

Year 6 Scheme of Work

Autumn Term

White Rose block/Power Maths unit	National Curriculum Objectives	Small Steps	Vocabulary (words in red relate to new vocabulary)
Autumn block 1 6A Unit 1 Place value within 1,000,000 (2 weeks)	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • Numbers to ten million • Compare and order any number • Round any number • Negative numbers 	ten thousands (10,000s) hundred thousands (100,000s) millions (1,000,000s) ten million (10,000,000) place value partition interval estimate compare order rounding negative positive
Autumn block 2 5A Unit 2 Number: Addition, Subtraction, Multiplication and Division (4 weeks in total)	<ul style="list-style-type: none"> • 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 • 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 	<ul style="list-style-type: none"> • Add and subtract integers • Multiply up to a 4-digit number by a 2-digit number • Short division • Division using factors • Long division (1) • Long division (2) • Long division (3) • Long division (4) 	column addition column multiplication short division long division remainder factor estimate

<p>Autumn block 2 5A Unit 3 Number: Addition, Subtraction, Multiplication and Division (4 weeks in total)</p>	<ul style="list-style-type: none"> • identify common factors, common multiples and prime numbers • use their knowledge of the order of operations to carry out calculations involving the four operations • perform mental calculations, including with mixed operations and large numbers • use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. 	<ul style="list-style-type: none"> • Common factors • Common multiples • Primes to 100 • Squares and cubes • Order of operations • Mental calculations and estimation • Reason from known facts 	<p>factor common factor common multiple prime composite squared (²) cubed (³) order of operations brackets inverse operation</p>
<p>Autumn block 3 5A Unit 4 Number: Fractions (1) (4 weeks in total)</p>	<ul style="list-style-type: none"> • use common factors to simplify fractions; use common multiples to express fractions in the same denomination • compare and order fractions, including fractions > 1 • add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions 	<ul style="list-style-type: none"> • Simplify fractions • Fractions on a number line • Compare and order (denominator) • Compare and order (numerator) • Add and subtract fractions (1) • Add and subtract fractions (2) • Add fractions • Subtract fractions • Mixed addition and subtraction 	<p>numerator denominator common denominator common factor equivalent simplify simplest form factor highest common factor lowest common multiple (LCM) compare order ascending descending proper fraction improper fraction mixed number convert lowest common denominator</p>
<p>Autumn block 4 6A Unit 5 Number: Fractions (2) (4 weeks in total)</p>	<ul style="list-style-type: none"> • multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $\frac{4}{1} \times \frac{2}{1} = \frac{8}{1}$] • divide proper fractions by whole numbers [for example, $\frac{3}{1} \div 2 = \frac{6}{1}$] • associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{8}{3}$] • recall and use equivalences between 	<ul style="list-style-type: none"> • Multiply fractions by integers • Multiply fractions by fractions • Divide fractions by integers (1) • Divide fractions by integers (2) • Four rules with fractions • Fraction of an amount • Fraction of an amount – find the whole 	<p>numerator denominator whole number mixed number proper fraction improper fraction convert simplify</p>

	simple fractions, decimals and percentages, including in different contexts.		
Autumn block 5 6A Unit 6 Geometry: Position and Direction (1 week)	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> The first quadrant Four quadrants Translations Reflections 	<ul style="list-style-type: none"> quadrant four quadrants translate translation x-axis y-axis axis axes horizontal vertical vertex reflect reflection
Consolidation (1 week)			

Spring Term

White Rose block/Power Maths unit	National Curriculum Objectives	Small Steps	Vocabulary (words in red relate to new vocabulary)
Spring block 1 6B Unit 7 Number: Decimals (2 weeks)	<ul style="list-style-type: none"> Identify the value of each digit in numbers given to 3 decimal places and multiply numbers by 10, 100 and 1,000 giving answers up to 3 decimal places. 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 which require answers to be rounded to specified degrees of accuracy. 	<ul style="list-style-type: none"> Three decimal places Multiply by 10, 100 and 1,000 Divide by 10, 100 and 1,000 Decimals as fractions Fractions to decimals (1) Fractions to decimals (2) Multiply decimals by integers Divide decimals by integers Division to solve problems 	multiply divide decimal decimal place(dp) recurring decimal placeholder place value tenth hundredth thousandth product fraction
Spring block 2 6B Unit 8 Number: Percentages (2weeks)	<ul style="list-style-type: none"> Solve problems involving the calculation of percentages [for example, of measures and such as 15% of 360] and the use of percentages for comparison. Recall and use equivalences between simple fractions, decimals and percentages including in different contexts. 	<ul style="list-style-type: none"> Percentage of an amount (1) Percentage of an amount (2) Percentages – missing values Fractions to percentages Equivalent FDP Order FDP 	per cent (%) percentage part whole decimal fraction divide share multiply convert compare order equivalent fraction simplify less than (<) greater than (>)
Spring block 3 6B Unit 9 Number: Algebra (2 weeks)	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Find a rule – one step Find a rule – two step Forming expressions Substitution Formulae Forming equations Solve simple one-step equations 	sequence rule term algebra expression calculation

