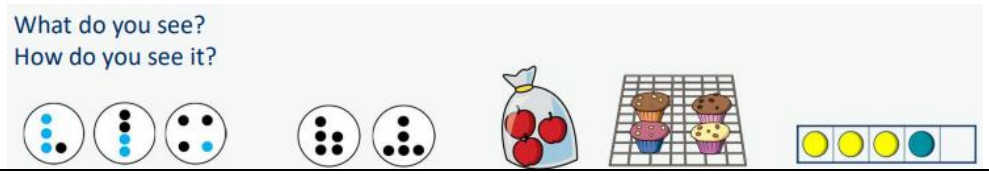
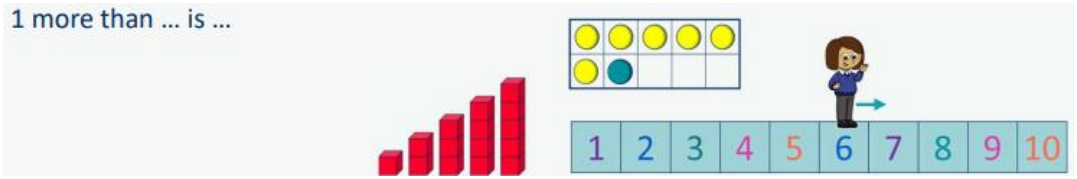
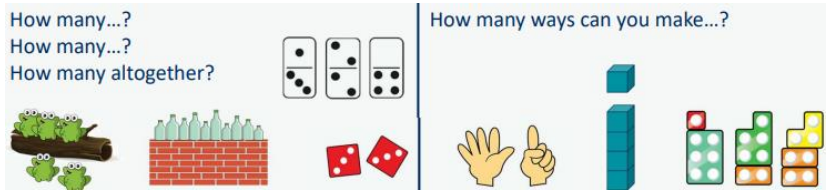
Walton Oak - Addition Calculation Policy

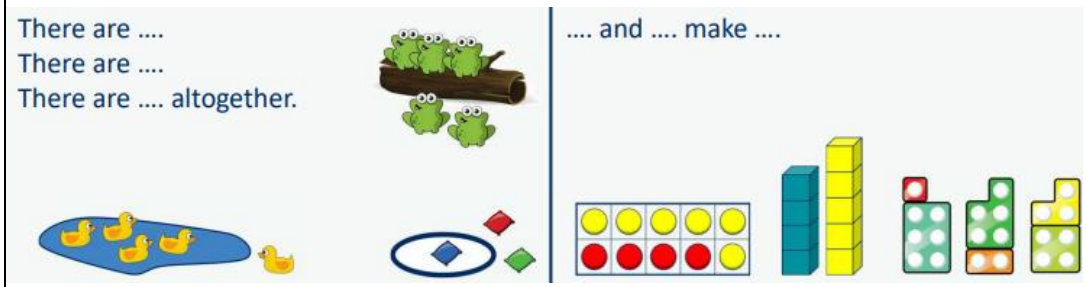
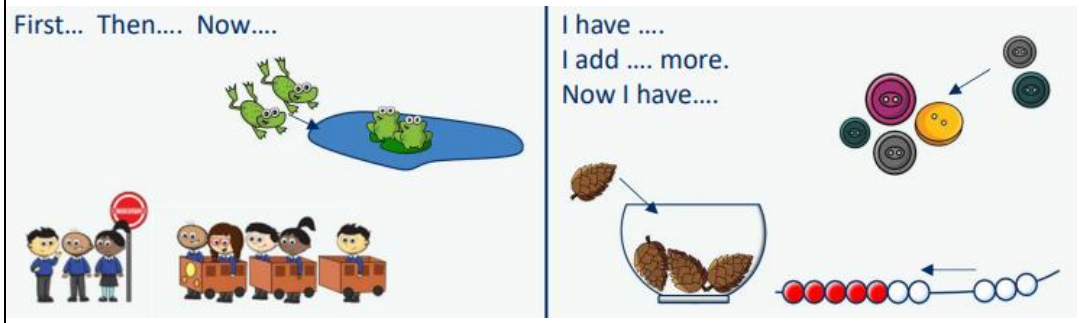
Key language: sum, total, parts and wholes, plus, add, altogether, more, 'is equal to' 'is the same as'.

Nursery	
Fluency	**End of year expectations**
Subitise to 3 and instantly see how many Count how many – begin to count objects using 1-1 correspondence Make numbers to 5, start by showing 1,2 and 3 using fingers Add 1 more through stories, songs and rhymes	Begin to have an understanding of numbers to 5 - focusing on noticing and representing small quantities, perceptual subitising and counting.

