



HVPA Maths Sequence of Learning Progression – Year 5

This overview breaks down each of the Programmes of Study and domains covered by Year 5 and shows the approximate amount of weeks expected in the teaching of each area. Time is built in for consolidation and extension (based on the security of pupils' understanding & readiness to move on, challenge through problem solving and reasoning) and assessment within each term.

Autumn Term	Domain	National Curriculum Programmes of Study	Specific Teaching Areas
Number: approx. 5½ weeks	Number and place value Place value within 100,000	Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit (10,000).	<ul style="list-style-type: none">Numbers to 1000
		Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000.	
		Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000 (10, 100 and 1,000).	<ul style="list-style-type: none">Rounding to the nearest 10, 100 and 1,000
		Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit.	<ul style="list-style-type: none">10,000s, 1,000s, 100s, 10s and 1s
		Solve number problems and practical problems that involve all of the above	
	Number and place value Place value within 1,000,000	Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit (10,000).	<ul style="list-style-type: none">The number line to 100,000Comparing and ordering numbers to 100,000
		Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000	<ul style="list-style-type: none">Rounding numbers within 100,000
		Read Roman numerals to 1,000 (M) and recognise years written in Roman numerals	<ul style="list-style-type: none">Roman numerals to 10,000
		Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit.	<ul style="list-style-type: none">100,000s, 10,000s, 1,000s, 100s, 10s and 1s
		Solve number problems and practical problems that involve all of the above.	<ul style="list-style-type: none">Number line to 1,000,000Comparing and ordering numbers to 1,000,000
	Number – addition and subtraction	Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000.	<ul style="list-style-type: none">Rounding numbers to a 1,000,000
		Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero.	<ul style="list-style-type: none">Negative numbers
		Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000.	<ul style="list-style-type: none">Counting in 10s, 100s, 1,000s, 10,000s
		Solve number and practical problems that involve all of the above.	<ul style="list-style-type: none">Number sequences
		Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)	<ul style="list-style-type: none">Adding whole numbers with more than 4 digitsSubtracting whole numbers with more than 4 digits
		Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy	<ul style="list-style-type: none">Using rounding to estimate and check answers

		Add and subtract numbers mentally with increasingly large numbers.	<ul style="list-style-type: none"> Mental addition and subtraction
		Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	<ul style="list-style-type: none"> Mental addition and subtraction Problem solving – addition and subtraction
Statistics: approx. 1 week	Graphs and tables	Complete, read and interpret information in tables, including timetables.	<ul style="list-style-type: none"> Interpreting tables Two-way tables
		Solve comparison, sum and difference problems using information presented in a line graph.	<ul style="list-style-type: none"> Interpreting line graphs Drawing line graphs
Number: approx. 2 weeks	Multiplication and division	Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers	<ul style="list-style-type: none"> Multiples •
		Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes	
		Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.	<ul style="list-style-type: none"> Factors
		Establish whether a number up to 100 is prime and recall prime numbers up to 19.	
		Know and use the vocabulary of prime numbers, prime factors	<ul style="list-style-type: none"> Prime numbers
		Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes	<ul style="list-style-type: none"> Using factors
		Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3).	<ul style="list-style-type: none"> Cubes Inverse operations
		Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes.	
		Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000.	<ul style="list-style-type: none"> Multiplying whole numbers by 10, 100 and 1,000 Dividing whole numbers by 10, 100 and 1,000 Multiplying and dividing by multiples of 10, 100 and 1,000
		Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes.	
Measurement approx. 1½ weeks	Area and perimeter	Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres	<ul style="list-style-type: none"> Measuring perimeter Calculating perimeter
		Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes.	<ul style="list-style-type: none"> Calculating area Comparing area Estimating area

Spring Term	Domain	National Curriculum Programmes of Study	Specific Teaching Areas
approx. 2½ weeks	Number - Multiplication & division (2)	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	<ul style="list-style-type: none"> Multiplying numbers up to 4 digits by a 1-digit number
		Multiply and divide numbers mentally drawing upon known facts.	<ul style="list-style-type: none"> Multiplying 2-digit numbers
		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.	<ul style="list-style-type: none"> Multiplying 2-digit numbers Multiplying a 3-digit number by a 2-digit number Multiplying a 4-digit number by a 2-digit number
		Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context	<ul style="list-style-type: none"> Dividing up to a 4-digit number by a 1-digit number Division with remainders Problem solving – division with remainders
	Fractions (including decimals and percentages)	Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.	<ul style="list-style-type: none"> Equivalent fractions
		Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number (for example, $2/5 + 4/5 = 6/5 = 1\frac{1}{5}$).	<ul style="list-style-type: none"> Converting improper fractions to mixed numbers Converting mixed numbers to improper fractions
		Compare and order fractions whose denominators are all multiples of the same number.	<ul style="list-style-type: none"> Number sequences Comparing and ordering fractions
		Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number (for example, $2/5 + 4/5 = 6/5 = 1\frac{1}{5}$).	<ul style="list-style-type: none"> Fractions as division
		Add and subtract fractions with the same denominator and denominators that are multiples of the same number.	<ul style="list-style-type: none"> Adding and subtracting fractions with the same denominator Adding and subtracting fractions
		Add and subtract fractions with the same denominator and denominators that are multiples of the same number.	<ul style="list-style-type: none"> Adding fractions Subtracting fractions Problem solving – mixed word problems
		Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number (for example, $2/5 + 4/5 = 6/5 = 1\frac{1}{5}$).	<ul style="list-style-type: none"> Adding fractions Subtracting fractions Problem solving – mixed word problems
	Fractions (including decimals and percentages)	Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.	<ul style="list-style-type: none"> Multiplying fractions Calculating fractions of amounts
		Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number (for example, $2/5 + 4/5 = 6/5 = 1\frac{1}{5}$).	<ul style="list-style-type: none"> Using fractions as operators Problem solving – mixed word problems

