

Redhill Primary School

Written Calculation Strategies—Year 3

Addition

In year 3 the children are encouraged to refine their written methods to using more formal methods of calculating (including the use of columns)

$$\begin{array}{r} \underline{355 + 143} \\ 300 + 50 + 5 \\ + \quad \underline{100 + 40 + 3} \\ \underline{400 + 90 + 8} = 498 \end{array}$$

This should begin without crossing the next boundary (of 10, 100, 1000). Once children are secure with the method, they should use numbers which cross the boundaries before moving to the more compact method by the end of the year.

This leads to . . .

$$\begin{array}{r} 355 \\ + \quad \underline{143} \\ \quad \quad 8 \\ \quad \quad 90 \\ \quad \quad \underline{400} \\ \quad \quad \underline{498} \end{array}$$

- With expanded methods, numbers can be added in either order (use of units first is most useful for moving children towards the more compact method when crossing the tens boundary and carrying the digit across)
- If children are unsure, revert back to the expanded methods of addition until they are ready to move on.

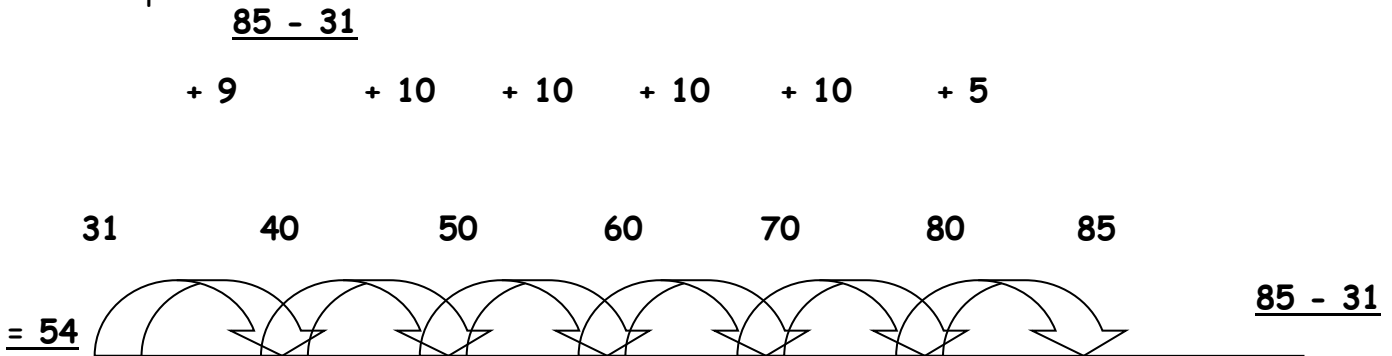
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Subtraction

In year 3 the children mainly use the number line method, counting on from the smaller number, to complete subtraction problems which they cannot do mentally. They are encouraged to add on to the next multiple of 10 and then count on in 10s or multiples of 10.

For example:



For most children this will be simplified further:

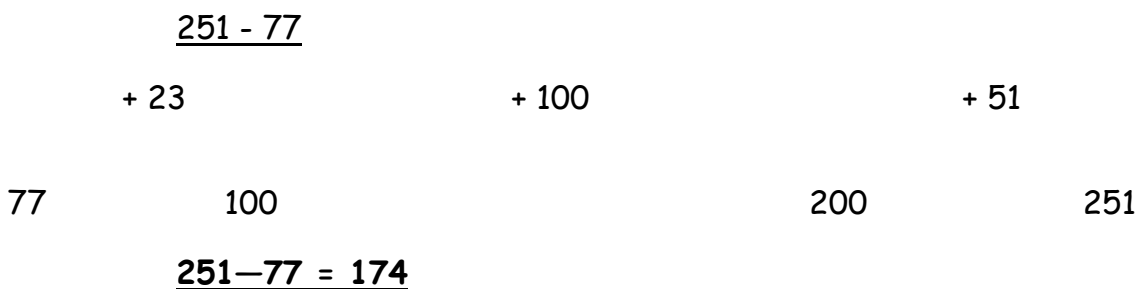
- by adding on in one jump of 40 from 40 to 80



Children will then be able to use their knowledge of number bonds to digit numbers.

when working with 3

For example:



Multiplication

In year 3 the children are encouraged to use the grid method to solve multiplication questions which involve larger numbers. This involves splitting the numbers into parts (partitioning) and multiplying each part together.

For example:

$$\underline{24 \times 4}$$

	x	20	4
4		80	16

$$80 + 16 = 96$$

$$\underline{24 \times 4 = 96}$$

Division

In year 3 the children are taught to complete division problems by counting up in chunks, from zero to the starting number. They use what they know by adding on "groups of" from their times-tables knowledge. They start by counting on 1 lot at a time and then extend to groups of lots (eg: 2, 5 or 10)

For example:

$$\underline{24 \div 6}$$

0
1
6
1

12

18

24



1

1

$$\underline{24 \div 6 = 4}$$

$$\underline{72 \div 6}$$

0

10

$$10 \times 6 = 60$$

60

2

72



$$2 \times 6 = 12$$

$$\underline{72 \div 6 = 12}$$