

Addition

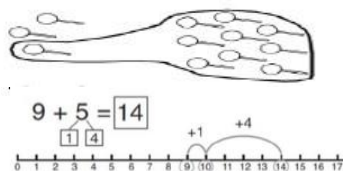
Partitioning and bridging through 10

Solve calculations with single digits that bridge 10 by regrouping.

Concrete



Pictorial



Abstract

$$9 + \square = 14$$

Use number bonds to make 10, then count on.

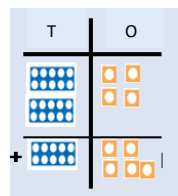
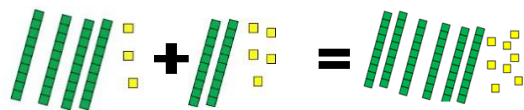
$$9 + 1 = 10$$

$$10 + 4 = 14$$

$$\text{So: } 9 + \boxed{5} = 14$$

Addition of 2-digit numbers without regrouping

Concrete

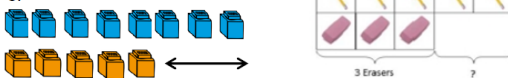


Subtraction

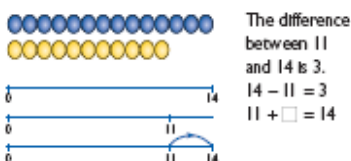
Understanding subtraction as finding the difference

Concrete

Calculate the difference between 8 and 5.



Pictorial

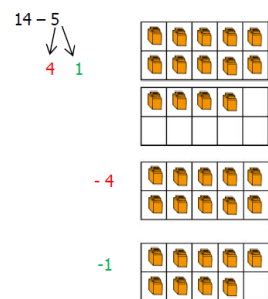


Abstract

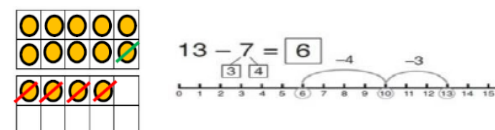
$8 - 5$, the difference is 3

Subtraction with bridging by making 10

Concrete



Pictorial

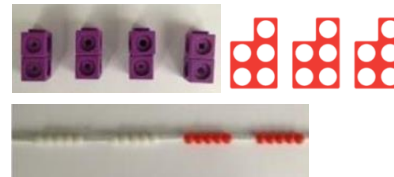


Multiplication

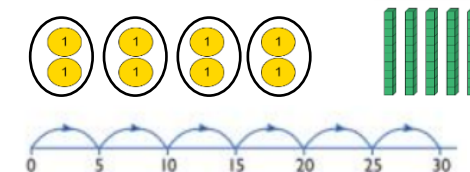
Counting in multiples

Concrete

Count in 2s, 5s and 10s using a range of practical resources.



Pictorial



Abstract

Write number sequences with multiples

2, 4, 6, 8, 10

5, 10, 15, 20, 25

Repeated addition and expressing multiplication as a number sentence using 'x'

Concrete

Represent given repeated addition and multiplication equations and solve using a range of practical resources



Pictorial

Division

Children should continue to use grouping and sharing for division using practical apparatus and pictorial representations learnt in Year 1.

Grouping using arrays

Use a range of practical resources: Numicon, bead strings, multi-link etc...

Concrete



Pictorial

Use of arrays as a pictorial representation for division.
 $15 \div 3 = 5$ There are 5 groups of 3.
 $15 \div 5 = 3$ There are 3 groups of 5



Abstract

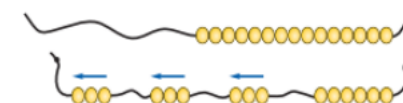
Know grouping- introducing children to the \div sign.

Grouping using a number line

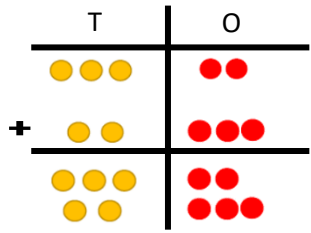
Group from zero in jumps of the divisor to find out 'how many groups of 3 are there in 15?'

