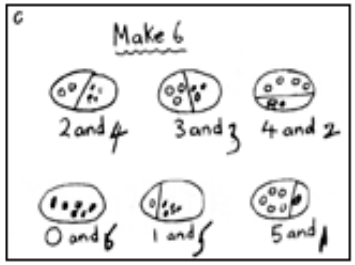
Progression in Written Addition

Stage 1a- Counting all



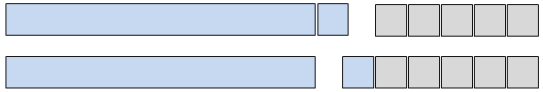
Children are taught that addition is the combining of two or more amounts. They begin by counting all of the items in the groups, then move on to counting on from the largest amount. Children are encouraged to develop a mental image of the size of numbers. They learn to think about addition as combining amounts in practical, real life situations.
They begin to record addition number sentences such as
2 + 4 = 6 and 8 = 3 + 5 and 3 + 2 + 4 = 9
Children use numicon and a range of counting resources to combine numbers and groups of objects.

Stage 1b - Counting on

Next they learn to add on from a group or number eg for 3+2 they would say 3,4,5 when counting. At this stage it is important that children can count ON from a given number before moving on.

Stage 2a- Adding 2 digit numbers – most significant first

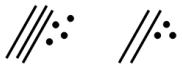
Children move on to using Base 10 equipment to support their developing understanding of addition.
11 + 5 = 16
11 cubes are lined up (1 ten and 1 unit/one).
5 cubes are added to the line of 11 giving a total of 16.



If possible, use two different colours of base 10 equipment so that the initial amounts can still be seen.

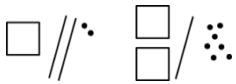
Stage 2b

Children move to using base ten equipment to make and partition two digit numbers and add the tens first, followed by the units.
Eg 34+23



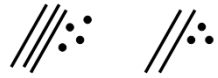
They begin to make jottings of the tens and units as shown.

Where the units bridge ten, as in 28+36, the children learn to exchange the ten units for a tens rod, and then progress to making jottings of this as shown.
20+30=50, 8+6=14 exchange 10 so
20+30+10=60 60+4=64
Children can progress to adding three digit numbers drawing a square for one hundred.



Stage 3 –adding two digit numbers – least significant first

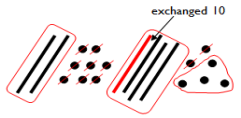
Children continue to use the practical Base 10 equipment. They will record their own drawings of the Base 10 equipment, using lines for 10 rods and dots for the unit blocks. At this stage the children begin to add the units first.
34 + 23 = ?
The units/ones are added first 4 + 3 = 7
The tens are added next
30 + 20 = 50
Both answers are put together 50 + 7 = 57



Least significant first and exchange

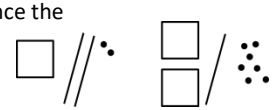
When bridging ten as in 28 + 36 = ?
The units/ones are added first
8 + 6 = 14 with ten units/ones exchanged for 1 ten.

A ring is put around the units/ones not exchanged – this is the units part of the answer. The tens are then added, including the exchanged ten, to complete the addition.

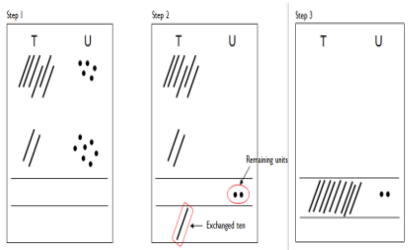


Adding three digit numbers

This method can also be used with adding three digit numbers, e.g. 122 + 217 using a square to represent 100. Once the children are confident in exchanging units, they can also move on to exchanging ten tens for a hundred using the practical resources.



Stage 4 Children place the base ten on a place value mat to support their understanding of exchange between columns eg 65 + 27. Children should utilise this practical method to link their understanding of exchange to how the column method is set out. Teachers should model the written method alongside this practical method initially. This should progress to children utilising the written and practical methods alongside each other and finally, and when they are ready, to children utilising just the written method. By the end of year 3, children should also extend this method for three digit numbers.



Written method

Step 1	Step 2	Step 3
T U	T U	T U
6 5	6 5	6 5
+ 2 7	+ 2 7	+ 2 7
	2	9 2
	1	1

Stage 5

HTU			
625	367	321	£3.48
+ 48	+ 85	+ 7	+ £0.78
673	452	+ 48	£4.26
1	11	376	1 1
		1	

This is the final stage of the method, and should be continued to be used for all written addition calculations.
The example top left would be 'said' as follows:
5 + 8 = 13, put 3 down and carry the 10
20 + 40 + 10 that was carried over = 70 *(7 written in the tens column)*
600 + 0 = 600 *(6 written in the hundreds column)*

Children will be expected to use this method for adding numbers with more than 3 digits, numbers involving decimals and adding any number of amounts together.

See the detailed progression in written addition document for more information about each of the stages.

Please note that this progression is for WRITTEN calculation – Children should be encouraged to consider if a mental calculation would be appropriate before using written methods.

Children should not be made to go onto the next stage if:

1) **they are not ready.**
2) **they are not confident.**