



Axminster Progression for Maths



Concept / Strand	Sub-strand	EYFS		KS1		Lower KS2		Upper KS2	
		2 year olds	3-4 year olds	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Number and Place Value	Numerical Patterns	<p>Talk about and identify the patterns around them. E.g. stripes on clothes, designs on rugs and wallpaper. Use informal language like 'pointy', 'spotty' and 'blobs'.</p> <p>Extend and create ABAB patterns - stick, leaf, stick, leaf.</p> <p>Notice and correct an error in a repeating pattern.</p> <p>Engage children in following and inventing movement and music patterns, such as clap, clap, stamp.</p> <p>Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then...', ('morning', 'afternoon', 'evening' and 'night-time', 'earlier', 'later', 'too late', 'too soon', 'in a minute').</p> <p>Talk about patterns of events: 'then', 'after', 'before', "Every day we ...", "Every evening we..."</p> <p>Talk about the sequence of events in stories.</p> <p>Count down to forthcoming events on the calendar in terms of number of days or sleeps. Refer to the days of the week, and the day before or day after, 'yesterday' and 'tomorrow'.</p>	<p>Count beyond 10. (Pause at each multiple of 10 to draw out the structure).</p> <p>Compare numbers. Use vocabulary: 'more than', 'less than', 'fewer', 'the same as', 'equal to'. Encourage children to use these words as well.</p> <p>Understand the 'one more than / one less than' relationship between consecutive numbers. (Make predictions about what the outcome will be in stories, rhymes and songs if one is added, or if one is taken away, e.g. 10 green bottles, 5 little men in a flying saucer, 5 little ducks, 10 in a bed).</p> <p>(Provide 'staircase' patterns which show that the next counting number includes the previous number plus one).</p> <p>Continue, copy and create repeating patterns. E.g. AB, ABB and ABBC</p> <p>(Make a deliberate mistake and discuss how to fix it).</p> <p>Verbally count beyond 20, recognising the pattern of the counting system.</p> <p>Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.</p> <p>Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.</p>						
	Counting	<p>Take part in finger rhymes with numbers. E.g. 'Round and round the garden', (Maths).</p> <p>Count in everyday contexts, sometimes skipping numbers - '1-2-3-5'.</p> <p>React to changes of amount in a group of up to three items. E.g. Sing finger rhymes which involve hiding and returning, like "Two little dicky birds", (Maths).</p> <p>Develop counting-like behaviour, such as making sounds, pointing or saying some numbers in sequence.</p> <p>Compare amounts, saying 'lots', 'more' or 'same'.</p>	<p>Count down to forthcoming events on the calendar in terms of number of days or sleeps. Refer to the days of the week, and the day before or day after, 'yesterday' and 'tomorrow'.</p> <p>Sing counting songs and number rhymes and read stories that involve counting. Encourage children to show a number of fingers 'all at once', without counting.</p> <p>Subitise, e.g. small quantities in familiar patterns, e.g. dice and random arrangements.</p> <p>Count beyond 10. (Pause at each multiple of 10 to draw out the structure).</p> <p>Link the number symbol (numeral) with its cardinal number value. Display numerals in order alongside dot quantities or tens frame arrangements.</p> <p>Count objects, actions and sounds: Develop the key skills of counting objects including saying the numbers in order and matching one number name to each item.</p> <p>Recite numbers past 5.</p> <p>Develop fast recognition of up to 3 objects, without having to count them individually ('subitising').</p> <p>Say one number for each item in order: 1, 2, 3, 4, 5.</p> <p>Link numerals and amounts. E.g. showing the right number of objects to match the numeral, up to 5.</p> <p>Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle').</p> <p>Experiment with their own symbols and marks as well as numerals.</p> <p>Solve real world mathematical problems with numbers up to 5, using fingers, objects and marks.</p> <p>Compare quantities using language: 'more than', 'fewer than'.</p>	<p>count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number</p> <p>count backwards through zero to include negative numbers</p> <p>Sing counting songs and number rhymes and read stories that involve counting. Encourage children to show a number of fingers 'all at once', without counting.</p> <p>Subitise, e.g. small quantities in familiar patterns, e.g. dice and random arrangements.</p> <p>Count beyond 10. (Pause at each multiple of 10 to draw out the structure).</p> <p>Link the number symbol (numeral) with its cardinal number value. Display numerals in order alongside dot quantities or tens frame arrangements.</p> <p>Count objects, actions and sounds: Develop the key skills of counting objects including saying the numbers in order and matching one number name to each item.</p> <p>Recite numbers past 5.</p> <p>Develop fast recognition of up to 3 objects, without having to count them individually ('subitising').</p> <p>Say one number for each item in order: 1, 2, 3, 4, 5.</p> <p>Explore the composition of numbers to 10.</p> <p>Automatically recall number bonds for numbers 0-5 and some to 10.</p> <p>Put objects into five frames and then ten frames to begin to familiarise children with the tens structure of the number system. Verbally count beyond 20, recognising the pattern of the counting system.</p> <p>Have a deep understanding of number to 10, including the composition of each number.</p> <p>Subitise (recognise quantities without counting) up to 5.</p> <p>Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10 including double facts.</p>	<p>count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward</p> <p>count from 0 in multiples of 4, 8, 50 and 100;</p> <p>count forwards or backwards in steps of powers of 10 for any given number up to 1000 000</p> <p>find 10 or 100 more or less than a given number</p> <p>find 1000 more or less than a given number</p>	<p>count backwards through zero to include negative numbers</p> <p>count forwards or backwards in steps of powers of 10 for any given number up to 1000 000</p> <p>order and compare numbers beyond 1000 compare numbers with the same number of decimal places up to two decimal places (copied from Fractions)</p>	<p>interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero</p> <p>use negative numbers in context, and calculate intervals across zero</p> <p>read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers)</p> <p>read, write, order and compare numbers up to 10 000000 and determine the value of each digit (appears also in Reading and Writing Numbers)</p>		
	Comparing Numbers	<p>Compare quantities using language: 'more than', 'fewer than'</p>	<p>Compare numbers.</p>	<p>use the language of: equal to, more than, less than (fewer), most, least</p> <p>compare and order numbers from 0 up to 100; use <, > and = signs</p> <p>compare and order numbers up to 1000</p>	<p>order and compare numbers beyond 1000 compare numbers with the same number of decimal places up to two decimal places (copied from Fractions)</p>	<p>read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers)</p> <p>read, write, order and compare numbers up to 10 000000 and determine the value of each digit (appears also in Reading and Writing Numbers)</p>			

