

PROGRESSIONS OF SKILLS FOR MATHS Addition and Subtraction

0-3 YEARS	NURSERY	RECEPTION	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
NUMBER BONDS								
		explore the composition of numbers to 10 - thinking of number bonds and the relationships	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				
		automatically recall number bonds for numbers 0-5 and some to 10						
MENTAL CALCULATION								
take part in finger rhymes with numbers	know that the last number reached when counting a small set of objects tells you how many there are in total (cardinal principle)	understand the 'one more than/one less than' relationship between consecutive numbers	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	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

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				adding three one-digit numbers				
react to changes of amount in a group of up to 3 items		explore the composition of numbers to 10 – thinking of number problems such as three and three being six	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
		explore and represent patterns including evens and odds, and doubling						
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)	

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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.	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

	solve real-world mathematical problems with numbers up to 5		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
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				<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
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VOCABULARY

zero, one, two, three, four, five, more, same	zero, one, two, three, four, five, more, same, total	zero to ten, total, more, less, how many more?, even, odd, double	Number bonds, number line Mathematical symbols (+, -, =) Even and Odd Add, more, plus, make, sum, total, altogether Inverse Equals Difference between	Number bonds, number line Mathematical symbols (+, -, =, <, >) Even and Odd Add, more, plus, make, sum, total, altogether Inverse Equals Difference between	Column addition, column subtraction Place value Number facts Inverse Equals Mathematical symbols (+, -, =, <, >) Difference between,	Column addition, column subtraction Place value Number facts Estimate Mathematical symbols (+, -, =, <, >) Inverse Equals	Column addition, column subtraction Place value Number facts Estimate Mathematical symbols (+, -, =, <, >) Rounding, round up to the nearest..., round	Rounding, round up to the nearest..., round down to the nearest... Order of Operations Bidmas Prime numbers Common factors Common multiples Long multiplication
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			How many more make...?	How many more make...?	How many more make...?	Difference between,	down to the nearest...	Mixed operations.
			How much more is...?	How much more is...?	How much more is...?	How many more make...?	Inverse	
			Subtract, take away, minus	Subtract, take away, minus	Subtract, take away, minus	How much more is...?	Equals	
			How many fewer is...?	How many fewer is...?	How many fewer is...?	Subtract, take away, minus	Difference between,	
			How much less is...?			How many fewer is...?	How many more make...?	
						How much less is...?	How much more is...?	
							Subtract, take away, minus	
							How many fewer is...?	
							How much less is...?	