



Year 6 Maths Long Term Map

Autumn	Number Place value	Number Addition, subtraction, multiplication and division		Number Fractions A	Number Fractions B	Measurement Converting units
Spring	Ratio	Algebra	Number Decimals	Number Fractions, decimals and percentages	Measurement Area, perimeter and volume	Statistics
Summer	Geometry Shape	Geometry Position and direction	Themed projects, consolidation and problem solving			

White Rose Steps		
Number: Place Value	Can you...	National Curriculum Objectives
Step 1: Numbers to 1,000,000	Can you identify place value, represent and partition numbers with up to 7 digits?	<ul style="list-style-type: none"> • Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit • Solve number and practical problems that involve the above
Step 2: Numbers to 10,000,000	Can you identify place value, represent and partition numbers with up to 10,000,000?	
Step 3: Read and write numbers to 10,000,000	Can you read and write numbers to 10,000,000?	
Step 4: Powers of 10	Can you use place value knowledge to multiply and divide by powers of 10?	
Step 5: Number line to 10,000,000	Can you use place value knowledge to read and plot numbers on a number line?	
Step 6: Compare and order any integers	Can you compare and order integers up to 10,000,000?	
Step 7: Round any integer	Can you round any integer to a required degree of accuracy?	<ul style="list-style-type: none"> • Round any whole number to a required degree of accuracy • Solve number and practical problems that involve the above
Step 8: Negative numbers	Can you use negative numbers in context, and calculate intervals across zero?	<ul style="list-style-type: none"> • Use negative numbers in context, and calculate intervals across zero • Solve number and practical problems that involve the above
Number: Addition, Subtraction, Multiplication and Division		
Step 1: Add and subtract integers	Can you add and subtract integers?	<ul style="list-style-type: none"> • Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why • Solve problems involving addition, subtraction, multiplication and division • Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy
Step 2: Common factors	Can you solve problems involving common factors?	<ul style="list-style-type: none"> • Identify common factors, common multiples and prime numbers • Solve problems involving addition, subtraction, multiplication and division
Step 3: Common multiples	Can you solve problems involving common multiples?	<ul style="list-style-type: none"> • Identify common factors, common multiples and prime numbers • Solve problems involving addition, subtraction, multiplication and division
Step 4: Rules of divisibility	Can you use the rules of divisibility to solve problems?	<ul style="list-style-type: none"> • Solve problems involving addition, subtraction, multiplication and division
Step 5: Primes to 100	Can you solve problems involving prime numbers?	<ul style="list-style-type: none"> • Identify common factors, common multiples and prime numbers • Solve problems involving addition, subtraction, multiplication and division

Step 6: Square and cube numbers	Can you solve problems involving square and cube numbers?	<ul style="list-style-type: none"> Solve problems involving addition, subtraction, multiplication and division
Step 7: Multiply up to a 4-digit number by a 2-digit number	Can you multiply numbers up to 4-digits by a 2-digit number using long multiplication?	<ul style="list-style-type: none"> Multiply multi-digit numbers up to four digits by a 2-digit whole number using the formal written method of long multiplication Solve problems involving addition, subtraction, multiplication and division
Step 8: Solve problems with multiplication	Can you solve problems involving multiplication?	<ul style="list-style-type: none"> Perform mental calculations, including with mixed operations and large numbers Solve problems involving addition, subtraction, multiplication and division
Step 9: Short division	Can you use short division to divide 4-digit numbers by a 2-digit number?	<ul style="list-style-type: none"> Solve problems involving addition, subtraction, multiplication and division Divide numbers up to four digits by a 2-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context
Step 10: Division using factors	Can you solve problems involving division using factors?	<ul style="list-style-type: none"> Solve problems involving addition, subtraction, multiplication and division
Step 11: Introduction to long division	Can you use a formal method of long division to divide 3 or 4-digit numbers by a 2-digit number?	<ul style="list-style-type: none"> Divide numbers up to four digits by a 2-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 Solve problems involving addition, subtraction, multiplication and division
Step 12: Long division with remainders	Can you use a formal method of long division to divide 4-digit numbers by a 2-digit number with remainders?	<ul style="list-style-type: none"> Divide numbers up to four digits by a 2-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 Solve problems involving addition, subtraction, multiplication and division
Step 13: Solve problems with division	Can you solve problems involving division?	<ul style="list-style-type: none"> Perform mental calculations, including with mixed operations and large numbers Solve problems involving addition, subtraction, multiplication and division
Step 14: Solve multi-step problems	Can you select the appropriate method to solve addition and subtraction multi-step problems?	<ul style="list-style-type: none"> Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why Solve problems involving addition, subtraction, multiplication and division
Step 15: Order of operations	Can you use your knowledge of the order of operations to carry out calculations involving the four operations?	<ul style="list-style-type: none"> Perform mental calculations, including with mixed operations and large numbers Use their knowledge of the order of operations to carry out calculations involving the four operations
Step 16: Mental calculations and estimation	Can you use estimation to check answers to calculations?	<ul style="list-style-type: none"> Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy Perform mental calculations, including with mixed operations and large numbers

