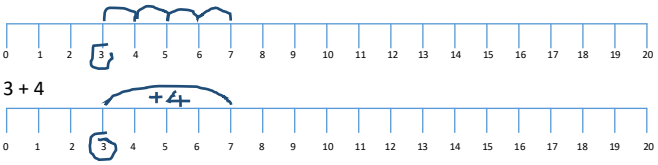
Addition: Written Calculations

EYFS:	Objectives (by end of year)
Children will engage in a wide variety of songs and rhymes, games and activities. They will begin to relate addition to **combining two groups of objects**, first by **counting all** and then by **counting on** from the largest number. They will find one more than a given number. In practical activities and through discussion they will begin to use the vocabulary involved in addition. 'You have five apples and I have three apples. How many apples altogether?'	Using quantities and objects, add two single digit numbers and count on to find the answer.
Year 1: Number line	
 Use of 10 and 20 frames 15 + 4 = □ 5 + □ + 1 = 9 □ + □ = 6 □ = 3 + 4	Add one-digit and two-digit numbers to 20, including zero. Represent and use number bonds and related subtraction facts within 20. Interpret addition number sentences and solve missing box problems, using concrete objects and pictorial representations.
Year 2: Empty number line used to count on in multiples of 10 and 1	
36 + 23 = 59  36 46 56 59 Partitioning: 36 + 23 36 + 20 = 56 56 + 3 = 59 (keeping first number whole) By end of Y2, moving to the partitioned column method (only provide examples that do not cross the 10's boundary – no carrying): 34 + 23 30 + 4 +20 + 3 50 + 7 = 57	Add numbers using concrete objects, pictorial representations, including those involving numbers, quantities and measures: - A two-digit number and ones TU + U - A two-digit number and tens TU + T - Two two-digit numbers TU + TU - Three one-digit numbers U + U + U Show that addition of two or three numbers can be done in any order (commutative law).

Year 3: Column addition with carrying	
Use expanded column method from Year 2 to support the move to columnar addition. No boundary crossing 442 + 335 = 777 442 +335 777 Crossing 10s boundary 457 + 219=676 457 +219 676 1 Crossing 10s/100s boundary 568 + 275 = 843 568 + 275 843 1 1 (Extend to adding more than two numbers and include HTO + TO to reinforce **place value**.	Add numbers **with up to three digits** using the formal written methods of columnar addition where appropriate. Estimate and use the inverse (subtraction) to check answers to a calculation.
Year 4: Column addition with carrying	
No boundary crossing 2442 + 335 = 3777 2442 + 335 2777 Crossing 10s boundary 1457 + 219=1676 1457 + 219 1676 1 Crossing 10s/100s boundary 1568 + 275 = 1843 1568 + 275 1843 1 1 Extend to adding more than two numbers and include decimals for measurement and money.	Add numbers **with up to four digits** using the formal written methods of columnar addition where appropriate. Estimate and use the inverse (subtraction) to check answers to a calculation.
Year 5: Column addition (including decimals with up to two decimal places)	
Extend Year 4 methods to larger numbers and use in decimal contexts including money. All boundary crossings to be made. 4.37m + 3.49m 4.37 +3.49 7.86 = 7.86m 1 Include examples where conversion of measurement is required. For example: 4.37m + 92cm	Add whole numbers and decimals with **more than four digits** using columnar addition. (Extend to adding more than two numbers and include conversion of measurement).
Year 6: Column addition (including decimals up to three decimal places)	
Secure written methods in all problem solving contexts. Continue to practise and use the **formal written method** for larger numbers and decimals. (Extend to adding more than two numbers). Our aim is that by the end of Year 6 children use mental methods (with jottings) when appropriate, but for calculations, that they cannot do in their heads, they use an efficient formal written method accurately and with confidence.	Solve addition multi-step problems in context.