

Number: Addition and Subtraction

MENTAL CALCULATION – ADDITION AND SUBTRACTION

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> • ELG: Have a deep understanding of numbers to 10, inc the composition of each number. • ELG: Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (inc subtraction facts) and some number bonds to 10, including double facts. • ELG: Subitise (recognise quantities without counting) up to 5. 	<ul style="list-style-type: none"> • To add and subtract one-digit and two-digit numbers to 20, including zero. • <i>To realise the effect of adding or subtracting zero.</i> 	<ul style="list-style-type: none"> • To show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot. • <i>To extend the language of addition and subtraction to include sum and difference.</i> • <i>To add and subtract numbers using an efficient strategy, explaining their method verbally</i> using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones, a two-digit number and tens, <i>two two-digit numbers</i>, add three one-digit numbers. 	<ul style="list-style-type: none"> • To add and subtract numbers mentally, including: <i>two-digit numbers, where the answers could exceed 100</i>, a three-digit number and ones, a three-digit number and tens and a three-digit number and hundreds. 	<ul style="list-style-type: none"> • <i>To continue to practise both mental methods and columnar addition and subtraction with increasingly large numbers to aid fluency.</i> 	<ul style="list-style-type: none"> • To add and subtract numbers mentally with increasingly large numbers to aid fluency (for example, $12\,462 - 2300 = 10\,162$). 	<ul style="list-style-type: none"> • To perform mental calculations, including with mixed operations and large numbers.

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NUMBER BONDS						
	<ul style="list-style-type: none"> To <i>memorise</i>, represent and use number bonds and related subtraction facts within 20 	<ul style="list-style-type: none"> To recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships. To recall and use addition and subtraction facts to 20 to become fluent in deriving associative facts (e.g. $10 - 7 = 3$, $100 - 70 = 30$) and derive and use related facts up to 100. 				
WRITTEN CALCULATIONS – ADDITION AND SUBTRCATION						
	<ul style="list-style-type: none"> read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs 	<ul style="list-style-type: none"> To begin to record addition and subtraction in columns to support place value and prepare for formal written methods with larger numbers. 	<ul style="list-style-type: none"> To use the understanding of place value and partitioning to enable adding and subtracting numbers with up to three digits, using formal written methods of columnar addition and subtraction to become fluent. 	<ul style="list-style-type: none"> To add and subtract numbers with up to four digits using the formal written methods of columnar addition and subtraction where appropriate. 	To add and subtract whole numbers with more than four digits, including using formal written methods of columnar addition and subtraction fluently.	To add and subtract whole numbers with more than four digits, including using formal written methods of columnar addition and subtraction fluently.

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INVERSE, ESTIMATING, CHECKING ANSWERS						
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•	•	<ul style="list-style-type: none"> To recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. 	<ul style="list-style-type: none"> To estimate the answer to a calculation and use inverse operations to check answers. 	<ul style="list-style-type: none"> To estimate the answer to a calculation and use inverse operations to check answers. 	<ul style="list-style-type: none"> use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy 	<ul style="list-style-type: none"> use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.
ORDER OF OPERATIONS						
						<ul style="list-style-type: none"> use their knowledge of the order of operations to carry out calculations involving the four operations

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SOLVE ADDITION AND SUBTRACTION PROBLEMS

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	<ul style="list-style-type: none"> To <i>discuss</i> and solve one-step problems, <i>in familiar practical contexts</i>, that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = ? - 9$. Inc the terms: <i>put together, add, altogether, total, take away, distance between, difference between, more than and less than to develop and use concepts flexibly.</i> 	<ul style="list-style-type: none"> To 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. 	<ul style="list-style-type: none"> Solve problems, inc missing number problems, using number facts, place value, and more complex addition and subtraction. 	<ul style="list-style-type: none"> solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why. 	<ul style="list-style-type: none"> solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why 	<ul style="list-style-type: none"> solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why