Year 5 Maths Long Term Map

Autumn	Number **Place value**	Number **Addition and subtraction**	Number **Multiplication and division A**	Number **Fractions A**	
Spring	Number **Multiplication and division B**	Number **Fractions B**	Number **Decimals and percentages**	Measurement **Perimeter and area**	**Statistics**
Summer	Geometry **Shape**	Geometry **Position and direction**	Number **Decimals**	Number **Negative numbers**	Measurement **Converting units** Measurement **Volume**

White Rose Steps		
Number: Place Value	**Can you…**	**National Curriculum Objectives**
Step 1: Roman Numerals to 1,000	Can you read and write Roman Numerals to 1,000 (M)?	• Read Roman numerals to 1,000 (M) and recognise years written in Roman numerals
Step 2: Numbers to 10,000	Can you identify place value and represent numbers up to 10,000?	• Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit • Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000
Step 3: Numbers to 100,000	Can you identify place value and represent numbers up to 100,000?	
Step 4: Numbers to 1,000,000	Can you identify place value and represent numbers up to 1,000,000?	
Step 5: Read and write numbers to 1,000,000	Can you read and write numbers to 1,000,000?	• Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit • Solve number problems and practical problems involving the above
Step 6: Powers of 10	Can you use place value to calculate with powers of 10?	
Step 7: 10/100/1,000/10,000/100,000 more or less	Can you find numbers 10, 100, 1,000, 10,000, 100,000 more or less than a given number?	• Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000 • Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit
Step 8: Partition numbers to 1,000,000	Can you partition numbers up to 1,000,000?	• Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit
Step 9: Number line to 1,000,000	Can you recognise the value of different intervals on number lines up to 1,000,000?	• Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit • Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000
Step 10: Compare and order numbers to 100,000	Can you compare and order numbers to 100,000?	• Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit
Step 11: Compare and order numbers to 1,000,000	Can you compare and order numbers to 1,000,000?	
Step 12: Round to the nearest 10, 100 or 1,000	Can you round to the nearest 10, 100 or 1,000?	• Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000
Step 13: Round within 100,000	Can you round any number within 100,000 to a required degree of accuracy?	
Step 14: Round within 1,000,000	Can you round any number within 1,000,000 to a required degree of accuracy?	

Number: Addition and Subtraction		
Step 1: Mental Strategies	Can you add and subtract numbers mentally with increasingly large numbers?	• Add and subtract numbers mentally with increasingly large numbers
Step 2: Add whole numbers with more than four digits	Can you add whole numbers with more than four digits?	• Add and subtract whole numbers with more than four digits, including using formal written methods (columnar addition and subtraction) • Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
Step 3: Subtract whole numbers with more than four digits	Can you subtract whole numbers with more than four digits?	
Step 4: Round to check answers	Can you round any number up to 1,000,000 to check answers to calculations?	• Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000 • Add and subtract numbers mentally with increasingly large numbers • Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
Step 5: Inverse operations (addition and subtraction)	Can you solve multi-step problems using the inverse operations?	• Add and subtract whole numbers with more than four digits, including using formal written methods (columnar addition and subtraction) • Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
Step 6: Multi-step addition and subtraction problems	Can you solve multi-step addition and subtraction problems?	
Step 7: Compare calculations	Can you solve multi-step problems by comparing calculations?	• Add and subtract numbers mentally with increasingly large numbers • Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
Step 8: Find missing numbers	Can you solve multi-step problems by finding missing numbers?	
Number: Multiplication and Division A		
Step 1: Multiples	Can you solve problems involving multiples?	• Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers • Solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes
Step 2: Common multiples	Can you solve problems involving common multiples?	
Step 3: Factors	Can you solve problems involving factors?	
Step 4: Common factors	Can you solve problems involving common factors?	
Step 5: Prime numbers	Can you solve problems involving prime numbers?	• Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers • Establish whether a number up to 100 is prime and recall prime numbers up to 19
Step 6: Square numbers	Can you solve problems involving square numbers?	• Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) • Solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes
Step 7: Cube numbers	Can you solve problems involving cube numbers?	