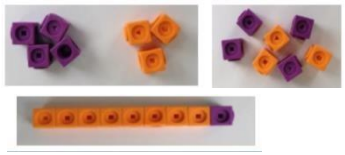
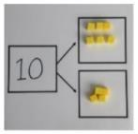
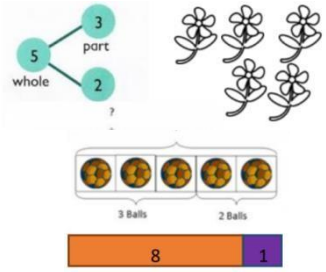
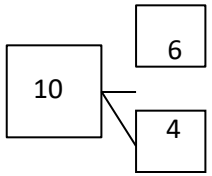
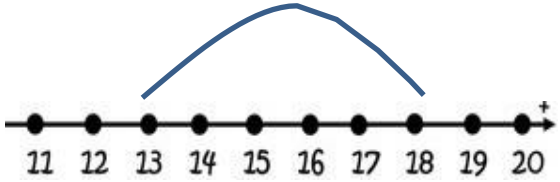
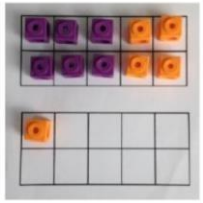
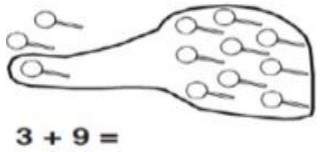
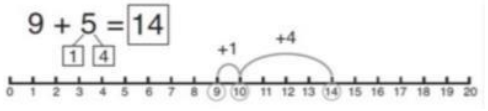
Objective and strategy	Key representations
Subitise to 3	
Count how many	
Make numbers to 5	
Add 1 more	

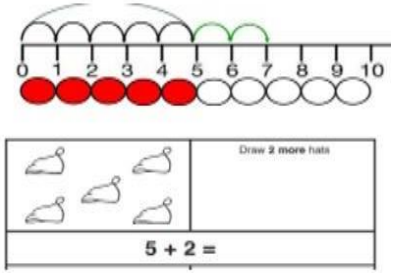
Reception	
Fluency	**End of year expectations**
Have a deep understanding of numbers to 10, including the composition of each number Conceptually subitise to 5 and notice the parts that make up the whole 1 more – continuing to link to stories, songs and rhymes Notice the composition of numbers within 10 and link to stories, songs and rhymes Combine 2 groups to find the total Automatically recall number bons up to 5 and some number bonds up to 10, including double facts Add more showing when a quantity is increased	Have a deep understanding of numbers to 10, including the composition of each number. Subitise (recognise quantities without counting) up to 5 Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 and some number bonds to 10, including double facts.

Objective and strategy	Key representations
Conceptually subitise to 5	
1 more	
Notice the composition of numbers within 10	

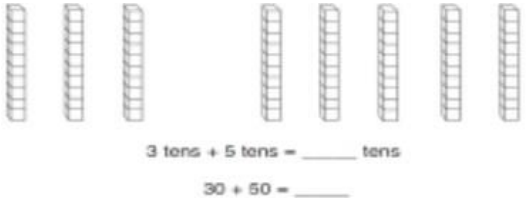
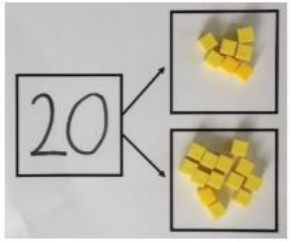
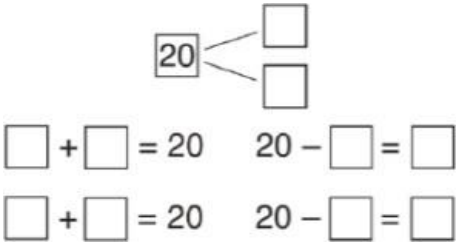
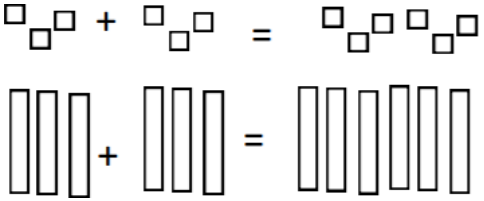
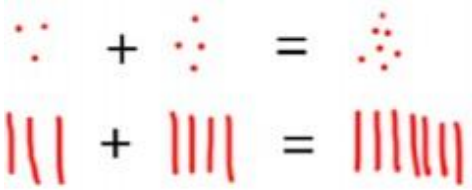
Combine 2 groups	
Add more	

