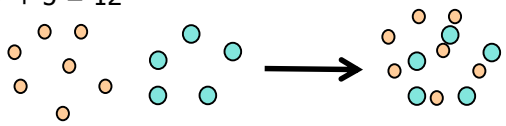
Written Calculations Policy – Year 1

Addition +

Combining two sets (aggregation)

Two or more amounts or numbers are combined to make a total:

7 + 5 = 12

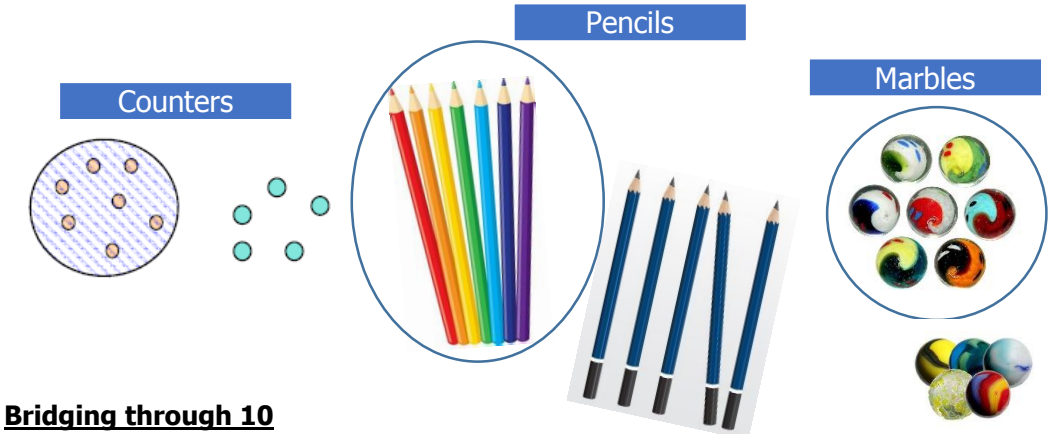


Count one set (7+), then the other set (7+5). Combine the sets and count again. Starting at 1 (7+5=12).

Combining two sets (augmentation)

N.B. The stage where pupils move from counting to calculating.

In this method, one set is increased. Teach pupils to count on from the total of the first set, e.g. put 7 in your head and count on 5. Always start with the largest number.

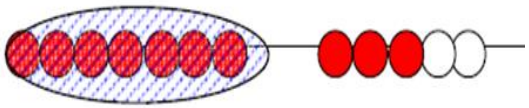


Bridging through 10

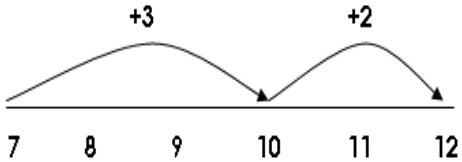
7 + 5 is decomposed / partitioned into 7 + 3 + 2.

The bead string illustrates 'How many more to the next multiple of 10?' Pupils should identify how their number bonds are being applied and then 'If we have used 3 of the 5 to get to 10, how many more do we need to add on?' The use of a bead string/number line allows pupils to rehearse the ability to decompose/partition all numbers to aid addition (particularly mental addition in later schooling).

Bead String



Number Line

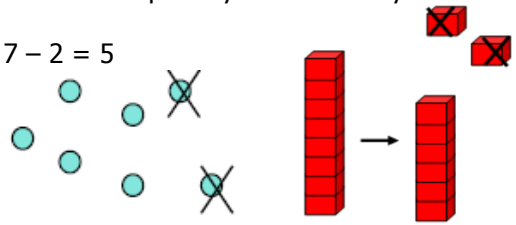


Subtraction –

Taking away (separation model)

Where one quantity is taken away from another to calculate what is left.

