Mathematics Key Learning – Addition & Subtraction

'Working together to achieve success'

Statements taken from the National Curriculum 2014

Additional statements to support progression in learning.

EYFS - CALCULATING				
Understand the concept of addition by practically combining sets of objects to find how many and use the terminology part – part – whole	*Understand the concept of subtraction by practically removing one amount from within another to find how many are left and use the terminology part – part – whole*	*Relate subtraction to addition in practical situations using the terminology part – part – whole*	*Identify one more and one less than a given number*	*Identify two more and two less than a given number*
Add two single-digit numbers totalling up to 10, using practical equipment	*Add two single-digit numbers totalling greater than 10, using practical equipment*	*Subtract a single-digit number from a number up to 10, using practical equipment*	*Subtract a single-digit number from a number greater than 10, using practical equipment*	*Automatically recall addition and subtraction facts up to 5 and some addition and subtraction facts to 10*

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
NUMBER BONDS					
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**	*Derive and use addition and subtraction facts for 100.*	*Recall and use addition and subtraction facts for 100.*	*Recall and use addition and subtraction facts for 1 and 10 (with decimal numbers to one decimal place)*	*Recall and use addition and subtraction facts for 1 (with decimal numbers to two decimal places)*
	Recall and use number bonds for multiples of 5 totaling 60 (to support telling the time to the nearest 5 minutes)	*Derive and use addition and subtraction facts for multiples of 100, totalling 1000.*	*Recall and use addition and subtraction facts for multiples of 100, totalling 1000.*	*Derive and use addition and subtraction facts for 1 (with decimal numbers to two decimal places)*	
			Derive and use addition and subtraction facts for 1 and 10 (with decimal numbers to one decimal place)		
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**	*Select a mental strategy appropriate for the numbers involved in the calculation.*	**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**	*Select a mental strategy appropriate for the numbers involved in the calculation.*	*Add and subtract mentally combinations of two and three digit numbers and decimals to one decimal place.*	*Select a mental strategy appropriate for the numbers involved in the calculation.*	**use their knowledge of the order of operations to carry out calculations involving the four operations**
	Select a mental strategy appropriate for the numbers involved in the calculation.				*Select a mental strategy appropriate for the numbers involved in the calculation.*
WRITTEN METHODS					
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)**	*add and subtract whole numbers and decimals 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	**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.**

	solve missing number problems.				
	Understand subtraction as take away and difference (how many more, how many less/fewer)	*Understand and use take away and difference for subtraction, deciding on the most efficient method for the numbers involved, irrespective of context.*			

PROBLEM SOLVING

solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ - 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
	Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally or use a jotting.)	*Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method)*	*Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method)*	*Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method)*	*Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method)*
	solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change (copied from Measurement)		*Solve addition and subtraction problems involving missing numbers.*	*Solve addition and subtraction problems involving missing numbers.*	**Solve problems involving addition, subtraction, multiplication and division including those with missing numbers.**

Vocabulary

add, more, plus, make, sum, total, altogether, put together, score, double, near double, one more, two more… ten more, how many more to make…? How many more is … than …?, -, subtract, take (away), minus, leave, how many are left/left over?, how many have gone?, one less, two less… ten less, how many fewer is … than …? How much less is …?, difference between, distance between, half, halve, =, equals, sign, is the same as	add, addition, more, plus, make, sum, total, altogether, -, subtract, subtraction, take (away), minus, leave, how many left (over)?, difference, inverse, units, ones, tens, hundreds, place, place value, partition, exchange, represents, equal, equal to, makes, is the same as	place value, units/ones, tens, hundreds, exchange, add, plus, sum, total, altogether, estimate, round, inverse, subtract, take (away), minus, how many more/fewer, difference between, efficient, number, base 10, grouping, more (than), less (than), fewer, greater, most, least, compare, order, units, ones, tens, hundreds, thousands, exchange, digit, place, place value, represents, partition, equal to, estimate, guess, roughly, about the same as, round, exact(ly), multiple of, sequence, continue, predict, rule, add, plus, sum, total, altogether, subtract, take (away), minus, how many more/fewer, difference between	units, ones, tens, hundreds, thousands, one-, two-, three- or four-digit number, numeral, place value, represents, exchange, add, addition, more, plus, increase, sum, total, altogether, subtract, subtraction, take (away), minus, decrease, leave, how many are left/left over? difference between, equals, sign, is the same as, tens boundary, hundreds boundary, inverse	add, addition, more, plus, increase, sum, total, altogether, score, double, near double, how many more to make…?, subtract, subtraction, take (away), minus, decrease, leave, how many are left/left over?, difference between, half, halve, how many more/fewer is… than…?, how much more/less is…?, equals, sign, is the same as, tens boundary, hundreds boundary, units boundary, tenths boundary, inverse	add, addition, plus, sum, altogether, how many more to make…? subtract, subtraction, minus, take away, difference between, how many more/less than… ?, inverse, brackets, subtract, subtraction, take away, minus, decrease, how many more? how many fewer? difference, inverse, calculation, problem, mental, strategy, jotting, method, operation, sign, how did you work it out? multi-step, equation, accuracy, powers, indices