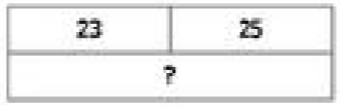
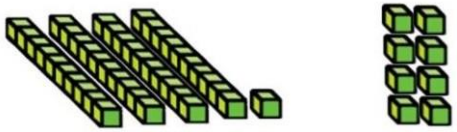
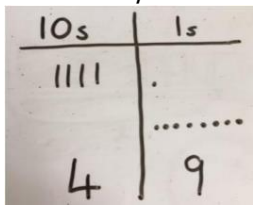
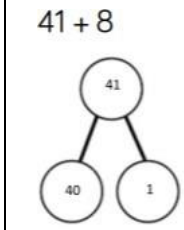
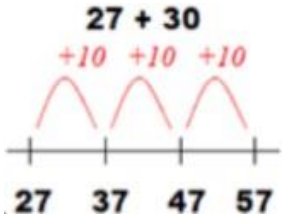
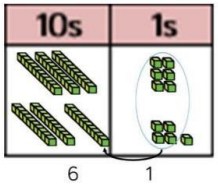
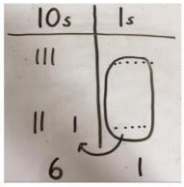
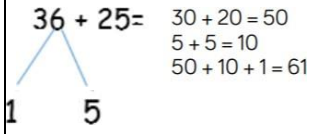
Year 1	
Fluency	**End of year expectations**
Count forwards, to and across 100, beginning with 0 or 1or from any given number Switch count between tens and ones e.g. 10, 20, 30,31, 32, 33 … Represent and use number bonds up to 20 (establish addition and subtraction as related operations) Find one more than a number Find ten more than a number Read, write and interpret mathematical statements involving addition (+) and the equals (=) signs Add 1-digit and 2-digit numbers to 20, including zero Add together and add more	O + O TO + O Numbers up to 20 (including adding zero) Children must experience combining two, and then morethan two groups of objects using counting on and the language of addition e.g. add, plus, more Children must experience increasing numbers e.g. what is two more than seven? Compare quantities to say how many less and/or how many more Solve one-step problems that involve addition, using concrete objects and pictorial representations, and missing number problems such as 7 = __ + 2

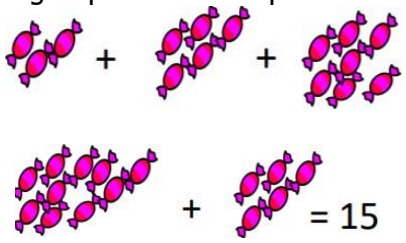
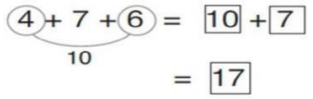
Objective and strategy	Concrete (build it)	Pictorial (draw it)	Abstract (write it)
Combining two parts to make a whole: **part-whole model**	 Use a part - part whole model. Use cubes to add two numbers together as a group or in a bar. 	Use pictures to add two numbers together as a group or in a bar. 	Use the part – part whole modelto move into the abstract. 10 = 4 + 6 
Starting at the bigger number and counting on	Start with the larger number on the bead string and then count on to the smaller number 1 by 1 to find the answer. 	Start at the larger number on the number line and count on in ones or in one jump to find the answer. 	Place the larger number in your head and count on the smaller number to find your answer. **5 + 12 = 17**
Regrouping to make 10. This is an essential skill for column addition later.	Start with the bigger number and use the smaller number to make 10. Use ten frames. (6 + 5) 	Use pictures or a number line. Regroup or partition the smaller number using the partpart whole model to make 10.  	7 + 4= 11 If I am at seven, how many more do I need to make 10.How many more do I add onnow? Children to develop an understanding of equality e.g.6 + □ = 11 6 + 5 = 5 + □ 6 + 5 = □ + 4

Represent &use number bonds and related subtraction facts within 20	2 more than 5 		Emphasis should be on the **language** '1 more than 5 is equal to 6.' '2 more than 5 is 7.' '8 is 3 more than 5.'

