Progression in Addition

Stage 1:

Children begin by counting physical objects and using pictorial representations. They will then use these to solve simple addition problems.

Example:

How many frogs?

Stage 2:

They will continue to use practical resources to support calculation. They will begin to use a number line.

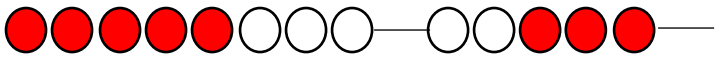
Example:

For 2 + 3, place the finger on 2 and then count on 3 to get to 5.

Bead strings can be used to illustrate addition including bridging through ten.

Example:

By counting on 2 then counting on 3 when calculating 8+5.

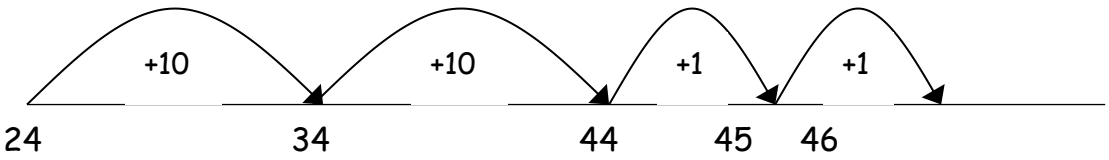


Stage 3:

Children will begin to use empty number lines themselves, always starting with the larger number first. They will begin by counting on in tens and ones.

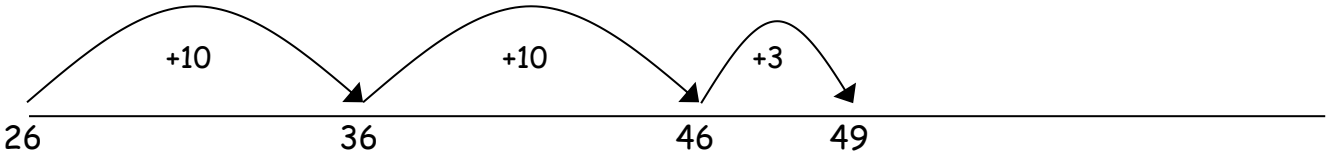
Example:

24 + 22 =



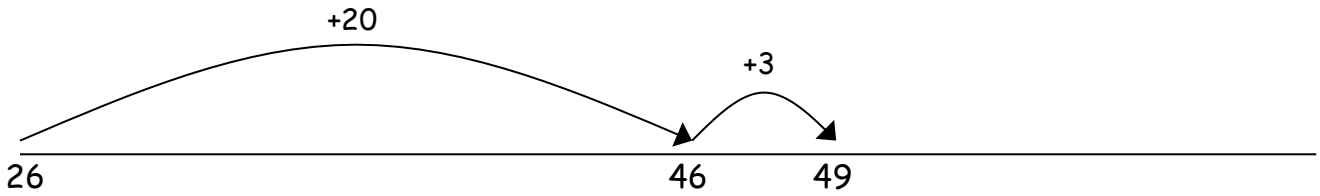
Then they will develop this to become for efficient by adding the units in one jump.

Example: 26 + 23 = 49



Followed by adding the tens in one jump and the units in one jump:

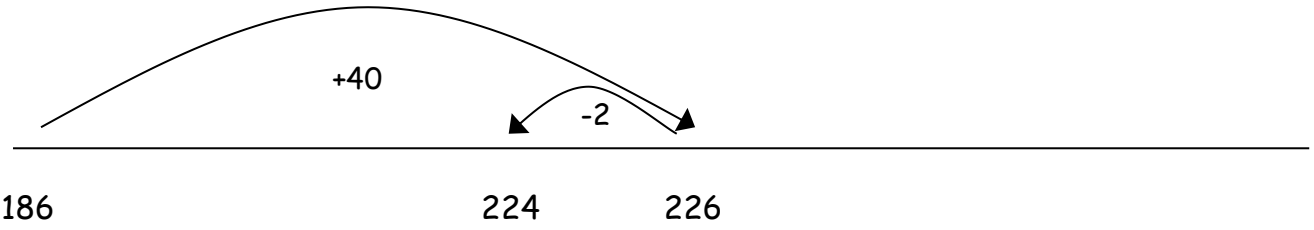
Example: 26 + 23 = 49



Stage 4:

Children will continue to use empty number lines with increasingly large numbers including compensation where appropriate:

Example: 38 + 186 = 224



Children will **begin** to use jottings to support, record and explain mental methods building on existing strategies.

Example:
Partitioning - record mental methods using partitioning.

Example:
47 + 76 = 76 + 40 + 7 = 116 + 7 = 123

Leading to:
70 + 6
40 + 7
110 + 13 = 123

Stage 5:

This will then be developed on to using the expanded column method to prepare for carrying.

Example:

```
  2 6 7
+   8 5
    1 2 (7 + 5)
  1 4 0 (60 + 80)
  2 0 0 (200 + 0)
  3 5 2
```

From this, children will begin to carry below the line.

Example:

```
  3 6 7          2.84
+   8 5        + 1. 36
  4  5  2        4. 20
  1  1           1  1
```

It is important that children know that the decimal points should line up under each other, particularly when adding or subtracting mixed amounts (e.g. £2.59 + 86p).

Stage 6:

Children should extend the carrying method to numbers with at least four digits, including decimals in a range of contexts for example, money and measurement.

Children should use their understanding of addition to add fractions with the same denominator and fractions with denominators of the same number

Example:

$\frac{2}{5} + \frac{2}{5} = \frac{4}{5}$ $\qquad$ $\frac{2}{3} + \frac{3}{4} = \frac{17}{12}$ or $1\frac{5}{12}$

Stage 7:

Children should extend the carrying method to numbers with any number of digits, including decimals and apply their understanding of addition and equivalent fractions to add fractions with different denominators and mixed numbers:

Example:

$\frac{1}{2} + \frac{1}{8} = \frac{5}{8}$