Step 17: Reason from known facts	Can you use the inverse method to solve problems?	<ul style="list-style-type: none"> Perform mental calculations, including with mixed operations and large numbers Solve problems involving addition, subtraction, multiplication and division
Number: Fractions A		
Step 1: Equivalent fractions and simplifying	Can you find equivalent fractions using common factors?	<ul style="list-style-type: none"> Use common factors to simplify fractions; use common multiples to express fractions in the same denomination
Step 2: Equivalent fractions on a number line	Can you find equivalent fractions using a number line?	
Step 3: Compare and order (denominator)	Can you compare and order fractions with the same denominator?	<ul style="list-style-type: none"> Compare and order fractions, including fractions > 1 Use common factors to simplify fractions; use common multiples to express fractions in the same denomination
Step 4: Compare and order (numerator)	Can you compare and order fractions with the a different denominator?	<ul style="list-style-type: none"> Compare and order fractions, including fractions > 1
Step 5: Add and subtract simple fractions	Can you add and subtract simple fractions?	<ul style="list-style-type: none"> Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions
Step 6: Add and subtract any two fractions	Can you add and subtract fractions with different denominators?	<ul style="list-style-type: none"> Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions Identify common factors, common multiples and prime numbers
Step 7: Add mixed numbers	Can you add mixed numbers	
Step 8: Subtract mixed numbers	Can you subtract mixed numbers?	
Step 9: Multi-step problems	Can you solve multi-step problems involving fractions?	<ul style="list-style-type: none"> Use common factors to simplify fractions; use common multiples to express fractions in the same denomination Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why Solve problems involving addition, subtraction, multiplication and division
Number: Fractions B		
Step 1: Multiply fractions by integers	Can you multiply fractions by integers?	<ul style="list-style-type: none"> Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams (Y5)
Step 2: Multiply fractions by fractions	Can you multiply fractions by a fraction?	<ul style="list-style-type: none"> Multiply simple pairs of proper fractions, writing the answer in its simplest form
Step 3: Divide a fraction by an integer	Can you divide a fraction by an integer?	<ul style="list-style-type: none"> Divide proper fractions by whole numbers
Step 4: Divide any fraction by an integer	Can you divide any fraction by an integer?	
Step 5: Mixed questions with fractions	Can you solve fraction problems involving the four operations?	<ul style="list-style-type: none"> Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions

		<ul style="list-style-type: none"> • Multiply simple pairs of proper fractions, writing the answer in its simplest form • Divide proper fractions by whole numbers • Solve problems involving addition, subtraction, multiplication and division
Step 6: Fraction of an amount	Can you find a fraction of an amount?	<ul style="list-style-type: none"> • Associate a fraction with division and calculate decimal fraction equivalents
Step 7: Fraction of an amount - find the whole	Can you use a bar model to find the whole of a fraction amount?	
Measurements: Converting Units		
Step 1: Metric measures	Can you solve problems involving metric measures?	<ul style="list-style-type: none"> • Solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 decimal places where appropriate • Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to 3 decimal places
Step 2: Convert metric measures	Can you convert between metric measures?	
Step 3: Calculate with metric measures	Can you solve problems involving calculating with metric measures?	
Step 4: Miles and kilometres	Can you convert between miles and kilometres?	
Step 5: Imperial measures	Can you solve problems involving imperial measures?	
Number: Ratio		
Step 1: Add or multiply?	Can you use ratio to add or multiply?	<ul style="list-style-type: none"> • Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts
Step 2: Use ratio language	Can you use ratio language when solving problems?	
Step 3: Introduction to the ratio symbol	Can you use the ratio symbol to solve problems?	
Step 4: Ratio and fractions	Can you solve problems involving ratio and fractions?	<ul style="list-style-type: none"> • Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts • Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples • Solve problems involving similar shapes where the scale factor is known or can be found
Step 5: Scale drawing	Can you solve problems involving scale drawings?	
Step 6: Use scale factors	Can you solve problems involving scale factors?	
Step 7: Similar shapes	Can you solve problems involving similar shapes?	
Step 8: Ratio problems	Can you solve problems involving ratio?	