	Identifying, representing and estimating number	Develop fast recognition of up to 3 objects, without having to count them individually (subitising)	Subitise.	Identify and represent numbers using objects and pictorial representations including the number line	Identify, represent and estimate numbers using different representations, including the number line	Identify, represent and estimate numbers using different representations	Identify, represent and estimate numbers using different representations		
		Show finger numbers up to 5							
		Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5.	Link the number symbol (numeral) with its cardinal number value.						
	Reading and writing numbers (including Roman numerals)	Experiment with their own symbols and marks as well as numerals							
		Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5.	Link the number symbol (numeral) with its cardinal number value.	read and write numbers from 1 to 20 in numerals and words.	read and write numbers to at least 100 in numerals and in words	read and write numbers up to 1 000 in numerals and in words	read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value.	read, write, order and compare numbers up to at least 1 000 000 and determine the value of each digit (appears also in Comparing Numbers)	read, write, order and compare numbers up to 10 000 000 and determine the value of each digit (appears also in Understanding Place Value)
		Experiment with their own symbols and marks as well as numerals.				tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks (copied from Measurement)		read Roman numerals to 1 000 (M) and recognise years written in Roman numerals.	
	Understanding place value	Understand the one more than/one less than relationship between consecutive numbers.	Have a deep understanding of numbers to 10, including the composition of each number		recognise the place value of each digit in a two-digit number (tens, ones)	recognise the place value of each digit in a three-digit number (hundreds, tens, ones)	recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)	read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers) recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents (copied from Fractions)	read, write, order and compare numbers up to 10 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers)
		Explore the composition of numbers to 10					find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as units, tenths and hundredths (copied from Fractions)		identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1 000 where the answers are up to three decimal places (copied from Fractions)
	Rounding						round any number up to the nearest 10, 100 or 1 000	round any number up to the nearest 10, 100, 1 000, 10 000 and 100 000	round any whole number to a required degree of accuracy
							round decimals with one decimal place to the nearest whole number (copied from Fractions)	round decimals with two decimal places to the nearest whole number and to one decimal place (copied from Fractions)	solve problems which require answers to be rounded to specified degrees of accuracy (copied from Fractions)
	Problem Solving	Solve real world mathematical problems with numbers up to 5.			use place value and number facts to solve problems	solve number problems and practical problems involving these ideas.	solve number and practical problems that involve all of the above and with increasingly large positive numbers	solve number problems and practical problems that involve all of the above	solve number and practical problems that involve all of the above
Number: Addition and Subtraction	Number Bonds	Automatically recall number bonds for numbers 0-5 and some to 10.	Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts	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 Calculations		Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed evenly	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 * a three-digit number and tens * a three-digit number and hundreds	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
				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			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)	calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3/8) (copied from Fractions)
	Inverse Methods				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.
Problem Solving			solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 + \diamond = 9$	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	
				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 involving addition, subtraction, multiplication and division	
Number: Multiplication and Division	Multiplication and Division Facts		count in multiples of twos, fives and tens (copied from Number and Place Value)	count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward (copied from Number and Place Value)	count from 0 in multiples of 4, 8, 50 and 100 (copied from Number and Place Value)	count in multiples of 6, 7, 9, 25 and 1 000 (copied from Number and Place Value)	count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 (copied from Number and Place Value)		
	Mental Calculation			recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers	recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables	recall multiplication and division facts for multiplication tables up to 12×12	multiply and divide numbers mentally drawing upon known facts	perform mental calculations, including with mixed operations and large numbers	
					write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods (appears also in Written Methods)	use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers			
	Written Calculations		show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot		recognise and use factor pairs and commutativity in mental calculations (appears also in Properties of Numbers)		multiply and divide whole numbers and those involving decimals by 10, 100 and 1000	associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3/8) (copied from Fractions)	
				calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (+), division (-) and equals (=) signs	write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods (appears also in Mental Methods)	multiply two-digit and three-digit numbers by a one-digit number using formal written layout	multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers	multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication	
							divide numbers up to 4 digits by a two-digit whole number using the formal written method of short division where appropriate for the context divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context	use written division methods in cases where the answer has up to two decimal places (copied from Fractions (including decimals))	

						recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 (copied from Addition and Subtraction)				find pairs of numbers that satisfy number sentences involving two unknowns
					represent and use number bonds and related subtraction facts within 20 (copied from Addition and Subtraction)					enumerate all possibilities of combinations of two variables
	Formulae							Perimeter can be expressed algebraically as $2(a + b)$ where a and b are the dimensions in the same unit. (Copied from NSG measurement)		use simple formulae
	Sequences				sequence events in chronological order using language such as: before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening (copied from Measurement)	compare and sequence intervals of time (copied from Measurement)				recognise when it is possible to use formulae for area and volume of shapes (copied from Measurement)
						order and arrange combinations of mathematical objects in patterns (copied from Geometry, position and direction)				generate and describe linear number sequences