–Subtraction –
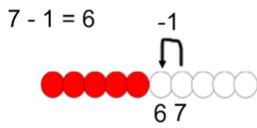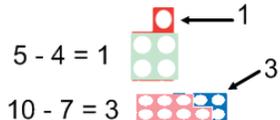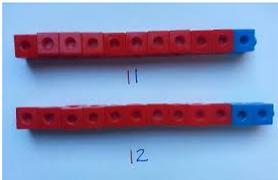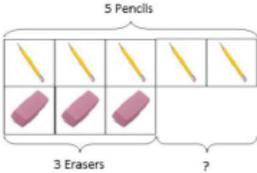
This shows the progression of teaching subtraction. Each method is designed to lead on to the next gradually building up children's understanding of number. Remember, children should think about whether a calculation can be done mentally first.

STEP	Activity	Strategy	Comments
1 Early subtraction	Counting	Take away a number of objects from the group, count what's left $5 - 3$	Then… start with group of objects and record the numeral. Take some away, record and count what's left (record) '6 take away 3 is 3 OR 3 less than 6 is 3'
2 Relating groups of objects to number lines	Finding numbers	Introduce $-$ and $=$ symbols Include vocabulary: 'difference' Relate to number line $5 - 3$ 1 2 3 4 5	Emphasise JUMPING on number line, not counting Then… look at a number line: what do we need to do?
3 Locating numbers on a number line and finding one less.	Counting to ten and back Locating numbers	Take away one from a number $7 - 1 = 6$ -1 6 7	Find 5 on number track, then SUBTRACT one Encourage children to locate the first number and count back from there, rather than starting at zero.
4 Number bonds **up to 10/** Up to 20	Use pegs on washing line (reverse to show inverse)	Inverse use of number bonds (the opposite of step 3 for addition) $5 - 4 = 1$ 1 $10 - 7 = 3$ 3	Model with Numicon In order to calculate effectively children must know all the bonds for numbers up to ten/twenty. This will enable them to **jump** back on the number line rather than *count*. Using a bead bar is also an effective way to showing how to split smaller numbers up. **KS1** children to also **model** this using jumps on a number line in order to lead to step 5.
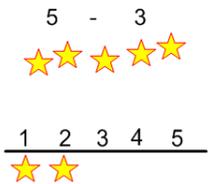
5 Using number bonds to jump back on the number line.	Place value partitioning	Jumping back (Bridging 10) $14 - 5 = 9$ -1 -4 9 10 14		Emphasise JUMP on number line, NOT counting! Use number bonds to jump back to the previous ten on the number line. Then subtract what is left in one jump. Use number bonds/love hearts.
6. Using number lines to jump back from any number in steps of ten.	Counting on and back in steps of ten.	Jumping back in tens. $52 - 30 = 22$ -10 -10 -10 22 32 42 52		Starting from any 2-digit number children must be able to jump back in steps of ten. *Focus on what happens to the tens and units as you count.* *Focus on tricky parts: counting over 100, counting back past 20 in the teen numbers.*
7 Subtracting on the number line (take away) Subtracting on the number line	*Locating numbers on a number line* Counting on and back in tens	TO − TO i) JUMP BACK on number line if amounts aren't close (e.g. 63 − 25) ii) JUMPING ON if the amounts are close (e.g. 53 − 49 = 4)	$63 - 25 = 38$ -2 -3 -20 38 40 43 63 $53 - 49 = 4$ 1 3 49 50 53	Emphasise looking at HOW CLOSE NUMBERS ARE before diving into use of a number line. The children should question: Is it a good idea to take away? OR Is it a good idea to find the difference? This puts together the two previous ways of subtracting on a number line. THE NUMBER LINE REPRESENTS THE JUMPS IN YOUR HEAD! *If subtracting near multiples of ten, more confident pupils can do subtracting a ten and adjusting:* *43 - 19, = 43 - 20 = 23 +1 = 24*

8 Subtracting using objects	Finding the difference.	Compare amounts and objects to find the difference. Use cubes to build towers or make bars to find the difference. Use basic bar models with items to find the difference	Hannah has 23 sandwiches, Helen has 15 sandwiches. Find the difference between the number of sandwiches.

9 Column subtraction	Practice partitioning Number bonds up to ten *(to avoid counting in ones when subtracting columns)*	$36 - 15$
		
		  30 6
		- 10 5
		  20 1 = 21
		
		Column subtraction to practise layout.
		
		  73 Then 567
		- 41 - 342
		  32 225
			Don't use number line for HTO − HTO (only exception is something like $1,000 - 279$, which would involve too many exchanges)
			
			Ideally children should only be using column method when practising decomposition.

10 Column subtraction using decomposition.	Practice extra partitioning e.g. 65 is... 60 + 5 or 50 +15 or 40 + 25 or...	HTO − HTO Using decomposition
		
		  Then $536 - 277 =$
		
		  400 120 16
		- 500 30 6
		  200 70 7
		  200 50 9 =
			Starting with the expanded method is the best way to get children to understand what is happening when using column subtraction. Get them to understand that if you can't subtract the ones exchange a ten, and so forth. MISCONCEPTION: Children often try to swap the ones if they can't subtract them properly first so model this carefully.

11
 	
Compact column subtraction
	Practice partitioning
	
	Number bonds **up to** ten *(to avoid counting in ones subtracting columns)*
		Compact column subtraction
		
		                                 1
		   2 1 4 2 1
		1 ~~3~~ 7 Then... ~~5~~ ~~3~~ 6
		- 2 9 - 2 7 7
		1 0 8 2 5 9
			As the children become more confident in column subtraction they can gradually start to use the compact method for speed.
			
			It is vital that they still understand that the small '1' represents tens or hundreds.

12
 	
Compact column subtraction with decimals.
	'Moving digits' ITP to investigate decimals. Practice partitioning
	
	Number bonds **up to** ten *(to avoid counting in ones subtracting columns)*
		With decimals
		
		        5 12 1
		    2 ~~6~~ ~~3~~ . **0**
		- 2 6 . 5
		   2 3 6 . 5
			As with the compact column subtraction strategy it is vital that children understand what each column represents in terms of value.