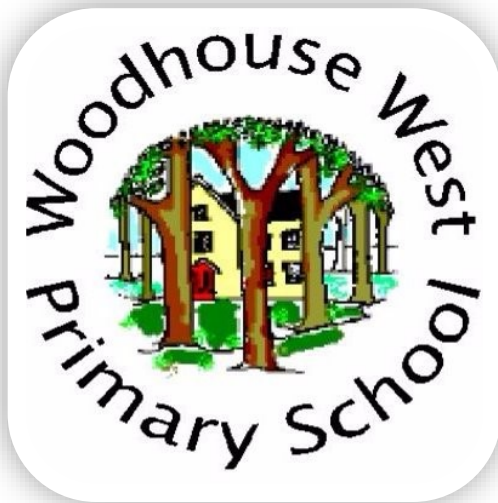
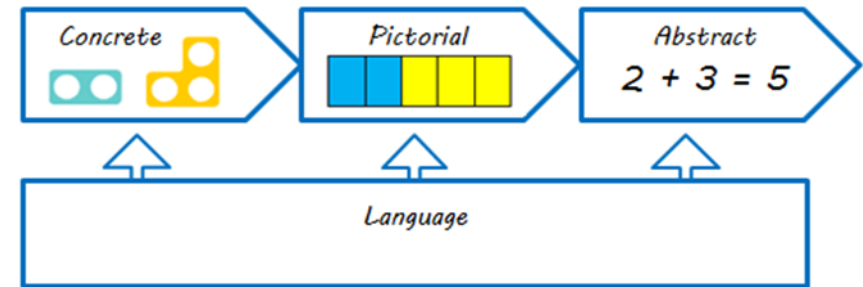




Analysis of previous learning has indicated that a simplified calculation strategy may assist learners in understanding the logic behind mathematical calculations. By avoiding the teaching of numerous different strategies, we can prevent confusion which, under pressure, causes children to make inappropriate decisions about how to tackle a question.

It is expected that children will move on to more formal calculation methods when they are ready to do so. The use of concrete manipulatives, such as numicon and Cuisenaire rods, will be maintained throughout school life, to reinforce the link with previous learning and maintain understanding.



Woodhouse West Primary School Maths Guide

Addition

Some of the methods you should expect to see in Y1 to Y6

Key Vocabulary

Add
Addition
Total
Sum
More/fewer
Integer
Estimation
Ones
Tens
Hundreds
thousands
Is equal to
Increase
Decrease
Negative numbers

Avoid:

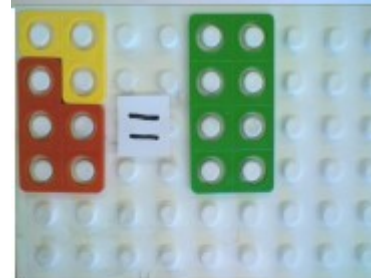
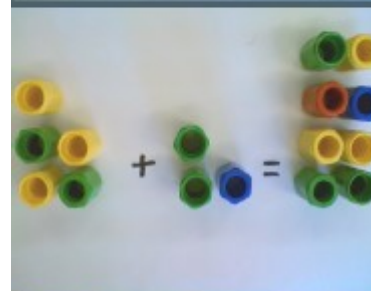
equals, units, sum if used for other operations

Year One

Practical addition

Counting objects moving on to practical methods of addition, using a range of physical apparatus.

$$5 + 3 = 8$$



This number sentence could be shown in a range of ways e.g..

$$8 = 5 + 3$$

$$3 + \square = 8$$

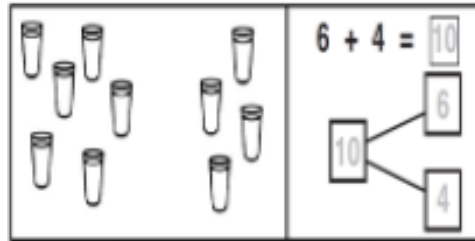
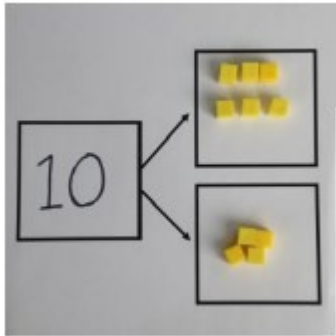
$$\square + 3 = 8$$

Year One

Part - Part - Whole method

Teach both addition and subtraction alongside each other, as pupils will use this model to identify the inverse link between them.

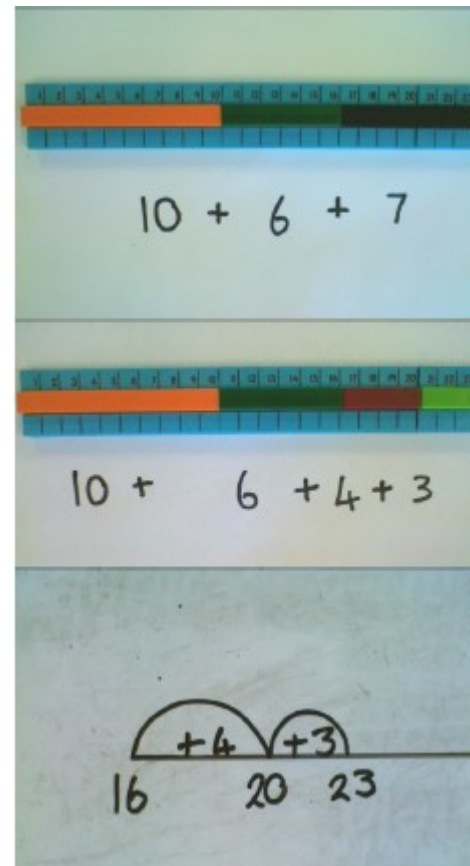
This model begins to develop the understanding of the commutativity of addition, as pupils become aware that the parts will make the whole in any order.