Step 9: Proportion problems	Can you use ratio to solve proportion problems?	<ul style="list-style-type: none"> Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts
Step 10: Recipes	Can you use ratio to solve problems involving recipes?	
Number: Algebra		
Step 1: 1-step function machines	Can you generate and describe linear number sequences that have one step?	<ul style="list-style-type: none"> Use simple formulae Generate and describe linear number sequences
Step 2: 2-step function machines	Can you generate and describe linear number sequences that have two steps?	<ul style="list-style-type: none"> Use simple formulae Find pairs of numbers that satisfy an equation with two unknowns Enumerate possibilities of combinations of two variables
Step 3: Form expressions	Can you form expressions?	<ul style="list-style-type: none"> Use simple formulae Express missing number problems algebraically
Step 4: Substitution	Can you use substitution?	
Step 5: Formulae	Can you use simple formulae?	
Step 6: Form equations	Can you form equations?	<ul style="list-style-type: none"> Express missing number problems algebraically
Step 7: Solve 1-step equations	Can you solve 1-step equations?	
Step 8: Solve 2-step equations	Can you solve 2-step equations?	
Step 9: Find pairs of values	Can you find pairs of values?	<ul style="list-style-type: none"> Find pairs of numbers that satisfy an equation with two unknowns Enumerate possibilities of combinations of two variables
Step 10: Solve problems with two unknowns	Can you solve problems involving two unknowns?	<ul style="list-style-type: none"> Express missing number problems algebraically Find pairs of numbers that satisfy an equation with two unknowns
Number: Decimals		
Step 1: Place value within 1	Can you identify the value of each digit up to 3 decimal places?	<ul style="list-style-type: none"> Identify the value of each digit in numbers given to 3 decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places
Step 2: Place value - integers and decimals	Can you use place value to identify integers and decimals?	
Step 3: Round decimals	Can you round decimal numbers to specific degrees of accuracy up to 3 decimal places?	<ul style="list-style-type: none"> Solve problems which require answers to be rounded to specified degrees of accuracy
Step 4: Add and subtract decimals	Can you add and subtract decimals?	<ul style="list-style-type: none"> Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
Step 5: Multiply by 10, 100 and 1,000	Can you multiply by 10, 100 and 1,000?	<ul style="list-style-type: none"> Identify the value of each digit in numbers given to 3 decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places
Step 6: Divide by 10, 100 and 1,000	Can you divide by 10, 100 and 1,000?	
Step 7: Multiply decimals by integers	Can you multiply decimals by integers?	<ul style="list-style-type: none"> Multiply 1-digit numbers with up to 2 decimal places by whole numbers

Step 8: Divide decimals by integers	Can you divide decimals by integers?	<ul style="list-style-type: none"> Use written division methods in cases where the answer has up to 2 decimal places
Step 9: Multiply and divide decimals in context	Can you multiply and divide decimals in context?	<ul style="list-style-type: none"> Multiply 1-digit numbers with up to 2 decimal places by whole numbers Use written division methods in cases where the answer has up to 2 decimal places Solve problems involving addition, subtraction, multiplication and division
Number:		
Fractions, Decimals and Percentages		
Step 1: Decimal and fraction equivalents	Can you find decimal and fraction equivalents?	<ul style="list-style-type: none"> Use common factors to simplify fractions; use common multiples to express fractions in the same denomination
Step 2: Fractions as division	Can you use division to find fraction equivalents?	<ul style="list-style-type: none"> Associate a fraction with division and calculate decimal fraction equivalents for a simple fraction
Step 3: Understand percentages	Can you recall and use equivalences to identify percentages?	<ul style="list-style-type: none"> Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts
Step 4: Fractions to percentages	Can you convert fractions to percentages?	
Step 5: Equivalent fractions, decimals and percentages	Can you compare equivalent fractions, decimals and percentages?	
Step 6: Order fractions, decimals and percentages	Can you order fractions, decimals and percentages?	
Step 7: Percentage of an amount - one step	Can you find the percentage of an amount?	
Step 8: Percentage of an amount - multi-step	Can you solve problems involving the calculation of percentages?	<ul style="list-style-type: none"> Compare and order fractions, including fractions >1 Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts
Step 9: Percentages - missing values	Can you find missing values involving percentages?	
Measurement:		
Area, Perimeter and Volume		
Step 1: Shapes - same area	Can you calculate the area of various shapes?	<ul style="list-style-type: none"> Recognise that shapes with the same areas can have different perimeters and vice versa
Step 2: Area and perimeter	Can you calculate the area and perimeter of various shapes?	<ul style="list-style-type: none"> Recognise that shapes with the same areas can have different perimeters and vice versa Recognise when it is possible to use formulae for area and volume of shapes
Step 3: Area of a triangle - counting squares	Can you count squares to calculate the area of triangles?	<ul style="list-style-type: none"> Calculate the area of parallelograms and triangles

