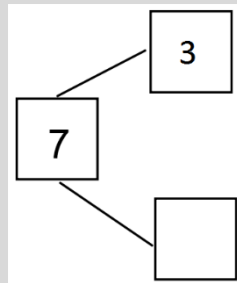# Addition & Subtraction

- 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 0
- Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ? - 9
- Children understand the effect of adding and subtracting zero. This establishes the relationship between the two operations.
- Understand that addition can be done in any order but subtraction cannot.

Teachers and/or pupils may demonstrate these strategies on a numbered number line supported by a variety of materials.
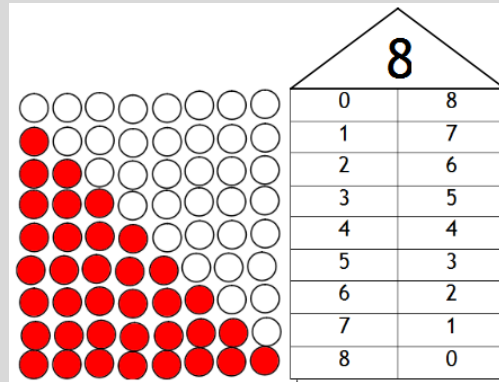
Know and use number facts

ADDITION   SUBTRACTION

Children know by heart and reason with number bonds to 10 and 20 in several forms

Number Trios

9	
4	5

$4 + 5 = 9$

$5 + 4 = 9$

$9 - 5 = 4$

$9 - 4 = 5$

Bar Model

3

7

Part whole model

	8	
0		8
1		7
2		6
3		5
4		4
5		3
6		2
7		1
8		0

Using manipulatives and systematic recording of number bonds

Partition small numbers (to make 10)

$8 + 3 =$ $8 + 2 + 1 = 11$

Partition, double and adjust

$5 + 6 =$ $5 + 5 + 1 = 11$

Partition smaller number only

$14 + 12 =$ $14 + 10 + 2 =$ $24 + 2 = 26$

Partition and combine tens and ones

$13 + 12 =$ $10 + 10 + 3 + 2 =$ $20 + 5 = 25$

Partition and bridge

8   5

8   2   3

Using bonds

$8 + 5 = 13$

$8 + 5 = 13$

$\overset{2 \quad 3}{\wedge}$

$47 + 6 = 53$

$\underset{3 \quad 3}{\wedge}$

MODELS AND REPRESENTATIONS—

To support the learning of number facts use a variety of manipulatives.

Combining two sets and counting all, progress to putting larger number first and counting on.

9 + 3 =

10 + 2 = 12

Tens	Ones

Using partitioning for teen number + teen number.

Counting all; 1,2,3,4,5,6,7

Counting on; 5,6,7, 8, 9, 10

7

Larger number first and count on

4+3

8+5

9-2

13-7

Bridging across 10

3 + 8 = 3 + 7 + 1

8 + 3 = 8 + 2 + 1

Children can explore this using multilink

Which line has most money?
How much more?

6 and how many
more make 10?
6 + ☐ = 10

25 add 6
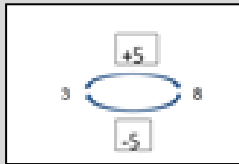
Bead strings

ADDITION

Visualising

Encourage use of number bonds to bridge so it is important that children are fluent with these.

16, add 3

3, add 16

16 + 3 = 3 + 16

6 + 7 =

+3   +3

+1 +1 +1 +1 +1 +1

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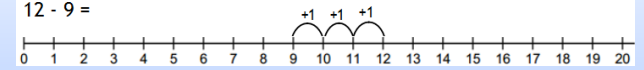
Inverse

In the first instance, children should be introduced to subtraction as counting back. Counting on is a progression from this and teachers should use vocabulary such as, 'How many more? What is the difference between?' when teaching counting on in subtraction.
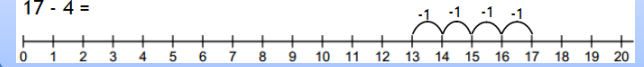
Counting on
12 - 9 =

