Addition - Year Four

♦ Add numbers with up to 4 digits using the formal written method of columnar addition where appropriate

♦ Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.

Continue to teach the use of empty number lines with three and four digit numbers, as appropriate.

Further develop the formal written method of addition, with three-digit numbers.

Revisit the expanded method first, if necessary:
177 + 146 = 323
1 7 7 +1 4 6
1 3 (7 + 6)
1 1 0 (70 + 40)
2 0 0 (100 + 100)
3 2 3

This will lead into the formal written method without carrying then with carrying with up to 4 digit numbers.

Formal method without carrying

64 + 32

```
    6 4
 +  3 2
 ───────
    9 6
```

Addition - Year Five

♦ Add whole numbers with more than 4 digits, including using formal written method (columnar addition)

♦ Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.

Continue to teach the use of **empty number lines** with larger numbers (and decimals), as appropriate.

Continue to develop the formal written method for addition with larger numbers (and decimal numbers) and with the addition of three or more numbers:

21848 + 1523 = 23371

```
   21848
 +  1523
 ───────
   23371
    1  1
```

Continue to use the language of place value to ensure understanding. Ensure that the digits that have been 'carried' are recorded under the line in the correct column.

Use the formal written method for the addition of decimal numbers:

£254.75 + £233.82 = £388.57

```
    254·75
 + 233·82
 ────────
   488·57
      1
```

Ensure that the decimal points line up.

Addition - Year Six

No objectives have been included in the programmes of study explicitly related to written methods for addition in Year 6. However, there is an expectation that children will continue to practise and use the formal written method for larger numbers and decimals and use these methods when solving problems, when appropriate (see previous year's guidance for methods).

Our aim is that by the end of Year 6, children use mental methods (with jottings) when appropriate, but for calculations that they cannot do in their heads, they use an efficient formal written method accurately and with confidence.

Stages in Addition

Mental methods of calculation

Oral and mental work in mathematics is essential, particularly so in calculation. Early practical, oral and mental work must lay the foundations by providing children with a good understanding of how the four operations build on efficient counting strategies and a secure knowledge of place value and number facts.

Later work must ensure that children recognise how the operations relate to one another and how the rules and laws of arithmetic are to be used and applied.

Addition - Early Stages (EYFS)

Children will engage in a wide variety of songs and rhymes, games and activities.

They will begin to relate addition to combining two groups of objects, first by counting all and then by counting on from the largest number.

They will find one more than a given number up to 20 and beyond.

In practical activities and through discussion they will begin to use the vocabulary involved in addition.

'You have five apples and I have three apples. How many apples altogether?'

Addition - Year One

♦ Given a number, identify one more and one less

♦ Read, write and interpret mathematical statements involving addition (+) and the equals (=) sign

♦ Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least

♦ Add one- digit and two-digit numbers within 20, including zero

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

♦ Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as

7 = ☐ – 9.

Count on from the largest number
8 + 7 = 15

$+1 \quad +1 \quad +1 \quad +1 \quad +1 \quad +1 \quad +1$
8   9   10   11   12   13   14   15
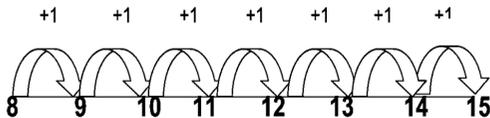
Addition - Year Two

♦ Add numbers using concrete objects, pictorial representations, and mentally, including:

A two digit number and ones

A two digit number and tens

Two two-digit numbers

Three one-digit numbers

♦ Solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures

♦ Applying their increasing knowledge of mental and written methods

Count on in tens
28 + 30 = 58

+10   +10   +10
28   38   48   58
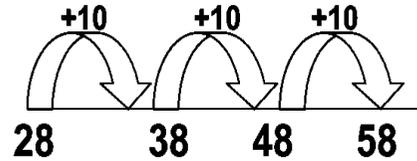
Count on in tens efficiently
48 + 36 = 84

+ 30   +2   +4
48   78   80   84
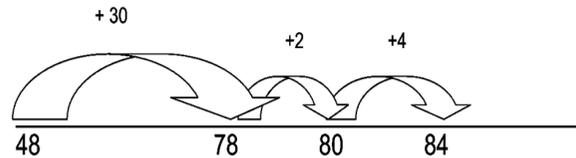
Partitioning
43 + 25 = 68

43 + 25 = 68
40 + 20 = 60
3 + 5 = 8
60 + 8 = 68

Expanded written method
64 + 32 = 96
  60 + 4
+ 30 + 2
  90 + 6 = 96

```
  6 4
+ 3 2
    6
   90
   96
```

Addition - Year Three

♦ Add numbers with up to three digits, using formal written method of columnar addition

♦ Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.

Further develop the use of the empty number line with calculations that bridge 100:

+ 40   +6
78   118   124
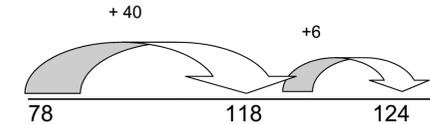
78 + 46 = 124

Further develop the partitioning method with calculations that bridge 100:

85 + 37 = 80 + 5 + 30 + 7
80 + 30 = 110
5 + 7 = 12
110 + 12 = 122
85 + 37 = 122

Then use the expanded column method

Formal method without carrying

64 + 32

```
  6 4
+ 3 2
  9 6
```

Formal method with carrying

377 + 546

```
  377
+ 546
  923
```