Concrete

Use bead strings or counting sticks.
 $15 \div 3 = 5$



Pictorial



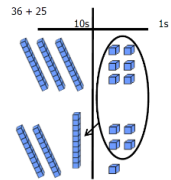
Abstract

$$\begin{array}{r} 21 + 42 = \\ 20 + 40 \quad 1 + 2 \end{array} \quad \begin{array}{r} 21 \\ + 42 \\ \hline \end{array}$$

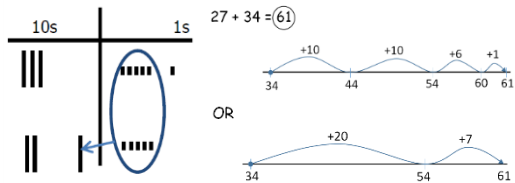
nb – when introducing methods linked to place value columns, always start with the ones for future learning.

Addition of 2-digit numbers with regrouping

Concrete



Pictorial



Abstract

$$\begin{array}{r} 36 + 25 \\ 1 \quad 5 \end{array} \quad \begin{array}{r} 30 + 20 = 50 \\ 5 + 5 = 10 \\ 50 + 10 + 1 = 61 \end{array}$$

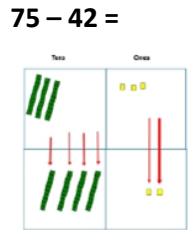
Abstract

$$14 - 5 = 9 \quad 14 - 4 = 10$$

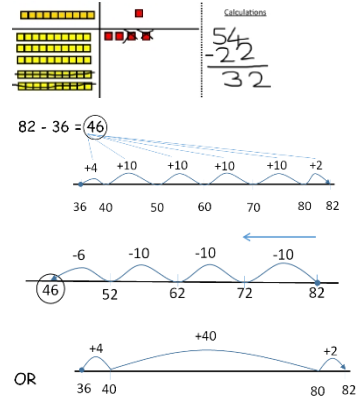
$$10 - 1 = 9$$

Subtraction of 2-digit numbers without exchanging

Concrete



Pictorial



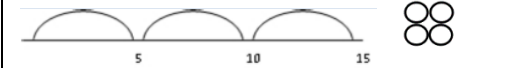
Abstract

T	O
50	4
- 20	2
30	2

$$30 + 2 = 32$$

nb – when introducing methods linked to place value columns, always start with the ones for future learning.

Draw given repeated addition and multiplication equations to solve



Abstract

Write and solve equations demonstrating the link between repeated addition and using 'x' to show 'lots of' or 'groups of'.

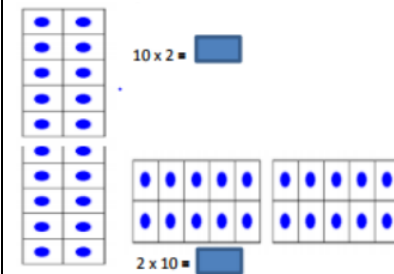
$$4 + 4 + 4 = 12$$

$$4 + 4 + 4 = 3 \times 4$$

$$3 \times 4 = 12$$

Develop understanding of commutativity by expressing arrays as multiplication number sentences

Concrete and pictorial



Abstract

Solve missing number problems

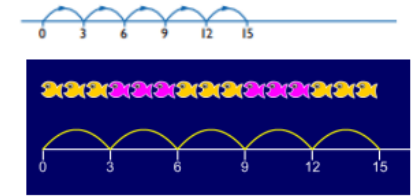
$$7 \times 2 = \square \quad \square = 2 \times 7$$

$$7 \times \square = 14 \quad 14 = \square \times 7$$

$$\square \times 2 = 14 \quad 14 = 2 \times \square$$

$$\square \times \bigcirc = 14 \quad 14 = \square \times \bigcirc$$

Pictorial



Abstract

Know grouping- introducing children to the ÷ sign.