

PROGRESSION THROUGH CALCULATIONS FOR ADDITION



MENTAL CALCULATIONS

Being able to add numbers mentally without pencil and paper is very important and there is a set amount of time during each lesson where this can be practised. A variety of mental strategies are taught throughout school eg:

number bonds ($6 + 4 = 10$; $25 + 75 = 100$);

near doubles ($6 + 7 = \text{double } 6 + 1 = 13$),

counting on in repeated steps ($86 + 57 = 143$ count on in tens and then in ones);

adding on 10 or 100 and adjusting;

Using the relationship between addition and subtraction

$$36 + 19 = 55 \quad 55 - 19 = 36$$

WRITTEN CALCULATIONS

The term **sum** is used as another way of finding the total and refers to addition only, e.g find the sum of $5+6$.

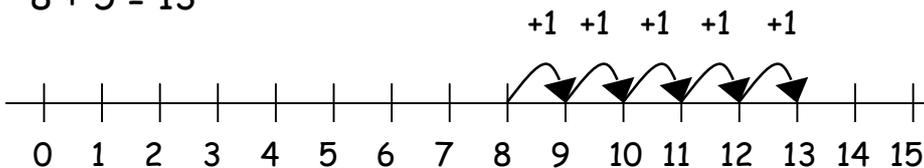
The term **calculation** or number sentence is used to refer to the number problem being solved.

("Solve the calculation not solve the sum!")

Reception / Y1

Children use practical resources to support calculation using pictures, tallies and objects and then move on to using number lines and hundred squares to count on.

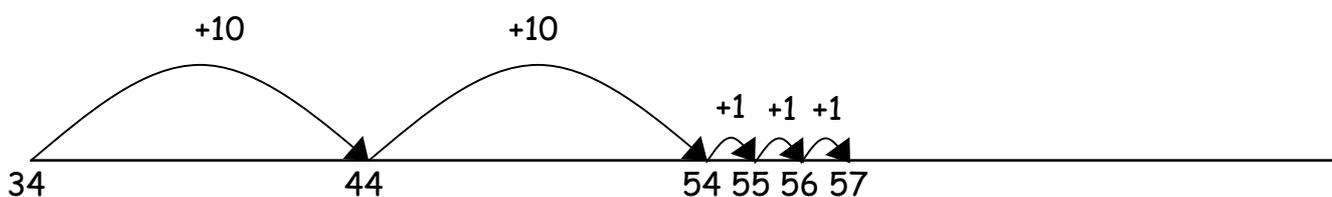
$$8 + 5 = 13$$



Y2

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

$$34 + 23 = 57$$



Then helping the children to become more efficient by adding the units in one jump (by using the known fact $4+3=7$).

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

Y3/4

During Years 3 & 4 children will build on existing mental strategies with increasingly large numbers and begin to use formal pencil and paper methods. They will use the Column Method, adding from right to left, and carrying when necessary.

$$\begin{array}{r} 625 \\ + 48 \\ \hline 673 \\ \hline \end{array}$$

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Informal pencil and paper

$$67 + 24 =$$

$60 + 7$ $20 + 4$

$80 + 11 = 91$

Y5/6

Children will extend the carrying method to numbers with at least four digits. They will also use written addition methods to add decimals, including money and measurements.

$$\begin{array}{r} 3587 \\ + 675 \\ \hline 4262 \\ \hline \end{array}$$

1 1 1

Children will learn to add several numbers with different number of digits.

Know that the decimal points should line up under each other, particularly when adding or subtracting mixed amounts, e.g $\text{£}3.59 + 78\text{p}$