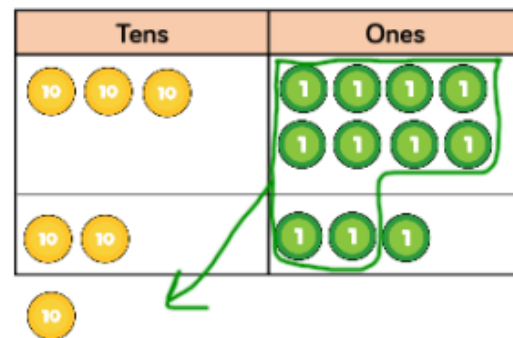
Addition in Year 2

Skill: Add two 2-digit numbers to 100

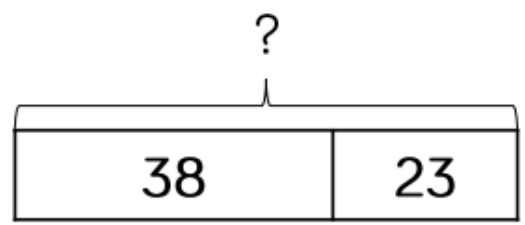
Year: 2



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



$$38 + 23 = 61$$



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.

Subtraction

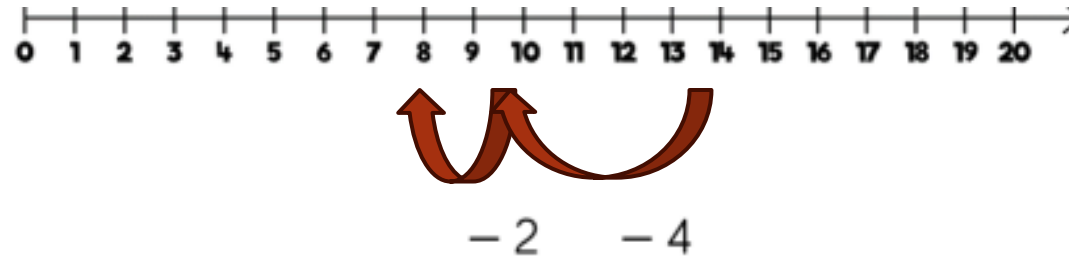
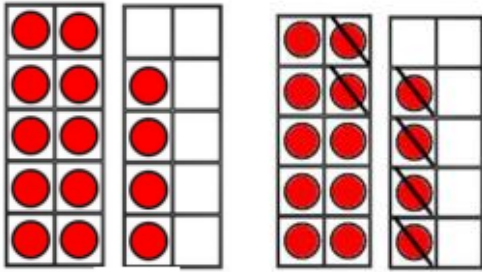
► Vocabulary

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

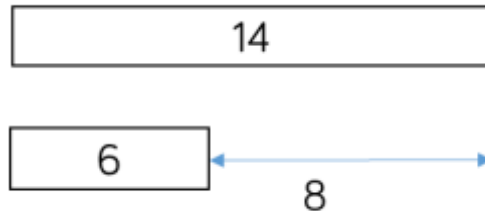
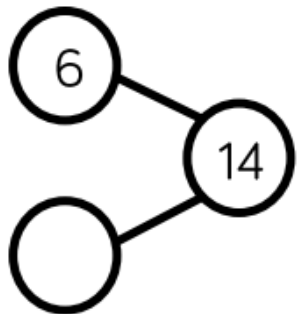
Subtraction in Year 2

Skill: Subtract 1 and 2-digit numbers to 20

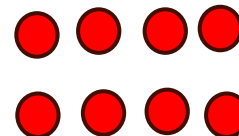
Year: 2



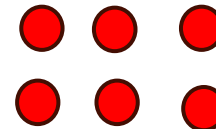
$$\begin{array}{r} 14 - 6 = 8 \\ \quad \swarrow \searrow \\ \quad 4 \quad 2 \end{array}$$



$$14 - 6 = 8$$



Take away mat



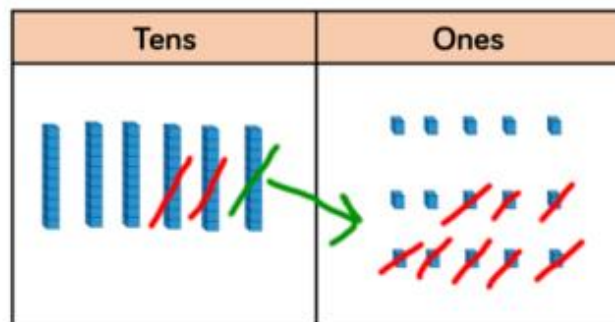
When subtracting one-digit numbers that cross 10, it is important to highlight the importance of ten ones equalling one ten.

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.