Step 8: Multiply 10, 100 and 1,000	Can you multiply whole numbers by 10, 100 and 1,000?	• Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000
Step 9: Divide 10, 100 and 1,000	Can you divide whole numbers by 10, 100 and 1,000?	
Step 10: Multiples of 10, 100 and 1,000	Can you multiply and divide numbers mentally by drawing upon known facts?	• Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000 • Multiply and divide numbers mentally, drawing upon known facts
Number: Fractions A		
Step 1: Find fractions equivalent to a unit fraction	Can you find fractions equivalent to a unit fraction?	• Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths
Step 2: Find fractions equivalent to a non-unit fraction	Can you find fractions equivalent to a non-unit fraction?	
Step 3: Recognise equivalent fractions	Can you recognise equivalent fractions?	
Step 4: Convert improper fractions to mixed numbers	Can you Convert improper fractions to mixed numbers?	• Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number
Step 5: Convert mixed numbers to improper fractions	Can you convert mixed numbers to improper fractions?	
Step 6: Compare fractions less than 1	Can you compare fractions less than 1?	• Compare and order fractions whose denominators are all multiples of the same number • Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths
Step 7: Order fractions less than 1	Can you order fractions less than 1?	
Step 8: Compare and order fractions greater than 1	Can you compare and order fractions greater than 1?	• Compare and order fractions whose denominators are all multiples of the same number • Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number
Step 9: Add and subtract fractions with the same denominator	Can you add and subtract fractions with the same denominator?	• Add and subtract fractions with the same denominator, and denominators that are multiples of the same number • Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number
Step 10: Add fractions within 1	Can you add fractions within 1?	• Add and subtract fractions with the same denominator, and denominators that are multiples of the same number
Step 11: Add fractions with a total greater than 1	Can you add fractions with a total greater than 1?	• Add and subtract fractions with the same denominator, and denominators that are multiples of the same number
Step 12: Add to a mixed number	Can you add fractions to a mixed number?	
Step 13: Add two mixed numbers	Can you add two mixed numbers?	

		• Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number
Step 14: Subtract fractions	Can you subtract fractions with the same denominator, and denominators that are multiples of the same number?	• Add and subtract fractions with the same denominator, and denominators that are multiples of the same number
Step 15: Subtract from a mixed number	Can you subtract amounts from a mixed number?	• Add and subtract fractions with the same denominator, and denominators that are multiples of the same number • Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number
Step 16: Subtract from a mixed number – breaking the whole	Can you subtract from a mixed number – breaking the whole?	
Step 17: Subtract two mixed numbers	Can you subtract two mixed numbers?	
Number: Multiplication and Division B		
Step 1: Multiply up to a 4-digit number by a 1-digit number	Can you multiply up to a 4-digit number by a 1-digit number?	• Multiply numbers up to four digits by a 1- or 2-digit number using a formal written method, including long multiplication for 2-digit numbers
Step 2: Multiply a 2-digit number by a 2-digit number (area model)	Can you multiply a 2-digit number by a 2-digit number using the area model?	
Step 3: Multiply a 2-digit number by a 2-digit number	Can you multiply a 2-digit number by a 2-digit number?	
Step 4: Multiply a 3-digit number by a 1-digit number	Can you multiply a 3-digit number by a 1-digit number?	
Step 5: Multiply a 4-digit number by a 2-digit number	Can you multiply a 4-digit number by a 2-digit number?	
Step 6: Solve problems with multiplication	Can you solve problems involving multiplication?	
Step 7: Short division	Can you use short division to divide numbers?	• Divide up to four digits by a 1-digit number using the formal written method of short division and interpret remainders appropriately for the context
Step 8: Divides a 4-digit number by a 1-digit number	Can you divide a 4-digit number by a 1-digit number?	
Step 9: Divide with remainders	Can you use short division to divide numbers with remainders?	
Step 10: Efficient division	Can you solve division problems by choosing the most efficient method?	
Step 11: solve problems with multiplication and division	Can you solve problems involving multiplication and division?	• Divide up to four digits by a 1-digit number using the formal written method of short division and interpret remainders appropriately for the context

		• Solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes
Number: Fractions B		
Step 1: Multiply a unit fraction by an integer	Can you multiply a unit fraction by an integer?	• Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams
Step 2: Multiply a non-unit fraction by an integer	Can you multiply a non-unit fraction by an integer?	
Step 3: Multiply a mixed number by an integer	Can you multiply a mixed number by an integer?	
Step 4: Calculate a fraction of a quantity	Can you calculate a fraction of a quantity?	
Step 5: Fraction of an amount	Can you find the fraction of an amount?	
Step 6: Find the whole	Can you find the whole?	
Step 7: Use fractions as operators	Can you use fractions as operators?	• Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams • Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number (Y4)
Number: Decimals and Percentages		
Step 1: Decimals up to 2 decimal places	Can you read decimals up to 2 decimal places?	• Read, write, order and compare numbers with up to 3 decimal places
Step 2: Equivalent fractions and decimals (tenths)	Can you read and write decimal numbers as fractions in the tenths Colum?	• Read and write decimal numbers as fractions
Step 3: Equivalent fractions and decimals (hundredths)	Can you read and write decimal numbers as fractions in the hundredths Colum?	• Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths • Read and write decimal numbers as fractions
Step 4: Equivalent fractions and decimals	Can you find equivalent fractions and decimals?	• Read and write decimal numbers as fractions • 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
Step 5: Thousandths as fractions	Can you identify thousandths as fractions?	• Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents
Step 6: Thousandths as decimals	Can you identify thousandths as decimals?	• Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents • Read, write, order and compare numbers with up to 3 decimal places

Step 7: Thousandths on a place value chart	Can you identify thousandths on a place value chart?	• Read, write, order and compare numbers with up to 3 decimal places • Solve problems involving numbers up to 3 decimal places
Step 8: Order and compare decimals (same number of decimal places)	Can you order and compare decimals?	
Step 9: Order and compare any decimals with up to 3 decimal places	Can you order and compare decimals up to 3 decimal places?	
Step 10: Round to the nearest whole number	Can you round decimals to the nearest whole number?	• Round decimals with 2 decimal places to the nearest whole number and to 1 decimal place
Step 11: Round to 1 decimal place	Can you round decimals to 1 decimal place?	
Step 12: Understand percentages	Can you understand and identify percentages?	• Recognise the per cent symbol (%) and understand that per cent relates to "number of parts per 100", and write percentages as a fraction with denominator 100, and as a decimal fraction
Step 13: Percentages as fractions	Can you write a percentage as a fraction?	• Recognise the per cent symbol (%) and understand that per cent relates to "number of parts per 100", and write percentages as a fraction with denominator 100, and as a decimal fraction • 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
Step 14: Percentages as decimals	Can you write a percentage as a decimal?	
Step 15: Equivalent fractions, decimals and percentages	Can you find equivalent fractions, decimals and percentages?	
Measurement: Perimeter and Area		
Step 1: Perimeter of rectangles	Can you find the perimeter of rectangles?	• Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres
Step 2: Perimeter of rectilinear shapes	Can you find the perimeter of rectilinear shapes?	
Step 3: Perimeter of polygons	Can you find the perimeter of polygons?	
Step 4: Area of rectangles	Can you find the area of rectangles?	• Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres • Calculate and compare the area of rectangles (including squares), including using standard units, square centimetres (cm2) and square metres (m2), and estimate the area of irregular shapes
Step 5: Area of compound shapes	Can you find the area of compound shapes?	
Step 6: Estimate area	Can you estimate the area of irregular shapes?	• Calculate and compare the area of rectangles (including squares), including using standard units, square centimetres (cm^2) and square metres (m^2), and estimate the area of irregular shapes
Statistics		
Step 1: Draw line graphs	Can you draw line graphs to display data?	