Step 4: Area of a right-angled triangle	Can you calculate the area of a right-angled triangle?	<ul style="list-style-type: none"> Recognise when it is possible to use formulae for area and volume of shapes Calculate the area of parallelograms and triangles
Step 5: Area of any triangle	Can you calculate the area of a triangle?	
Step 6: Area of a parallelogram	Can you calculate the area of a parallelogram?	
Step 7: Volume - counting cubes	Can you count squares to calculate the volume of cubes?	<ul style="list-style-type: none"> Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm³) and cubic metres (m³), and extending to other units
Step 8: Volume of a cuboid	Can you calculate the volume of a cuboid?	
Statistics		
Step 1: Line graphs	Can you interpret and construct line graphs to solve problems?	<ul style="list-style-type: none"> Interpret and construct pie charts and line graphs and use these to solve problems Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs (Year 4) Interpret and construct pie charts and line graphs and use these to solve problems
Step 2: Dual bar charts	Can you interpret and construct dual bar charts to solve problems?	
Step 3: Read and interpret pie charts	Can you read and interpret pie charts?	
Step 4: Pie charts with percentages	Can you use percentages to solve problems involving pie charts?	
Step 5: Draw pie charts	Can you interpret and construct pie charts to solve problems?	
Step 6: The mean	Can you calculate and interpret the mean as an average?	<ul style="list-style-type: none"> Calculate and interpret the mean as an average
Geometry: Shape		
Step 1: Measure and classify angles	Can you measure and classify angles using a protractor?	<ul style="list-style-type: none"> Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles Draw given angles, and measure them in degrees (°) (Y5) Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles (Y5)
Step 2: Calculate angles	Can you recognise and calculate angles?	
Step 3: Vertically opposite angles	Can you calculate vertically opposite angles?	<ul style="list-style-type: none"> Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles
Step 4: Angles in a triangle	Can you calculate angles in a triangle?	
Step 5: Angles in a triangle - special cases	Can you compare and calculate angles in a triangle?	<ul style="list-style-type: none"> Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons
Step 6: Angles in a triangle - missing angles	Can you find missing angles in a triangle?	
Step 7: Angles in quadrilaterals	Can you calculate angles in a quadrilateral?	

Step 8: Angles in polygons	Can you calculate angles in a polygon?	
Step 9: Circles	Can you illustrate and name parts of a circle?	<ul style="list-style-type: none"> • Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius
Step 10: Draw shapes accurately	Can you draw 2-D shapes using given dimensions and angles accurately?	<ul style="list-style-type: none"> • Draw 2-D shapes using given dimensions and angles
Step 11: Nets of 3-D shapes	Can you build 3-D shapes including making nets?	<ul style="list-style-type: none"> • Recognise, describe and build simple 3-D shapes, including making nets

Geometry: Position and Direction

Step 1: The first quadrant	Can you describe positions on a full coordinate grid?	<ul style="list-style-type: none"> • Describe positions on the full coordinate grid (all four quadrants)
Step 2: Read and plot points in four quadrants	Can you read and plot points in four quadrants?	
Step 3: Solve problems with coordinates	Can you solve problems involving coordinates?	
Step 4: Translations	Can you draw and translate simple shapes using coordinates?	<ul style="list-style-type: none"> • Draw and translate simple shapes on the coordinate plane, and reflect them in the axes
Step 5: Reflections	Can you draw and reflect simple shapes using coordinates?	

Themed Projects