Counting back
17 - 4 =

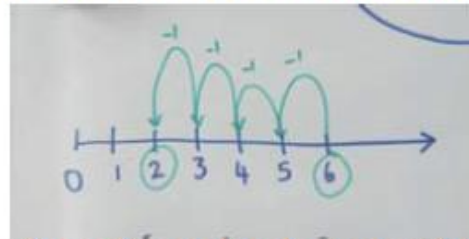## Subtract one-digit and two-digit numbers to 20, including zero.

$7 - 3 = \square$, $7 - \square = 4$

$\square - 3 = 4$, $17 - 13 = \square$

$17 - \square = 4$

Read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) signs .
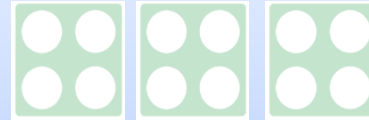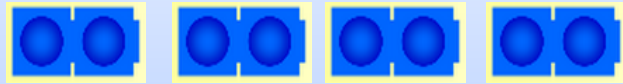
$6 - 4 = 2$

The difference between 6 and 4 is 2.

Represent and use number bonds and related subtraction facts within 20.

Year 1 — Multiplication and Division

- Solve one– step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.
- Through grouping and sharing small quantities, pupils begin to understand: multiplication and division; doubling numbers and quantities; and finding simple fractions of objects, numbers and quantities.
- They make connections between arrays, number patterns and counting in twos, fives and tens.

Counting in steps of different sizes

Teachers and/or pupils may demonstrate these strategies on a numbered number line supported by a variety of materials.

Counting

Laying foundations for multiplying and dividing by maximising opportunities when counting. Progress from counting in ones, to skip counting / repeated addition.

Use 100 grid to discuss patterns counting in 2s, 5s and 10s

Counting in twos

Counting on and back ITP

Cuisenaire on number track

Counting on fingers

UNITISING

Unitising—Children need to understand that one object can represent more than one item. E.g. a 2p coin or a piece

COUNTING

Using Numicon or Cuisenaire for doubles.
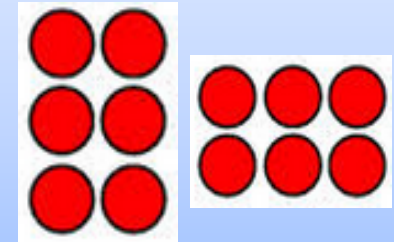
MODELS

Calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.

Lots of and groups of the same thing.

Arrays
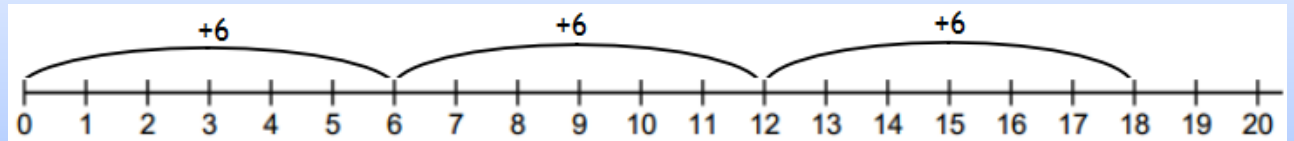
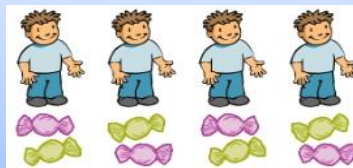Arrays can be used to support children in their understanding the structure of multiplication and division.

One step problems involving multiplication and division

Jill has 3 bags of oranges and each has six oranges in it. How many oranges does she have?

+6   +6   +6

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

Sharing

There are eight sweets and four boys. How many sweets does each boy get?

Grouping

24 eggs are packed into boxes of 6. Put 6 eggs in the first box and continue until there are none left. How many boxes are needed?