

## ADDITION GUIDELINES

### Year One

#### + = 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'.

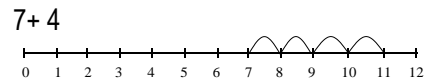
$$\begin{aligned} 2 &= 1 + 1 \\ 2 + 3 &= 4 + 1 \\ 3 &= 3 \\ 2 + 2 + 2 &= 4 + 2 \end{aligned}$$

Missing numbers need to be placed in all possible places.

$$\begin{aligned} 3 + 4 &= \square & \square &= 3 + 4 \\ 3 + \square &= 7 & 7 &= \square + 4 \\ \square + 4 &= 7 & 7 &= 3 + \square \\ \square + \nabla &= 7 & 7 &= \square + \nabla \end{aligned}$$

#### The Number Line

Children use a numbered line to count on in ones. Children use number lines and practical resources to support calculation and teachers *demonstrate* the use of the number line.



#### Resources

Use a range of ways to represent their learning: dienes (tens and ones) apparatus, cuisinere rods, money, straws, 100 squares, beadstrings, cubes, beads, counters, etc, number frames, grids and tables. Outdoor games, board games, songs and rhymes.

### Year Two

#### + = signs and missing numbers

Continue using a range of equations as in Year 1 but with appropriate, larger numbers. Extend to

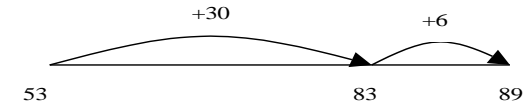
$$\begin{aligned} 14 + 5 &= 10 + \square \\ \text{and} \\ 32 + \square + \square &= 100 & 35 &= 1 + \square + 5 \end{aligned}$$

#### Partition into tens and ones and recombine

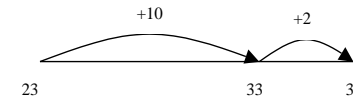
- Partition both numbers and recombine.
- $$\begin{aligned} 12 + 23 &= 10 + 2 + 20 + 3 \\ &= 30 + 5 \\ &= 35 \end{aligned}$$

#### Count on in tens and ones

- Count on by partitioning the second number only e.g.
- $$\begin{aligned} 36 + 53 &= 53 + 30 + 6 \\ &= 83 + 6 \\ &= 89 \end{aligned}$$



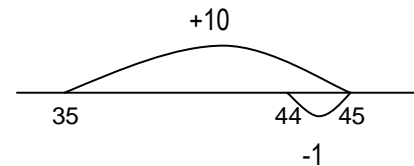
$$\begin{aligned} 23 + 12 &= 23 + 10 + 2 \\ &= 33 + 2 \\ &= 35 \end{aligned}$$



#### Add 9 or 11 by adding 10 and adjusting by 1

e.g.

Add 9 by adding 10 and adjusting by 1

$$35 + 9 = 44$$


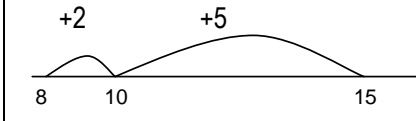
**The Empty Number Line:**  
**Partitioning and bridging through 10.**

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.

$$8 + 7 = 15$$



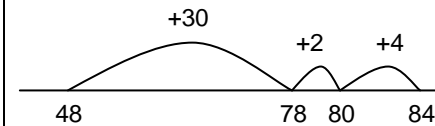
**Add a near multiple of 10 to a two-digit number**

Secure mental methods by using a number line to model the method.

e.g.  $35 + 19$  is the same as  $35 + 20 - 1$ .

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

$$48 + 36 = 84$$



**Pencil and paper procedures**

$$83 + 42 = 125$$

*either*

*or*

**1. Vertical expansion**

$$\begin{array}{r} 83 \\ + 42 \\ \hline 5 \\ \hline 120 \\ \hline 125 \end{array}$$

**2. Horizontal expansion**

$$\begin{array}{r} 80 + 3 \\ + 40 + 2 \\ \hline 120 + 5 = 125 \end{array}$$