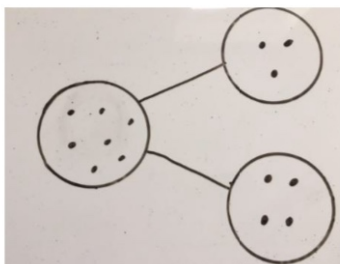


# ALVERTON CALCULATION POLICY - ADDITION

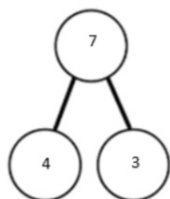
## EYFS/Year 1

Children to represent the cubes using dots or crosses. They could put each part on a part whole model too.

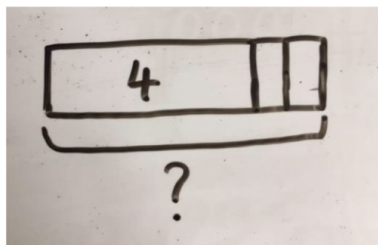


$$4 + 3 = 7$$

Four is a part, 3 is a part and the whole is seven.



A bar model which encourages the children to count on, rather than count all.



## Year 2

Children to become familiar with a range of mental strategies. These will include the ideas below.

Counting on in tens and ones

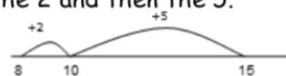
$$\begin{aligned} 23 + 12 &= 23 + 10 + 2 \\ &= 33 + 2 \\ &= 35 \end{aligned}$$

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.

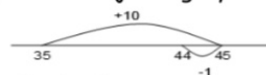
$$8 + 7 = 15$$



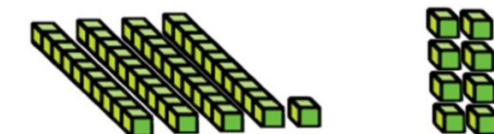
Adding 9 or 11 by adding 10 and adjusting by 1

e.g. Add 9 by adding 10 and adjusting by 1

$$35 + 9 = 44$$



TO + O using base 10. Continue to develop understanding of partitioning and place value.



## Year 3

Children to become familiar with a range of mental strategies. These will include the ideas below.

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.

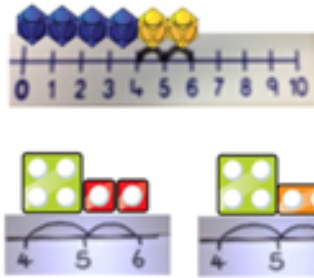
Count on by partitioning the second number only e.g.

$$\begin{aligned} 247 + 125 &= 247 + 100 + 20 + 5 \\ &= 347 + 20 + 5 \\ &= 367 + 5 \\ &= 372 \end{aligned}$$

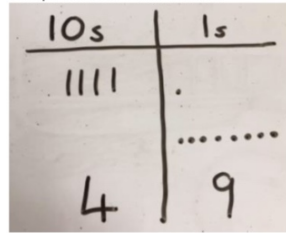
Children need to be secure adding multiples of 100 and 10 to any three-digit number including those that are not multiples of 10.

**Written methods will continue with place value counters to model column addition. This should allow the child to quickly become confident with the formal written method. For any children with gaps in their understanding, any method from previous years can be used in intervention to plug those gaps and allow the child to access the curriculum for their year group.**

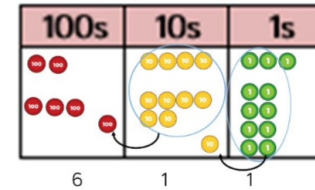
Counting on using number lines using cubes or Numicon.



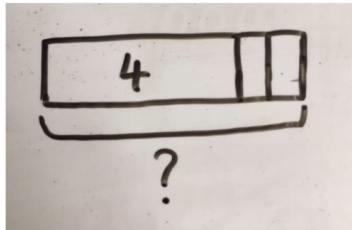
Children to represent the base 10 e.g. lines for tens and dot/crosses for ones.



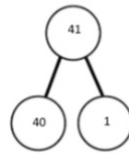
Use of place value counters to add HTO + TO, HTO + HTO etc. When there are 10 ones in the 1s column - we exchange for 1 ten, when there are 10 tens in the 10s column - we exchange for 1 hundred.



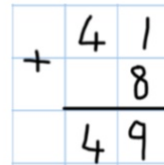
A bar model which encourages the children to count on, rather than count all.



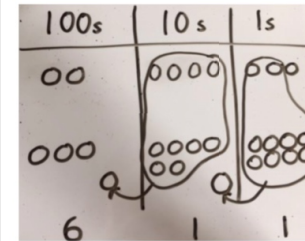
41 + 8



1 + 8 = 9  
40 + 9 = 49



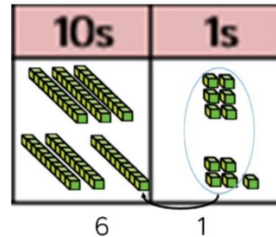
Children to represent the counters in a place value chart, circling when they make an exchange.



The abstract number line:  
What is 2 more than 4?  
What is the sum of 2 and 4?  
What is the total of 4 and 2?  
4 + 2



TO + TO using base 10. Continue to develop understanding of partitioning and place value.  
36 + 25

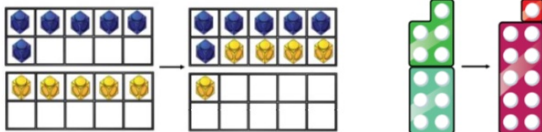


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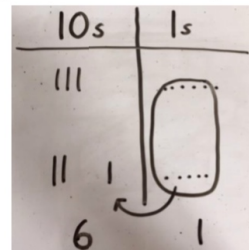
$$\begin{array}{r} +368 \\ 611 \\ \hline 11 \end{array}$$

Regrouping to make 10; using ten frames and counters/cubes or using Numicon.

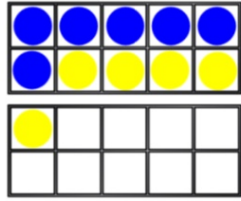
6 + 5



Children to represent the base 10 in a place value chart.



Children to draw the ten frame and counters/cubes.



Looking for ways to make 10.

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

Formal method:

$$\begin{array}{r} +25 \\ 36 \\ \hline 61 \\ \hline 1 \end{array}$$

Children to develop an understanding of equality e.g.

$$6 + \square = 11$$

$$6 + 5 = 5 + \square$$

$$6 + 5 = \square + 4$$

## ALVERTON CALCULATION POLICY - ADDITION

<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>
<p>Continue with column addition with up to 4 digit numbers.</p> <p>Use place value counters to explain where necessary.</p>	<p>Continue with column addition with up to 5 digit numbers.</p> <p>Use place value counters to explain where necessary.</p> <p>Introduce addition with decimals.</p>	<p>Continue with column addition with up to 7 digit numbers.</p> <p>Use place value counters to explain where necessary.</p> <p>Introduce addition with different numbers of decimals.</p>