approx. 2½ weeks	Decimals and percentages	Read, write, order and compare numbers with up to three decimal places.	<ul style="list-style-type: none"> Writing decimals
		Read and write decimal numbers as fractions (for example, $0.71 = 71/100$).	<ul style="list-style-type: none"> Decimals as fractions Understanding thousandths Writing thousandths as decimals
		Read, write, order and compare numbers with up to three decimal places.	<ul style="list-style-type: none"> Ordering and comparing decimals
		Round decimals with two decimal places to the nearest whole number and to one decimal place.	<ul style="list-style-type: none"> Rounding decimals
		Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal.	<ul style="list-style-type: none"> Understanding percentages Percentages as fractions and decimals
		Solve problems which require knowing percentage and decimal equivalents of $1/2$, $1/4$, $1/5$, $2/5$, $4/5$ and those fractions with a denominator of a multiple of 10 or 25.	<ul style="list-style-type: none"> Equivalent fractions, decimals and percentages

Summer Term	Domain	National Curriculum Programmes of Study	Specific Teaching Areas
Number: approx. 3 weeks	Fractions (including decimals) Decimals	Solve problems involving number up to three decimal places.	<ul style="list-style-type: none"> Adding and subtracting decimals
		Read, write, order and compare numbers with up to three decimal places.	<ul style="list-style-type: none"> Decimal sequences
		Solve problems involving number up to three decimal places.	<ul style="list-style-type: none"> Problem solving – decimals
		Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.	<ul style="list-style-type: none"> Multiplying decimals by 10
		Solve problems involving number up to three decimal places	<ul style="list-style-type: none"> Multiplying decimals by 10, 100 and 1,000 Dividing decimals by 10
		Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000.	<ul style="list-style-type: none"> Dividing decimals by 10, 100 and 1,000
Geometry: approx. 3½ weeks	Properties of shapes (1)	Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles.	<ul style="list-style-type: none"> Measuring angles in degrees
		Identify - angles at a point and one whole turn (total 360°) - angles at a point on a straight line and 1/2 a turn (total 180°) - other multiples of 90°	
		Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles	<ul style="list-style-type: none"> Measuring with a protractor
		Draw given angles, and measure them in degrees (°).	<ul style="list-style-type: none"> Drawing lines and angles accurately
		Identify - angles at a point and one whole turn (total 360°) - angles at a point on a straight line and 1/2 a turn (total 180°) - other multiples of 90°.	<ul style="list-style-type: none"> Calculating angles on a straight line Calculating angles around a point
	Properties of shapes (2)	Use the properties of rectangles to deduce related facts and find missing lengths and angles.	<ul style="list-style-type: none"> Calculating lengths and angles in shapes
		Identify - angles at a point and one whole turn (total 360°) - angles at a point on a straight line and 1/2 a turn (total 180°) - other multiples of 90°	<ul style="list-style-type: none"> Recognising and drawing parallel lines
		Use the properties of rectangles to deduce related facts and find missing lengths and angles	<ul style="list-style-type: none"> Recognising and drawing perpendicular lines Reasoning about parallel and perpendicular lines
		Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.	<ul style="list-style-type: none"> Regular and irregular polygons
	Position and direction	Identify 3D shapes, including cubes and other cuboids, from 2D representations	<ul style="list-style-type: none"> Reasoning about 3D shapes
		Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.	<ul style="list-style-type: none"> Reflection Reflection with coordinates Translation Translation with coordinates
Measure: approx. 3 weeks	Converting units	Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre).	<ul style="list-style-type: none"> Metric units
		Use all four operations to solve problems involving measure (for example, length, mass, volume, money) using decimal notation, including scaling	

		<p>Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.</p>	<ul style="list-style-type: none"> • Imperial units of length • Imperial units of mass • Imperial units of capacity
		<p>Solve problems involving converting between units of time.</p>	<ul style="list-style-type: none"> • Converting units of time • Timetables
		<p>Complete, read and interpret information in tables, including timetables.</p>	
	Volume and capacity	<p>Use all four operations to solve problems involving measure (for example, length, mass, volume, money) using decimal notation, including scaling.</p> <p>Estimate volume (for example, using 1 cm³ blocks to build cuboids (including cubes)) and capacity (for example, using water).</p>	<ul style="list-style-type: none"> • Problem solving – measure • What is volume? • Comparing volumes • Estimating volume • Estimating capacity