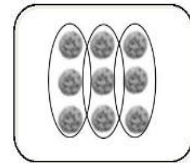# Addition

Pupils should be taught to

- Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs
- Represent and use number bonds and related subtraction facts within 20
- Add and subtract one-digit and two-digit numbers to 20, including zero
- Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as

$15 + 4 = \square$        $5 + 3 + 1 = \square$              $\square + \square = 6$

Addition by grouping finding the total number

of items in two groups by counting all of them 3 + 2

Repeated addition using arrays e.g. 3 + 3 + 3 =

Counting along a number line e.g. 10 + 4 =

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Bead strings can be used to illustrate addition e.g. 10 + 4 =

Counting on a hundred square e.g. 10+4=14

- Put your finger on the number 10
- Count 4 squares
- The number you land on is the answer

Bar model helps to visualise

the number sentence

?

+

$3 + 2 = \square$

Mastery in addition – see NCETM
website for more examples

Captain Conjecture says, 'If you add 0 to a number, the number stays the same.'

Do you agree?

Explain your reasoning.

Key vocabulary: add, more, plus, and, make, altogether, total, equal to, equals, double, most, count on, number line
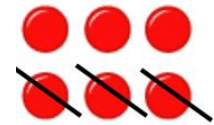
# Subtraction

Pupils should be taught to:

- Read, write and interpret mathematical statements involving subtraction (-) and equals (=) signs
- Represent and use number bonds and related subtraction facts within 20
- Subtract one digit and two digit numbers to 20 including 0
- Solve one step problems that involve subtraction and addition using concrete objects and pictorial representations, and missing number problems such as 7 = ? - 9

Children consolidate understanding of subtraction practically, showing subtraction on bead strings, using cubes etc. and in familiar contexts, and are introduced to more formal recording using number lines as below:
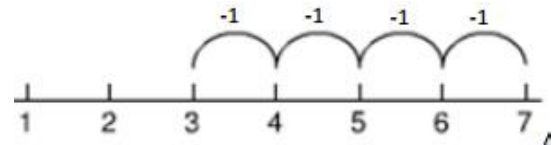
$$19 - 6 = ?$$
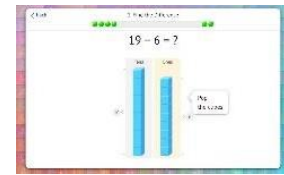
Children begin to subtract units from a large group using physical objects e.g. Maths makes sense cups, counters, Numicon shapes.
They count each object to find how many left.
Teacher models the language e.g. '6 cups take away 3 cups equals 3 cups'.
They begin to record by drawing pictures/marks.

Count back in ones on a numbered number line to take away.
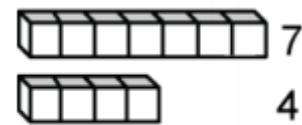
with numbers up to 20

$$7-4 = 3$$

Model subtraction using hundred squares and practically.

This will be introduced practically with the language 'find the difference between' and 'how many more?' in a range of familiar contexts.
Seven is 3 more than four I am 2 years older than my sister

7

4

**Mastery** in subtraction – see NCETM website for more examples

Together Sam and Tom have 19 football stickers.
Tom has 8 stickers. How many stickers does Sam have?

Write a number sentence you could use to solve the problem.

Key vocabulary: equal to, take, takeaway, less, minus, subtract, leaves, distance between, how many more, how many fewer/less than, most, least, count back, how many left, how much less is_?
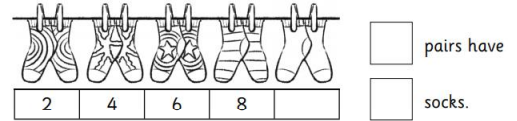
# Multiplication

**Pupils should be taught to:**

• Solve one-step problems involving multiplication, by calculating the answer using concrete objects, pictorial representations and arrays with support of the teacher.

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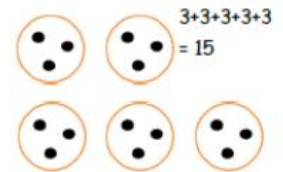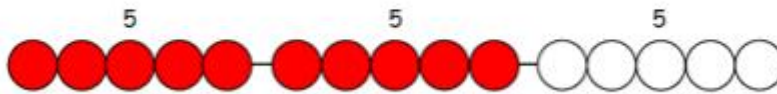Give children experience of counting equal groups of objects in 2s, 5s and 10s

| 2 | 4 | 6 | 8 | |

☐ pairs have

☐ socks.

---

Repeated addition

How many legs will 3 teddies have?

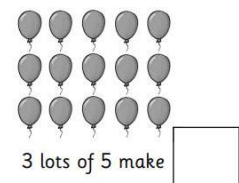2 + 2 + 2 = 6

---

Grouping: There are 3 sweets in one bag.
How many sweets are there in 5 bags?

$5 \times 3 = 5 + 5 + 5$

3+3+3+3+3
= 15

5          5          5

Give the children bead strings for physical experiences

---

Make connections between arrays, number patterns and counting in 2s, 5s and 10s

3 lots of 5 make ☐ .

---

Bar modelling
Year 1: solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support the teacher.

Focus on verbalising thinking:
e.g.
'eight is two taken four times'
'two taken four times is eight'

---

## Mastery in multiplication – see

NCETM website for more examples

Show pupils pictures or groups of objects like the examples below. Ask questions such as 'How many biscuits are there altogether?'
'How many cherries are there altogether?'
Observe how pupils count the objects. Do they count in twos, fives etc. or do they count in ones?

---

Key vocabulary: groups of, lots of, times, array, altogether, multiply, count

**Division**

Pupils should be taught to:

- Solve one-step problems involving division, by calculating the answer using concrete objects, pictorial representations and arrays with support of the teacher.
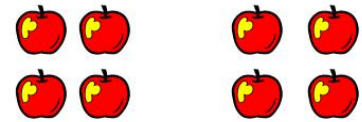
## Sharing
Children will start with practical sharing using a variety of resources. They will share objects into equal groups in a variety of situations. They will begin to use the vocabulary associated with division in practical contexts.

Fred has 8 stickers; he shares them between 2 children
How many do they have each?

8 shared between 2 is
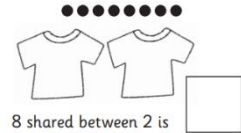
Share these eight apples equally between two children.
How many apples will each child have?'

## Grouping
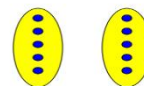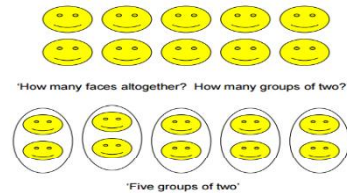Children will move from sharing to grouping in a practical way

How many groups of 4 can be made with 12 stars? = 3

Put 20 crayons into groups of 10. How many pots do we need?'

Use arrays to support early division

'How many faces altogether?  How many groups of two?'

'Five groups of two'

'How many groups of 5?'
'10 shared equally between 2 people'
'Half of ten is five'

## Mastery in division – see
NCETM website for more examples

Sarah is filling party bags with sweets. She has 20 sweets altogether and decides to put 5 in every bag. How many bags can she fill?

Key vocabulary: share, share equally, one each, two each..., group, groups of, lots of, array