



# Calculation Policy

## Addition – Years 1-3

**+ = signs and missing numbers**

Children need to understand the concept of equality before using the '=' sign. Calculations should be written either side of the equality sign so that the sign is not just interpreted as 'the answer'.

2 = 1 + 1  
2 + 3 = 4 + 1

Missing numbers need to be placed in all possible places.

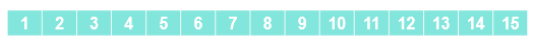
3 + 4 = □      □ = 3 + 4  
3 + □ = 7      7 = □ + 4

**Counting and Combining sets of Objects**

Combining two sets of objects (aggregation) which will progress onto adding on to a set (augmentation)



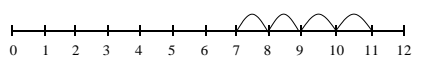
**Understanding of counting on with a numbertrack.**



**Understanding of counting on with a numberline**

(supported by models and images).

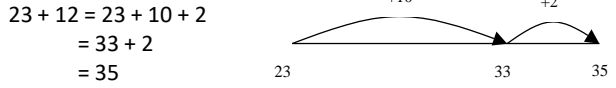
7 + 4



Missing number problems e.g.  $14 + 5 = 10 + \square$      $32 + \square + \square = 100$   
 $35 = 1 + \square + 5$

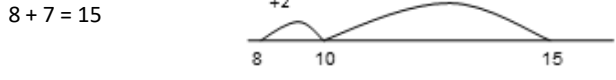
It is valuable to use a range of representations (also see Y1). Continue to use numberlines to develop understanding of:

**Counting on in tens and ones**

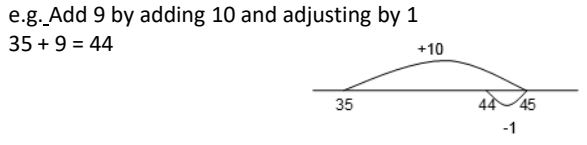


**Partitioning and bridging through 10.**

The steps in addition often bridge through a multiple of 10 e.g. Children should be able to partition the 7 to relate adding the 2 and then the 5.

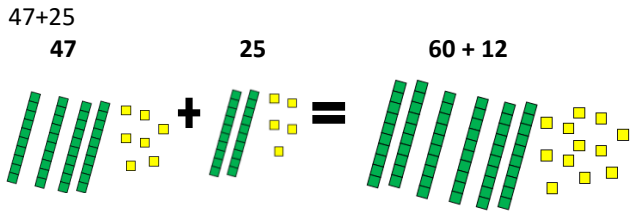


**Adding 9 or 11 by adding 10 and adjusting by 1**

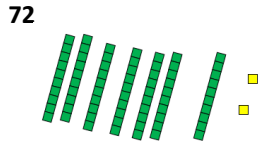


**Towards a Written Method**

Partitioning in different ways and recombine



Leading to exchanging:



**Expanded written method**

$40 + 7 + 20 + 5 =$   
 $40 + 20 + 7 + 5 =$   
 $60 + 12 = 72$

$40 + 7$   
 $+ 20 + 5$   
 $60 + 12 = 72$

Missing number problems using a range of equations as in Year 1 and 2 but with appropriate, larger numbers.

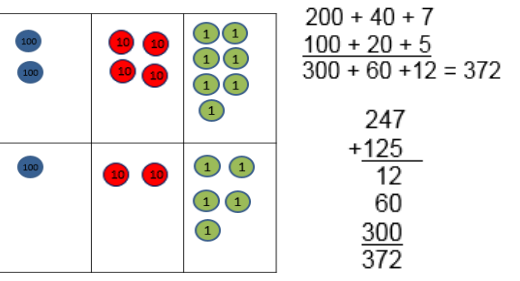
**Partition into tens and ones**

Partition both numbers and recombine. Count on by partitioning the second number only e.g.  
 $247 + 125 = 247 + 100 + 20 + 5$   
 $= 347 + 20 + 5$   
 $= 367 + 5$   
 $= 372$

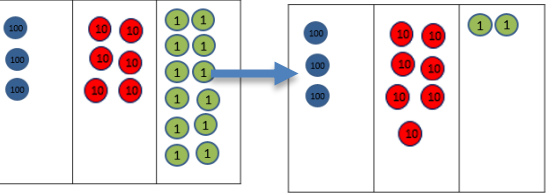
Children need to be secure adding multiples of 100 and 10 to any three-digit number including those that are not multiples of 10.

**Towards a Written Method**

Introduce expanded column addition modelled with place value counters (Dienes could be used for those who need a less abstract representation)



Leading to children understanding the exchange between tens and ones.



Some children may begin to use a formal columnar algorithm, initially introduced alongside the expanded method. The formal method should be seen as a more streamlined version of the expanded method, not a new method.

$247$   
 $+125$   
 $372$   
10

## Year 3 guidance

### Notes and guidance (non-statutory)

Pupils practise solving varied addition and subtraction questions. For mental calculations with two-digit numbers, the answers could exceed 100.

Pupils use their understanding of place value and partitioning, and practise using columnar addition and subtraction with increasingly large numbers up to three digits to become fluent (see [Mathematics Appendix 1](#)).

