Number: Addition and Subtraction

National Centre for Excellence in the Teaching of Mathematics

NUMBER BONDS					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
represent and use number bonds and related subtraction facts within 20 (also appears in algebra)	recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 (also appears in algebra)	recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 (also appears in algebra)	Derive and use related facts up to 100 (also appears in algebra)		
MENTAL CALCULATION					
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 * two two-digit numbers * adding three one-digit numbers	add and subtract numbers mentally, including: * a three-digit number and two digit numbers * a three-digit number and a three digit number * strings of single digit numbers	add and subtract numbers mentally with increasingly large numbers	perform mental calculations, including with mixed operations and large numbers
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	understand that addition and multiplication of two numbers can be done in any order (commutative) and subtraction of one number from another cannot	understand that addition and multiplication 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	use their knowledge of the order of operations to carry out calculations involving the four operations

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WRITTEN METHODS					
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read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Mental Calculation)	add and subtract numbers with two digits using informal methods	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)	add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)
INVERSE OPERATIONS, ESTIMATING AND CHECKING ANSWERS					
	recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems (also appears in algebra)	estimate the answer to a calculation and use inverse operations to check answers (also appears in multiplication and division)	estimate and use inverse operations to check answers to a calculation (also appears in multiplication and division)	use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy estimate and use inverse operations to check answers to a calculation (also appears in multiplication and division)	use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy. (also appears in multiplication and division)

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PROBLEM SOLVING					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ - 9 (also appears in algebra)	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 (also appears in algebra)	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
	solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change (copied from Measurement)		solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction (also appears in algebra)		Solve problems involving addition, subtraction, multiplication and division