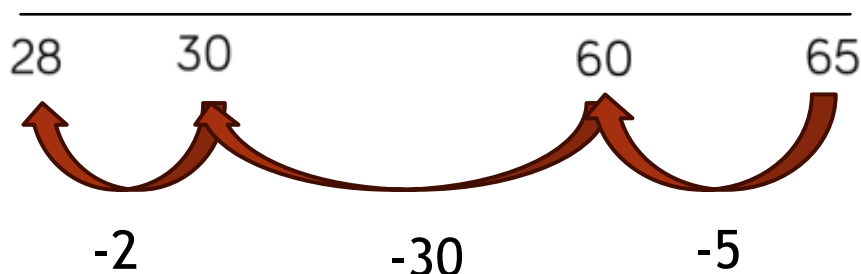
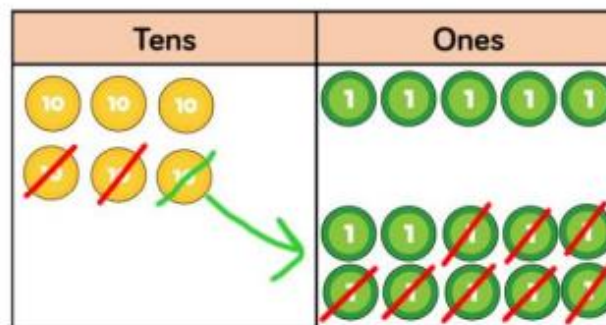
Subtraction in Year 2

Skill: Subtract 1 and 2-digit numbers to 100

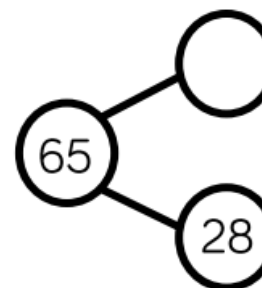
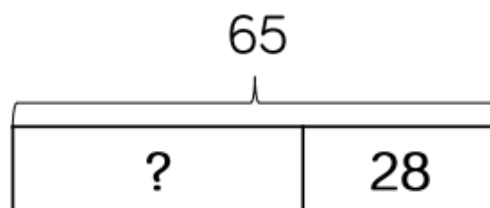
Year: 2



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



$$65 - 28 = 37$$



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

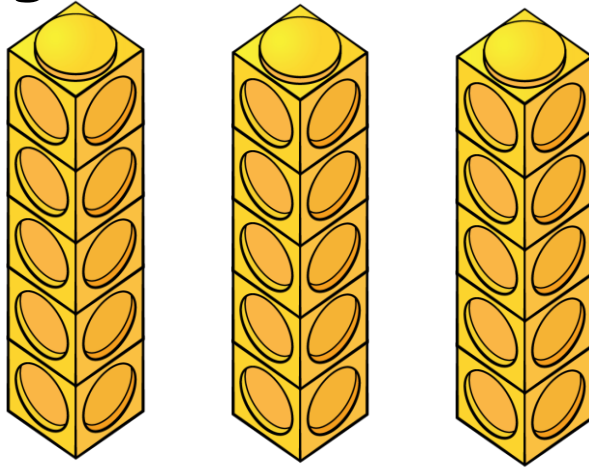
Children can also use a blank number line to count on to find the difference. Encourage them to jump in multiples of 10 to become more efficient.

Multiplication

► Vocabulary

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

Whitney has also been building towers using cubes.



Have a think



How many towers has she built? 3

How many cubes are in each tower? 5

How many cubes has she used in total? 15

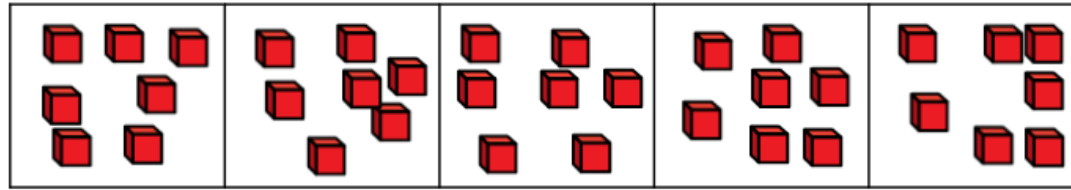
$$\boxed{3} \times \boxed{5} = \boxed{15} \quad \text{or} \quad \boxed{5} \times \boxed{3} = \boxed{15}$$

Division

► Vocabulary

Halve, share, share equally, group in..., groups of, divide, division, dividend, divided by, divisible by

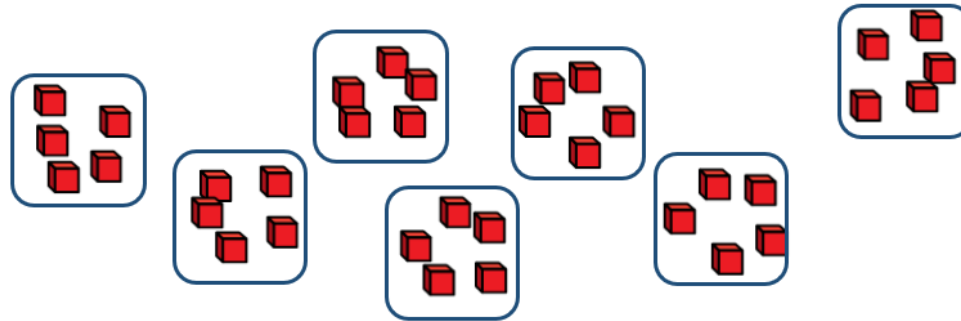
Sharing



There are **7** cubes in each group.

$$35 \div 5 = 7$$

Grouping



There are **7** groups of 5

$$35 \div 5 = 7$$

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.



Useful Websites

- <https://www.topmarks.co.uk/time/teaching-clock>
- <https://www.topmarks.co.uk/maths-games/hit-the-button>
- <https://www.timestables.me.uk/>
- White Rose Maths App

Get the free workbooks

Year 1

Year 2

Year 3

Year 4

Year 5

Year 6



Autumn Block 1
Place value



Autumn Block 2
Addition and subtraction



Autumn Block 3
Multiplication and division



Spring Block 1
Multiplication and division



Spring Block 2
Money



Supporting at Home

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



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