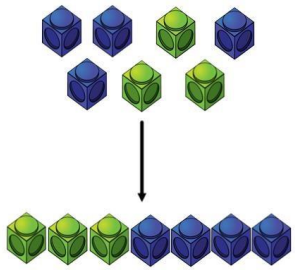
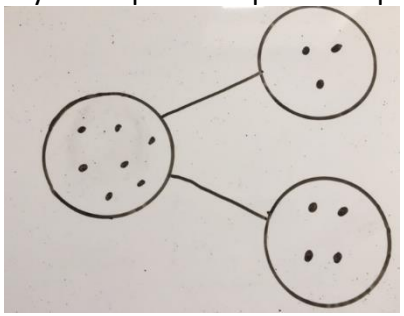
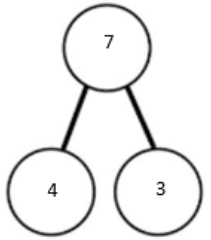
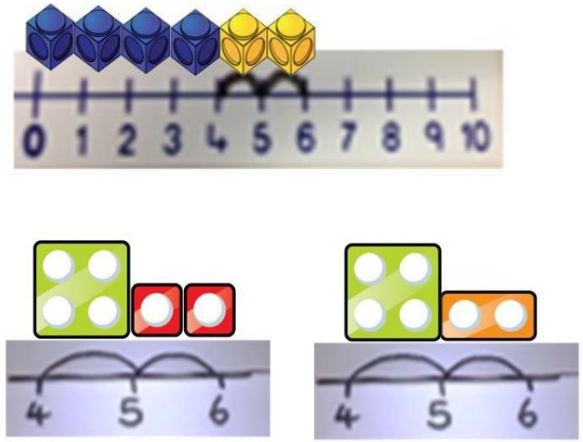
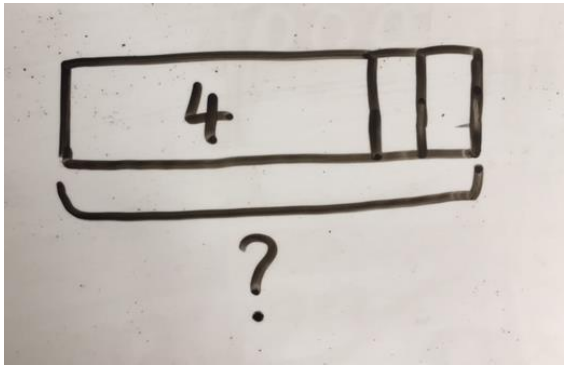
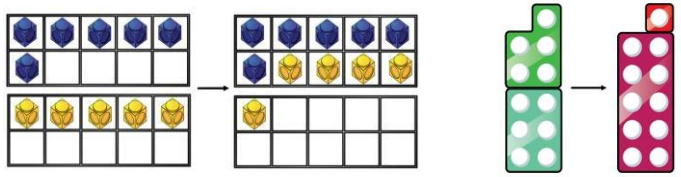
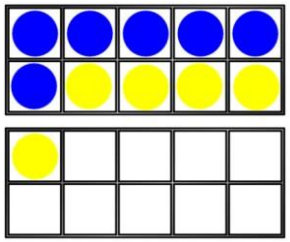
Duxford Church of England Community Primary School

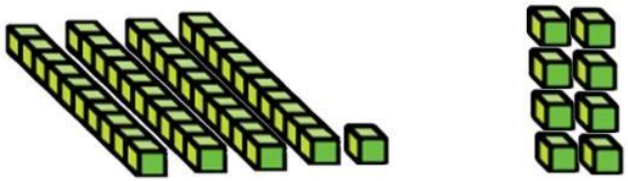
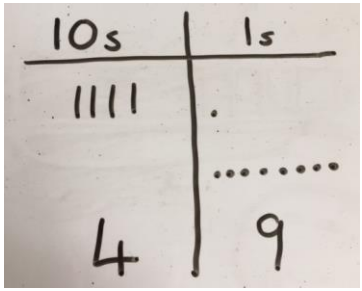
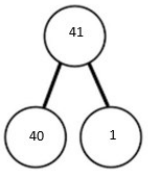
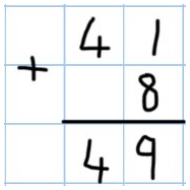
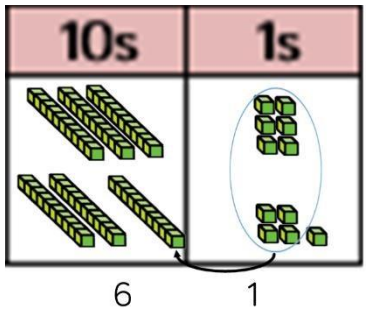
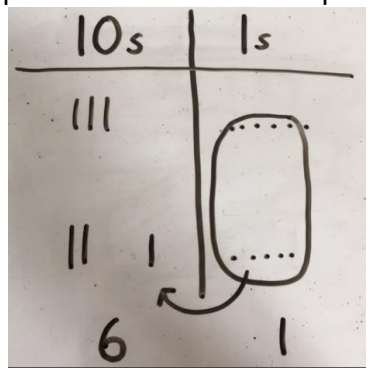
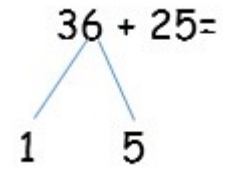
Calculation Policy adapted from White Rose Maths HubProgression in Calculations – supported with a rich use of vocabulary and discussion throughout using 'stem sentences'

