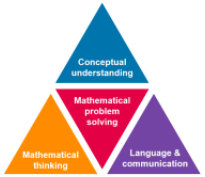
Year 2 Key Representations

Find out more…

Watch the **Unit tutorial** before planning each unit.

Read the **planning guides** for suggestions of representations.

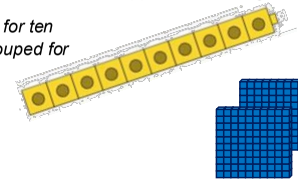
Make use of **PD videos** on unit pages and Progression in Calculations page.



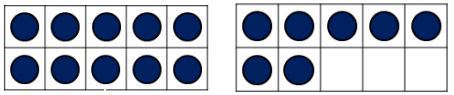
Representations of number

Pupils have primarily used counters, cubes and other discrete objects to represent number. Cubes have been used to support the process of **regrouping** – one ten is equal to ten ones. A ten frame supports this alongside number bonds for 10. Both are used to represent teen numbers.

One ten is regrouped for ten ones. Ten ones is regrouped for one ten.



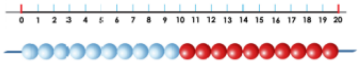
17 is one ten and seven ones.



Pupils have also encountered Dienes equipment to represent larger integers to 100. Counting in tens to identify these numbers has also been developed.

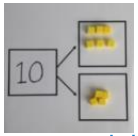
Number lines

Number lines can be used to represent and compare numbers and can be used alongside a bead string. They demonstrate the continuous nature of the number system. Pupils have ordered numbers on a number line.



Part-whole language and representations

A part-whole model is used to represent the relationship between numbers and will have been used for addition and subtraction. The model is made of a **whole** and two or more **parts**.

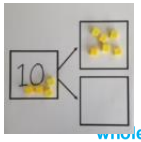


The whole is ten. One part is six and one part is four. Six plus four is equal to ten.

whole = part + part

$10 = 6 + 4$

By moving the manipulatives the model represents subtraction. Care should be taken to ensure connections between the movement of the manipulatives: *I subtract one part of six. I am taking away one part of six.*



The whole is ten. I subtract one part of six. The missing part is four. Ten subtract six is equal to four.

whole – part = part

$10 - 6 = 4$

Equations

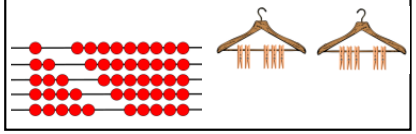
The phrase 'is equal to' is used consistently to refer to the = symbol. What is on one side of the symbol is equal to what is on the other side. Present equations in different ways to support this:

$7 = 3 + 4$

$3 + \square = 7$

Number bond knowledge

Pupils should be increasingly fluent in number bond recall for all numbers to 10 and use representations to consider commutativity.



Deriving facts

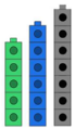
Pupils use known facts such as number bonds and understanding of place value and magnitude to derive further facts. Commutativity for addition is also used.

If I know $3 + 4 = 7$ *then I know* $13 + 4 = 17$

If I know $3 + 4 = 7$ *then I know* $4 + 3 = 7$

Comparing numbers

Pupils have experienced a range of language to compare numbers.

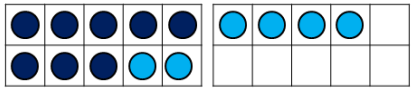


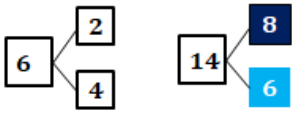
Five is less than seven. Five ones is fewer than seven ones.
Seven is greater than five.
Six is between five and seven. It is after five and before seven.

The 'make 10' strategy

Pupils apply number bonds to 10 to calculate how many more/less to the next multiple of ten. They partition the part into two parts to calculate mentally. Using concrete or pictorial representations can scaffold thinking.

$8 + 6 = ?$ *I know eight and two make 10 so I can partition six into two and four.*



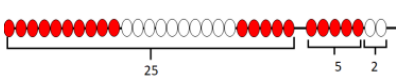


Ten more / ten less

Pupils have explored ten more and ten less than numbers within 50 using manipulatives. They also skip count on and back in tens from different starting points. Mental recall of this can be developed in Maths Meetings.

Finding the difference

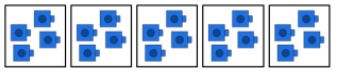
Pupils recognise that in a subtraction calculation where the numbers are close together in value, a count on strategy can be used to find the difference.



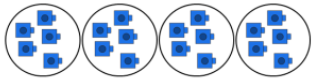
$32 - 25 = ?$ *I can count on from 25 to find the difference. Five more is 30, two more is 32. The difference is seven.*

Division by sharing / grouping

Pupils have been exposed to the concept of division within 20 through equal grouping and equal sharing. They have also explored unequal grouping and sharing. Pupils should explore the terms grouping and sharing and be familiar with both.



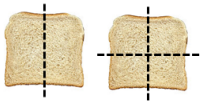
20 shared into five equal groups gives four in each group.



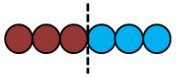
20 grouped into groups of five gives four groups.

Representing fractions

Pupils identify half and quarter of a shape and a quantity within 20 using practical experiences including equal sharing for a quantity. They are also familiar with half turns, linking this to half past on a clock face.

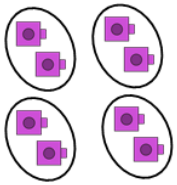


One half is one of two equal parts.
One quarter is one of four equal parts.



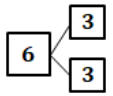
Half of six is three.

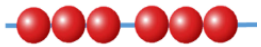
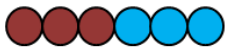
One quarter of eight is two.



Doubling and halving

Pupils have had opportunities to represent doubling and halving within 20 using concrete and pictorial representations. This is connected to their understanding of half. Some facts will be recalled.





Double three is six. Three plus three is equal to six.
Half of six is three. Six take away three is equal to three.