Year 5/6 overview

This mixed-age plan follows the same progression as the White Rose Maths mixed-age planning, except where divergence improves the alignment of the Power Maths lessons.

The main aim of these plans is to allow teachers to cover the same topic with both groups.

Note: The colours used in these charts refer to the strand colours used in the Textbook.

Year 5	Year 6	Number of lessons
Autumn term		**74**
Unit 1: Place value within 1,000,000 (1) • 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. • Read Roman numerals to 1,000 (M) and recognise years written in Roman numerals.	**Unit 1: Place value within 10,000,000** • Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit. • Round any whole number to a required degree of accuracy. • Use negative numbers in context, and calculate intervals across zero. • Solve number and practical problems that involve all of the above.	**14**
Unit 2: Place value within 1,000,000 (2) • Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit. • Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000.		
Unit 3: Addition and subtraction • Estimate and use inverse operations to check answers to a calculation [Year 4]. • Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction). • Add and subtract numbers mentally with increasingly large numbers.	**Unit 2: Four operations (1)** [Part 1] • Recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}) [Year 5]. • Identify common factors, common multiples and prime numbers. • Use their knowledge of the order of operations to carry out calculations involving the four operations.	**12**

Year 5	Year 6	Number of lessons
• Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. • 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. **Unit 7: Ratio and proportion** • 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 similar shapes where the scale factor is known or can be found. • Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.	
Unit 4: Multiplication and division (1) • Identify multiples and factors, including finding all factor pairs of a number, and common factors of two 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. • Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000. • Recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}).	**Unit 2: Four operations (1)** [Part 2] • Recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}) [Year 5]. • Identify common factors, common multiples and prime numbers. • Use their knowledge of the order of operations to carry out calculations involving the four operations. • Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.	**20**

Year 5	Year 6	Number of lessons
Unit 7: Multiplication and 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. • Multiply and divide numbers mentally drawing upon known facts. • 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.	**Unit 3: Four operations (2)** • 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 long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context. • Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context. • Perform mental calculations, including with mixed operations and large numbers. • Identify common factors, common multiples and prime numbers. • Use their knowledge of the order of operations to carry out calculations involving the four operations. • Solve problems involving addition, subtraction, multiplication and division.	
Unit 5: Fractions (1) • Compare and order fractions whose denominators are all multiples of the same number.	**Unit 4: Fractions (1)** • Use common factors to simplify fractions; use common multiples to express fractions in the same denomination. • Compare and order fractions, including fractions > 1.	**28**

Year 5	Year 6	Number of lessons
• Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths. • 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, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$].	• Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.	
Unit 6: Fractions (2) • 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, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$]. • Add and subtract fractions with the same denominator and denominators that are multiples of the same number.	**Unit 5: Fractions (2)** • Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams. • Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions. • Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, 1/4 × 1/2 = 1/8]. • Divide proper fractions by whole numbers [for example, 1/3 ÷ 2 = 1/6]. • Use written division methods in cases where the answer has up to two decimal places.	
Unit 8: Fractions (3) • 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, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$]. • Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.		

Year 5	Year 6	Number of lessons
Spring term		**31**
Unit 9: Decimals and percentages • Read and write decimal numbers as fractions [for example, 0.71 = $\frac{71}{100}$]. • Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. • Round decimals with two decimal places to the nearest whole number and to one decimal place. • Read, write, order and compare numbers with up to three decimal places. • 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. • Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25.	**Unit 9: Decimals** • Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{3}{8}$]. • Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers up to three decimal places. • Multiply one-digit numbers with up to two decimal places by whole numbers. • Use written division methods in cases where the answer has up to two decimal places. • Solve problems which require answers to be rounded to specified degrees of accuracy.	**31**

Year 5	Year 6	Number of lessons
Unit 14: Decimals • Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. • Read, write, order and compare numbers with up to three decimal places. • Solve problems involving number up to three decimal places.	**Unit 10: Percentages** • Compare and order fractions, including fractions > 1. • Multiply one-digit numbers with up to two decimal places by whole numbers. • Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. • Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison.	
	Unit 8: Algebra • Use simple formulae. • Generate and describe linear number sequences. • Express missing number problems algebraically. • Find pairs of numbers that satisfy an equation with two unknowns. • Enumerate possibilities of combinations of two variables.	

Year 5	Year 6	Number of lessons
Summer term		**62**
Unit 12: Geometry – properties of shapes • Identify horizontal and vertical lines and pairs of perpendicular and parallel lines. • Identify 3D shapes, including cubes and other cuboids, from 2D representations. • Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles. • Draw given angles, and measure them in degrees (°). • Identify: - angles at a point and one whole turn (total 360°) - angles at a point on a straight line and $\frac{1}{2}$ a turn (total 180°) - other multiples of 90°. • Use the properties of rectangles to deduce related facts and find missing lengths and angles. • Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.	**Unit 13: Geometry – properties of shapes** • Draw 2D shapes using given dimensions and angles. • Recognise, describe and build simple 3D shapes, including making nets. • Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons. • Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius. • Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.	**13**
Unit 10: Measure – perimeter and area • Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres. • 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.	**Unit 11: Measure – perimeter, area and volume** • 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. • Calculate the area of parallelograms and triangles.	**12**

Year 5	Year 6	Number of lessons
Unit 17: Measure – volume • Estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water].	• Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units [for example, mm^3 and km^3].	
Unit 16: Measure – 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). • Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints. • Solve problems involving converting between units of time. • Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.	**Unit 6: Measure – imperial and metric measures** • Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three 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 three decimal places. • Convert between miles and kilometres.	**17**
Unit 11: Graphs and tables • Solve comparison, sum and difference problems using information presented in a line graph. • Complete, read and interpret information in tables, including timetables.	**Unit 12: Statistics** • Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. • Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.	

Year 5	Year 6	Number of lessons
	• Interpret and present data using bar charts, pictograms and tables. • Solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables.	
Unit 13: Geometry – position and direction • Describe positions on a 2D grid as coordinates in the first quadrant [Year 4]. • Plot specified points and draw sides to complete a given polygon [Year 4]. • 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.	**Unit 14: Geometry – position and direction** • Describe positions on the full coordinate grid (all four quadrants). • Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.	**6**
Unit 15: Negative numbers • Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero.	**Unit 15: Problem solving** • Solve number and practical problems that involve all of the above. • Use their knowledge of the order of operations to carry out calculations involving the four operations. • 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.	**14**

Year 5	Year 6	Number of lessons
	• Use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy. • Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. • 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. • 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 three decimal places. • Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons. • Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. • Describe positions on the full coordinate grid (all four quadrants).	