Step 2: Read and interpret line graphs	Can you read and interpret line graphs?	• Solve comparison, sum and difference problems using information presented in a line graph
Step 3: Read and interpret tables	Can you read and interpret tables?	• Complete, read and interpret information in tables, including timetables
Step 4: Two-way tables	Can you complete, read and interpret two-way tables?	
Step 5: Read and interpret timetables	Can you complete, read and interpret timetables?	
Geometry: Shape		
Step 1: Understand and use degrees	Can you understand and use degrees?	• Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles
Step 2: Classify angles	Can you classify a range of angles?	
Step 3: Estimate angles	Can you estimate the degrees in a range of angles?	
Step 4: Measure angles up to 180	Can you measure angles up to 180 degrees?	• Draw given angles, and measure them in degrees (°)
Step 5: Draw lines and angles accurately	Can you draw lines and angles accurately?	
Step 6: Calculate angles around a point	Can you calculate angles around a point?	• Identify angles at a point and 1 whole turn (total 360°)
Step 7: Calculate angles on a straight line	Ca you calculate angles on a straight line?	• Identify: angles at a point and 1 whole turn (total 360°); angles at a point on a straight line and half a turn (total 180°)
Step 8: Lengths and angles in shapes	Can you identity lengths and angles in shapes?	• Identify: angles at a point and 1 whole turn (total 360°); angles at a point on a straight line and half a turn (total 180°) • Use the properties of rectangles to deduce related facts and find missing lengths and angles
Step 9: Regular and irregular polygons	Can you distinguish between regular and irregular polygons based on reasoning about equal sides and angles?	• Distinguish between regular and irregular polygons based on reasoning about equal sides and angles
Step 10: 3-D shapes	Can you identify various 3-D shapes?	• Identify 3-D shapes, including cubes and other cuboids, from 2-D representations
Geometry: Position and Direction		
Step 1: Read and plot coordinates	Can you read and plot coordinates?	• 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
Step 2: Problem solving with coordinates	Can you solve problems involving coordinates?	
Step 3: Translation	Can you identify, describe and represent the position of a shape following translation?	
Step 4: Translation with coordinates	Can you translate shapes using coordinates?	
Step 5: Lines of symmetry	Can you identify lines of symmetry?	

Step 6: Reflection in horizontal and vertical lines	Can you reflect shapes in horizontal and vertical lines?	
Number: Decimals		
Step 1: Use known facts to add and subtract decimals within 1	Can you use known facts to add and subtract decimals within 1?	• Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents • Solve problems involving number up to 3 decimal places
Step 2: Complements to 1	Can you find complements to 1 for numbers with up to 3 decimal places?	
Step 3: Add and subtract decimals across 1	Can you add and subtract decimals across 1?	
Step 4: Add decimals with the same number of decimal places	Can you add decimals with the same number of decimal places?	
Step 5: Subtract decimals with the same number of decimal numbers	Can you subtract decimals with the same number of decimal numbers?	
Step 6: Add decimals with different numbers of decimal places	Can you add decimals with different numbers of decimal places?	
Step 7: Subtract decimals with different numbers of decimal places	Can you subtract decimals with different numbers of decimal places?	
Step 8: Efficient strategies for adding and subtracting decimals	Can you explore a range of calculation strategies to solve problems involving numbers up to 3 decimal places?	• Solve problems involving number up to 3 decimal places
Step 9: Decimal sequences	Can you combine your knowledge of number sequences and decimals to explore decimal sequences?	• Read, write, order and compare numbers with up to 3 decimal places • Solve problems involving number up to 3 decimal places
Step 10: Multiply by 10, 100 and 1,000	Can you multiply whole numbers including those involving decimals by 10, 100 and 1,000?	• Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000
Step 11: Divide by 10, 100 and 1,000	Can you divide whole numbers including those involving decimals by 10, 100 and 1,000?	
Step 12: Multiply and divide decimals – missing values	Can you multiply and divide decimals with missing values?	
Number: Negative Numbers		
Step 1: Understand negative numbers	Can you understand and interpret negative numbers in context?	• Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero.
Step 2: Count through zero in 1s	Can you count backwards through zero in 1s?	

Step 3: Count through zero in multiples	Can you count backwards through zero in multiples?	
Step 4: Compare and order negative numbers	Can you compare and order negative numbers?	
Step 5: Find the difference	Can you find the different between negative numbers?	
Measurement: Converting Units		
Step 1: Kilograms and kilometres	Can you convert between kilograms and kilometres?	• Convert between different units of metric measure [for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre]
Step 2: Millimetres and millilitres	Can you convert between millimetres and millilitres?	
Step 3: Convert units of length	Can you convert different units of length?	
Step 4: Convert between metric and imperial units	Can you convert between metric and imperial units?	• Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints
Step 5: Convert units of time	Can you convert different units of time?	• Solve problems involving converting between units of time
Step 6: Calculate with timetables	Can you solve calculation problems with timetables?	
Measurement: Volume		
Step 1: Cubic centimetres	Can you calculate the volume using cubic centimetres?	• Estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)] and capacity
Step 2: Compare volume	Can you find the volume of different shapes by counting cubes, then decide which shape has the greater volume?	
Step 3: Estimate volume	Can you estimate the volume of different objects?	
Step 4: Estimate capacity	Can you estimate the capacity of different objects?	• Estimate volume and capacity [for example, using water]