	<ul style="list-style-type: none"> Enumerate possibilities of combinations of two variables. 	<ul style="list-style-type: none"> Solve two-step equations Find pairs of values Enumerate possibilities 	<ul style="list-style-type: none"> formula substitute generalise operation calculate equation inverse solution
<p>Spring block 4 6B Unit 10 Measurement: Converting Units (1 week)</p>	<ul style="list-style-type: none"> 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 3 d.p. Convert between miles and kilometres. 	<ul style="list-style-type: none"> Metric measures Convert metric measures Calculate with metric measures Miles and kilometres Imperial measures 	<ul style="list-style-type: none"> metric imperial unit of measurement (or measure) gram (g) kilogram (kg) pound (lbs) ounce (oz) mass millilitre (ml) litre (l) pint capacity millimetre (mm) centimetre (cm) metre (m) kilometre (km) inch (in) foot (ft) yard (yd) mile length convert conversion table conversion graph
<p>Spring block 5 6B Unit 11 Measurement: Perimeter, Area and Volume (2 weeks)</p>	<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. Calculate the area of parallelograms and triangles. Calculate, estimate and compare volume 	<ul style="list-style-type: none"> Shapes – same area Area and perimeter Area of a parallelogram Area of a triangle (1) Area of a triangle (2) Area of a triangle (3) Volume – counting cubes Volume of a cuboid 	<ul style="list-style-type: none"> area volume perimeter parallelogram height enclosed width length

	of cubes and cuboids using standard units, including cm^3 , m^3 and extending to other units (mm^3 , km^3)		square centimetre (cm^2) square metre (m^2) base estimate formula compound shape cubic centimetre (cm^3) cubic metre (m^3)
Spring block 6 6B Unit 12 Number: Ratio (1 week)	<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 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. 	<ul style="list-style-type: none"> • Using ratio language • Ratio and fractions • Introducing the ratio symbol • Calculating ratio • Using scale factors • Calculating scale factors • Ratio and proportion problems 	ratio proportion part whole scale scale factor similar notation
Consolidation (1 week)			

Summer Term

White Rose block/Power Maths unit	National Curriculum Objectives	Small Steps	Vocabulary (words in red relate to new vocabulary)
Summer block 1 6C Unit 13 Geometry: Properties of Shapes (2 weeks)	<ul style="list-style-type: none"> draw 2-D shapes using given dimensions and angles recognise, describe and build simple 3-D 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. 	<ul style="list-style-type: none"> Measure with a protractor Draw shapes accurately Introduce angles Calculate angles Angles in a triangle Angles in a triangle – special cases Angles in a triangle – missing angles Angles in regular polygons Vertically opposite angles Angles in special quadrilaterals Draw nets of 3D shapes 	degree angle obtuse acute reflex right angle protractor triangle isosceles equilateral scalene regular polygon quadrilateral parallelogram kite rhombus trapezium diameter radius circumference concentric perimeter net pyramid tetrahedron cylinder prism vertically opposite angles cuboid cube
Summer block 2 6C Unit 14 Problem	<ul style="list-style-type: none"> solve number and practical problems that involve number and place value solve problems involving addition, subtraction, multiplication and division 	See <i>White Rose Problems of the Day</i> – KS2	

**Solving
(3 weeks in
total)**

- use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy
- solve problems which require answers to be rounded to specified degrees 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 the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison
- 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
- express missing number problems algebraically
- find pairs of numbers that satisfy an equation with two unknowns
- enumerate possibilities of combinations of two variables
- solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate
- calculate the area of parallelograms and triangles
- 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]
- interpret and construct pie charts and line graphs and use these to solve problems

Summer block 2 6C Unit 15 Statistics (2 weeks)	<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 • interpret and construct pie charts and line graphs and use these to solve problems • calculate and interpret the mean as an average 	<ul style="list-style-type: none"> • The mean • Read and interpret pie charts • Pie charts with percentages • Draw pie charts • Read and interpret line graphs • Draw line graphs • Use line graphs to solve problems 	<p>mean average pie chart segment line graph bar chart percentage fraction data</p>
Summer block 3 6C Unit 16 Investigations			