Calculation policy: Addition

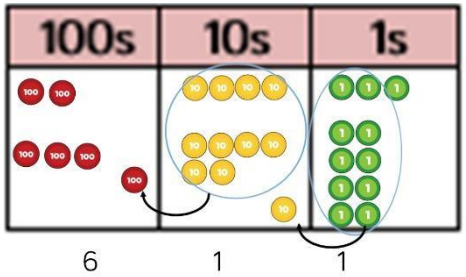
Key language: sum, total, parts and wholes, plus, add, altogether, more, 'is equal to' 'is the same as'.

Concrete/ Build it	Pictorial / Draw it	Abstract/ Write it/ Say it
Combining two parts to make a whole (use other resources too e.g. eggs, shells, teddy bears, cars). 	Children to represent the cubes using dots or crosses. They could put each part on a part whole model too. 	4 + 3 = 7 Say it: Four is a part, three is a part and seven is the whole. 

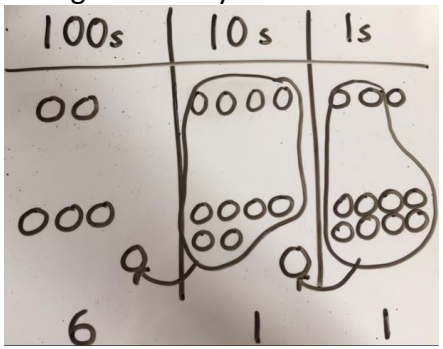
Counting on using number lines using cubes or Numicon. 	A bar model which encourages the children to count on, rather than count all. 	The abstract number line: 2 + 4= 6 Say it: 2 more than 4 is 6 The sum of 2 and 4 is 6 The total of 4 and 2 is 6
Regrouping to make 10; using ten frames and counters/cubes or using Numicon.  6 + 5	Children to draw the ten frame and counters/cubes. 	Children to develop an understanding of equality e.g. 6 + □ = 11 6 + 5 = 5 + □ 6 + 5 = □ + 4 Say it: The equals sign balances the totals on each side.

TO + O using base 10. Continue to develop understanding of partitioning and place value. 41 + 8 	Children to represent the base 10 e.g. lines for tens and dot/crosses for ones. 	41 + 8  1 + 8 = 9 40 + 9 = 49  Say it: the ones total nine the tens total forty. I recombine to make forty nine.
TO + TO using base 10. Continue to develop understanding of partitioning and place value. 36 + 25 	Chidlren to represent the base 10 in a place value chart. 	Looking for ways to make 10.  30 + 20 = 50 5 + 5 = 10 50 + 10 + 1 = 61 Formal method: 36 +25 61 1 Say it: I exchange 11 ones for 1 ten and 1 one

Use of place value counters to add HTO + TO, HTO + HTO etc. When there are 10 ones in the ones column we exchange for 10 ones. When there are 10 tens in the tens column we exchange for 1 hundred.



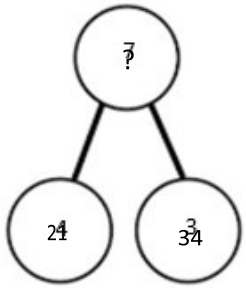
Children to represent the counters in a place value chart, circling when they make an exchange.



$$\begin{array}{r} 243 \\ +368 \\ \hline 611 \\ \hline 1\ 1 \end{array}$$

Say it: I exchange 11 ones for 1 ten and 1 one. I exchange 11 tens for 1 hundred and 1 ten.

Conceptual variation; different ways to ask children to solve 21 + 34



?	
21	34

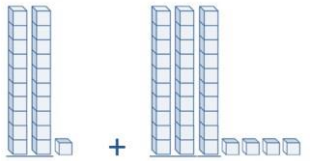
Word problems:
In year 3, there are 21 children and in year 4, there are 34 children.
How many children in total?

21 + 34 = 55. Prove it

$$\begin{array}{r} 21 \\ +34 \\ \hline \\ \hline \end{array}$$

21 + 34 = $\square$ = 21 + 34

Calculate the sum of twenty-one and thirty-four.



Missing digit problems:

10s	1s
10 10	1
10 10 10	?
?	5