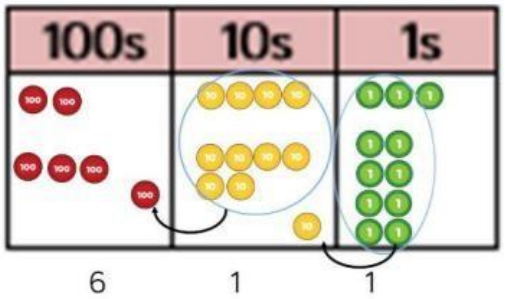
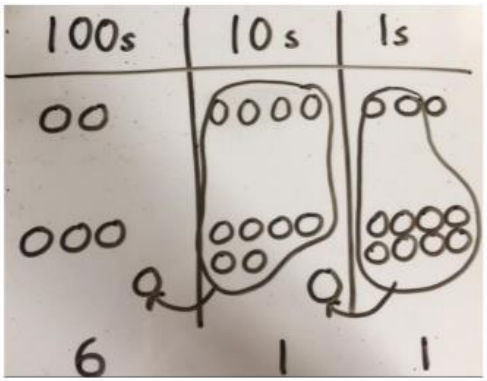
Year 2	
Fluency	**End of year expectations**
Show increasing fluency in deriving pairs of numbers up to10 and then up to 20 Add across a 10, add multiples of 10, add 10's to any number, add 2-digit numbers, add 2-digit numbers across 10. Use knowledge to derive and use number facts up to 100 Add ones to any number and make links to known facts Add three 1-digit numbers in any order Add numbers mentally including: TO + O TO + tens TO + TOO + O + O	Children should be able to partition numbers in differentways e.g., as 2+2+2+1 or 5+3 or 23 as 20 +3 or 10+13 TO + O TO + tens TO + TOO + O + O Children should use concrete objects, pictorial representations and add numbers in different contexts e.g.,money, measures Children should understand the language of sum. Ensure children understand that addition is commutative(can be done in any order)

Objective and strategy	Concrete (build it)	Pictorial (draw it)	Abstract (write it)
Adding multiples of ten	Model using dienes and bead strings50 = 30 + 20 	Use representations for base ten  	20 + 30 = 50 70 = 50 + 20 40 + □ = 60
Use known number facts Part part whole	Children explore ways of making numbers within 20  	 	
Using known facts	If I know that 3+3=6, I also know that 30+30=60 	Children draw representations of T and O 	3 + 4 = 7 *leads to* 30 + 40 = 70 *leads to* 300 + 400 = 700

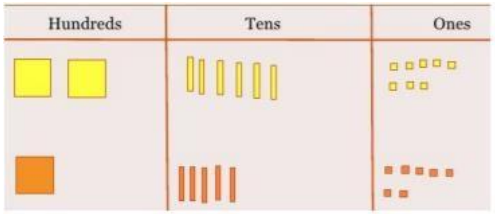
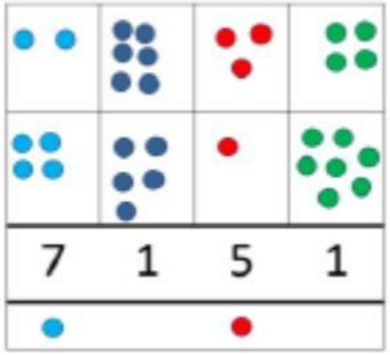
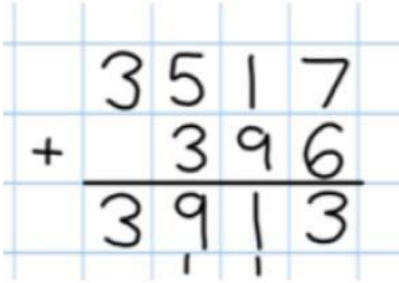
Bar model			
Add a two digit number and ones	TO + O using base 10. Continue to develop understanding of partitioning and place value. 41 + 8 	Children to represent the base 10 e.g. lines for tens and dot/crosses for ones 	
Add a 2 digit number and tens	25 + 10 = 35 Explore that the ones digit does notchange 		27 + 10 = 37 27 + 20 = 47 27 +__= 57
Add two 2-digit numbers	TO + TO using base 10. Continue to develop understanding of partitioning and place value. 36 + 25 	Children to represent the base 10 in aplace value chart 	Looking for ways tomake 10. 

Add three 1-digit numbers	Combine to make 10 first if possible, orbridge 1o then add third digit 	Regroup and draw representation. 	Combine the two numbers that make/ bridge ten then add onthe third. 