7 – 2 = 5

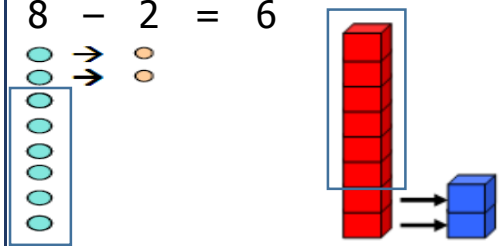


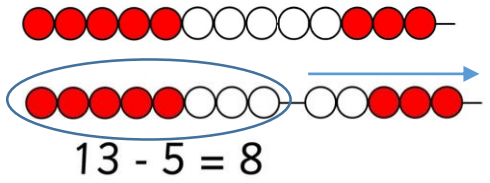
Multilink towers (or Base 10/Dienes) to physically take away objects so the pupil can count what remains.

Finding the difference (comparison model)

Two quantities are compared to find the difference.

8 – 2 = 6





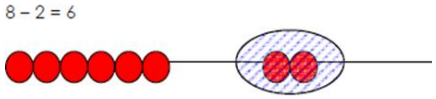
1 set within another (part-whole model)

The quantity in the whole set and one part are known, and may be used to find out how many are in the unknown part.

8 - □ = 2 / 8 – 6 = □

Counters:

Bead String:

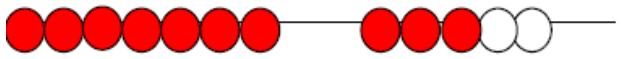


Bridging through 10

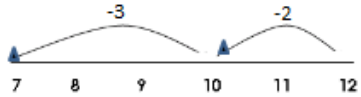
12 – 7 is decomposed / partitioned into 12 – 2 – 5.

The bead string illustrates 'from 12 how many to the last/previous multiple of 10?' and then 'if we have used 2 of the 7 we need to subtract, how many more do we need to count back? The use of a bead string/number line allows pupils to rehearse the ability to decompose/partition all numbers to aid subtraction.

Bead String



Number Line



Multiplication ×

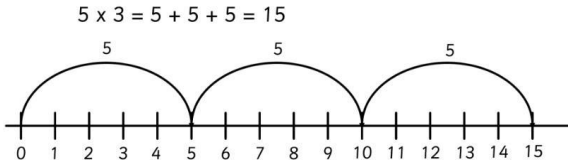
Counting in 2s, 5s and 10s

Pupils will have real, practical experiences of handling equal groups of objects and counting in 2s, 5s and 10s. Pupils will work on practical problem-solving activities involving equal sets or groups of objects.

Repeated addition (repeated aggregation)

3 times 5 is 5 + 5 + 5 = 15 or 5 lots of 3 or 5 x 3

Pupils learn that repeated addition can be shown on a number line or a bead string.



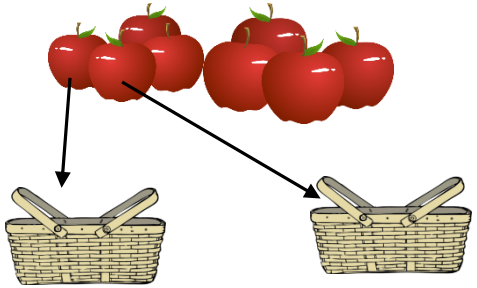
To further develop pupils' understanding, and for further challenge, use coins as an example of repeated addition.

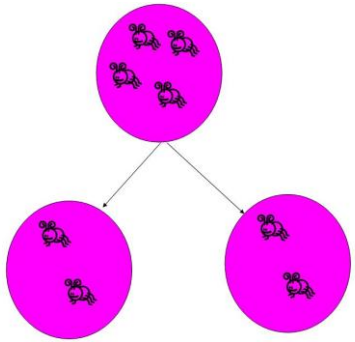
Division ÷

Pupils will understand equal groups and share objects out in play and problem solving. They will count in 2s, 5s and 10s.

Sharing Equally

Pupils will learn to share a set of items, sharing out one object at a time between a certain number.





Repeated subtraction (grouping)

Pupils will learn to divide by grouping to make the process more efficient.