Year Two

Two digit plus ones number lines

Practical methods beginning to be represented by blank number lines. Understanding reinforced by repeating previous learning.

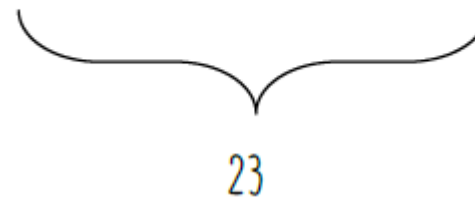


$$16 + 7 = 23$$



Bar Modelling

Links made between practical methods and bar representations.

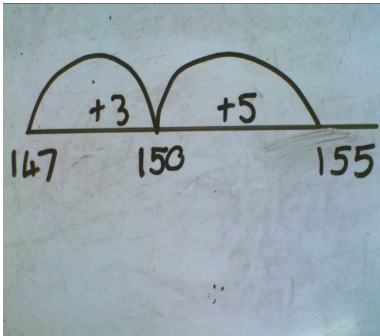


$$16 + 7 = 23$$

Lower Key Stage Two

Number lines build on previous learning, helping with the transition to more formal recording. Bar modelling methods and other pictorial representations support deeper mathematical understanding throughout LKS2.

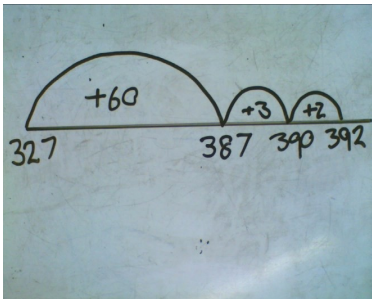
Three digits plus one digit.



$$147 + 3 + 5 = 155$$

$$147 + 8 = 155$$

Three digits plus two digits.



$$327 + 60 + 3 + 2 = 392$$

$$327 + 65 = 392$$

Partitioning Reinforced by adding multiples of ten

$$\text{eg. } 163 + 50 =$$

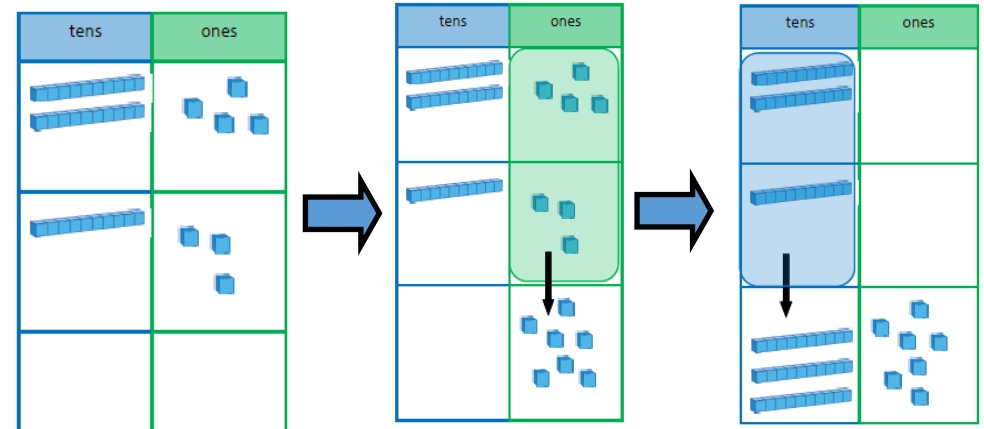
$$435 + 300 =$$

Lower Key Stage Two

Column addition should be introduced when children understand the previous concepts. It helps to organise learning and prevent unnecessary mistakes. When being introduced this should be done along side concrete manipulatives and pictorial representations.

Column Addition without regrouping

$$\begin{array}{r} 24 \\ 13 \\ \hline 37 \end{array}$$

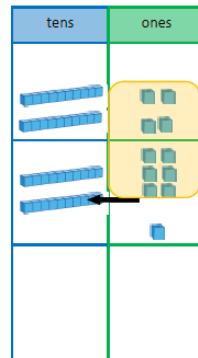


Lower Key Stage Two

Column Addition with regrouping

1. First add the ones

tens	ones
2	4
+ 1	7
1	1



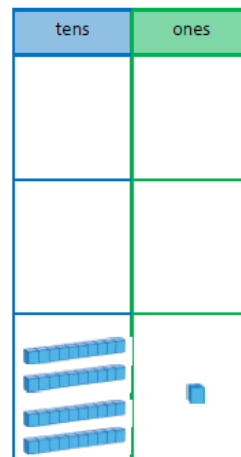
Regroup the ones.

11 ones = 1 ten and 1 one

2. Then add the tens.

tens	ones
2	4
+ 1	7
1	1
4	1

2 tens + 1 ten + 1 ten = 4 tens



So, $24 + 17 = 41$

THREE DIGITS PLUS TWO DIGITS → THREE DIGITS PLUS THREE DIGITS → LARGER NUMBERS → MONEY

Upper Key Stage Two

The column method will continue to be used alongside visual apparatus to support understanding.

$$\begin{array}{r}
 68742 \\
 + 9449 \\
 \hline
 78191
 \end{array}$$

Larger values

$$\begin{array}{r}
 68.74 \\
 4.708 \\
 \hline
 73.448
 \end{array}$$

Decimals with differing numbers of decimal places.

Once these techniques have been mastered children will apply their understanding in a range of problem solving contexts, including mastery questions with promote higher order thinking skills.