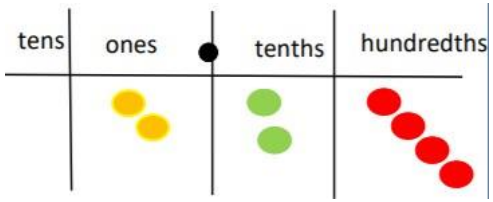
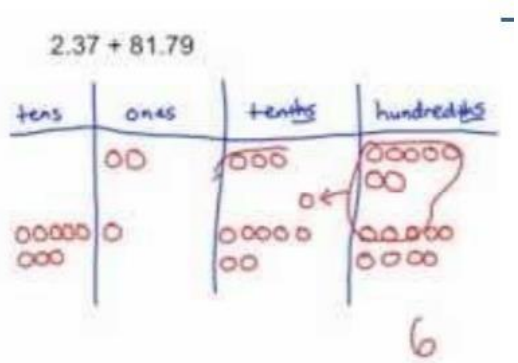
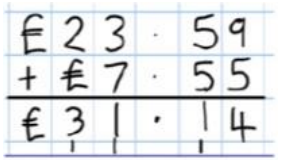
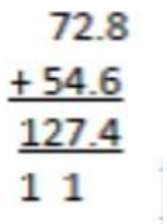
Year 3	
Fluency	**End of year expectations**
Count in ones, tens and hundreds maintaining fluency through varied and frequent practice (forwards and backwards) Count from 0 in multiples of 4, 8, 50 and 100Find 10 or 100 more than a number Mentally add HTO + ones, HTO + tens, HTO + hundreds Perform mental calculations with two-digit numbers, the answer could exceed 100 Complements to 100	Add numbers with up to three-digits (leading to formal written column method) Solve problems in different contexts including missing number problems Children should partition numbers, up to 1000, in differentways e.g. 100 + 40 + 6 or 100 + 30 + 16 Add fractions with the same denominator within 1 whole Calculate the time taken by particular events or tasks

Objective and strategy	Concrete (build it)	Pictorial (draw it)	Abstract (write it)
Column Addition	Use of place value counters to add HTO + TO, HTO + HTO etc. When there are 10 ones in the 1s column- we exchange for 1 ten, when there are 10 tens in the 10s column- we exchange for 1 hundred. 	Children to represent the counters in a place value chart, circling when they make an exchange. 	Move on to the formal column method of addition. Add the ones first, then the tens, then the hundreds. 243 +368 611 1 1

Year 4	
Fluency	**End of year expectations**
Count in 6s, 7s, 9s, 25s and 100s Find 1000 more than a number Perform mental calculations with increasingly largenumbers to aid fluency Add 1s, 10s and 100s to a 4-digit number Count backwards through 0 to include negative numbers	Add numbers with up to four-digits (formal written column method) Solve two-step problems in different contexts including missing number problems Add fractions and mixed numbers with the same denominator beyond 1 whole Solve simple measure and money problems involving fractions and decimals to 2 decimal places

Objective and strategy	Concrete (build it)	Pictorial (draw it)	Abstract (write it)
Add numbers with up to 4 digits	Children continue to use dienes or place value counters to add, exchanging ten ones for a ten and ten tens for a hundred and ten hundreds for a thousand. 	Draw representations using place value grid. 	Continue from previous work to carry hundreds as well as tens. Relate to money and measures. 

Year 5	
Fluency	**End of year expectations**
Count forwards in powers of ten up to 100000 Count forwards in positive and negative whole numbers through zero Practise mental calculations with increasingly large numbers Practise fluency of written methods	Add numbers with more than four-digits (formal written column method) Solve multi-step problems selecting and justifying methods Practise mental calculations with increasingly largenumbers Add fractions with denominators that are a multiple of one another Add decimals with up to 2 decimal places

Objective and strategy	Concrete (build it)	Pictorial (draw it)	Abstract (write it)
Add decimals with 2 decimal places, including money.	Introduce decimal place value counters and model exchange for addition. 		 

Year 6	
Fluency	**End of year expectations**
Count in tens and hundreds increasing fluency of orderand place value Perform increasingly complex mental calculations and those with increasingly large numbers to aid fluency Add integers up to 10 million	Add numbers with more than four-digits (formal written column method) Solve more complex calculations mentally Add decimals with up to 3 decimal places Add fractions with different denominators
Children should extend the carrying method to number with any number of digits.Using similar methods, children will • add several numbers with different numbers of digits; • begin to add two or more decimal fractions with up to four digits and either one or two decimal places; • know that decimal points should line up under each other, particularly when adding or subtracting mixed amounts,e.g. 401.2 + 26.85 + 0.71.	

Objective and strategy	Concrete (build it)	Pictorial (draw it)	Abstract (write it)
Add several numbers of increasing complexity Including adding money, measure and decimals with different numbers of decimal points.	As Year 4/5	As Year 4/5	Insert zeros for place holders.