



Number addition and subtraction

based on NCETM Progression maps

NUMBER BONDS							
Nursery	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Count up to 5	Count beyond 10 Recall number bonds for numbers 0-5 and some to 10	represent and use number bonds and related subtraction facts within 20	recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100				
MENTAL CALCULATION							
Subitise up to 3 objects Say one number for each in order Show finger numbers to 5 Link numerals and amounts to 5	Counts objects, actions & sounds Subitise up to 5 Has a deep understanding of number to 10 including the composition of each number Verbally count beyond 20 recognising the pattern of the counting system	add and subtract one-digit and two-digit numbers to 20, including zero	add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones a two-digit number and tens two two-digit numbers adding three one-digit numbers	add and subtract numbers mentally, including: a three-digit number and ones a three-digit number and tens a three-digit number and hundreds		add and subtract numbers mentally with increasingly large numbers	perform mental calculations, including with mixed operations and large numbers
Match number symbols with number of things	Know that rearranged objects will have the same number	read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Written Methods)	show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot				use their knowledge of the order of operations to carry out calculations involving the four operations
WRITTEN METHODS							
Nursery	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Link numerals and amounts to 5 Experiment with own symbols/marks as well as numerals	Link number symbol with its cardinal number value	read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Mental Calculation)		add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction	add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate	add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)	

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INVERSE OPERATIONS, ESTIMATING AND CHECKING ANSWERS

	Automatically recall number bonds to 5 including subtraction facts		recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.	estimate the answer to a calculation and use inverse operations to check answers	estimate and use inverse operations to check answers to a calculation	use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy	use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.
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PROBLEM SOLVING

Nursery	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Solve real world problems with numbers to 5 Compare quantities using 'more than' fewer than'	Compare quantities up to 10 in different contexts, recognizing when one is great than, less than or equal to the other Explore and represent patterns within numbers to 10 including odd/even, double facts, one more/one less Explore different ways to partition and regroup numbers Recognise that groups could have the same = number of things	solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$	solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures applying their increasing knowledge of mental and written methods	solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction	solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why	solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
			<i>solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change (copied from Measurement)</i>				Solve problems involving addition, subtraction, multiplication and division