



Whole School Maths Progression of Knowledge and Skills

		Number			Measurement	Geometry		Statistics
Year	Number and Place Value	Addition and Subtraction	Multiplication and Division Fractions		Measurement	Year	Number and Place Value	Addition and Subtraction
EYFS	<p>Have a deep understanding of number to 10, including the composition of each number.</p> <p>Subitise (recognise quantities without counting) up to 5.</p> <p>Explore and represent patterns within numbers up to 10, including evens and odds.</p>	<p>Automatically recall numbers up to 5 (including subtraction facts) and some number bonds to 10, including double facts.</p> <p>Automatically recall double facts up to 5 + 5.</p>	<p>Solve problems using doubling, halving and sharing (linking with number facts to 10).</p>		<p>Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity, e.g. size and difference in weight.</p>	EYFS	<p>Have a deep understanding of number to 10, including the composition of each number.</p> <p>Subitise (recognise quantities without counting) up to 5.</p> <p>Explore and represent patterns within numbers up to 10, including evens and odds.</p>	<p>Automatically recall numbers up to 5 (including subtraction facts) and some number bonds to 10, including double facts.</p> <p>Automatically recall double facts up to 5 + 5.</p>
Year	Number and Place Value	Addition and Subtraction	Multiplication and Division	Fractions	Measurement	Properties of Shape	Position and Direction	Statistics
Y1	<p>Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.</p> <p>Count numbers to 100 in numerals; count in multiples of twos, fives and tens.</p>	<p>Add and subtract one-digit and two-digit numbers to 20, including zero.</p> <p>Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs.</p> <p>Represent and use number bonds and related</p>	<p>Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.</p> <p>(White Rose: Summer Block 1)</p>	<p>Recognise, find and name a half as one of two equal parts of an object, shape or quantity.</p> <p>Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.</p> <p>(White Rose: Summer Block 2)</p>	<p>Compare, describe and solve practical problems for:</p> <ul style="list-style-type: none"> Lengths and heights Mass/weight Capacity and volume Time <p>Measure and begin to record the following:</p> <ul style="list-style-type: none"> Lengths and heights 	<p>Recognise and name common 2D and 3D shapes, including:</p> <ul style="list-style-type: none"> 2D shapes (for example, rectangles (including squares), circles and triangles) 3D shapes (for 	<p>Describe position, direction and movement, including whole, half, quarter and three-quarter turns.</p> <p>(White Rose: Summer Block 6)</p>	

	<p>Identify and represent numbers using objects and pictorial representations.</p> <p>Read and write numbers to 100 in numerals.</p> <p>Read and write numbers from 1 to 20 in numerals and words.</p> <p>Given a number, identify one more and one less.</p> <p>(White Rose: Autumn Block 1, Spring Block 1, Spring Block 3, Summer Block 3)</p>	<p>subtraction facts within 20.</p> <p>Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = _ - 9$.</p> <p>(White Rose: Autumn Block 2, Spring Block 2)</p>			<ul style="list-style-type: none"> • Mass/weight • Capacity and volume • Time (hours, minutes, seconds) <p>Recognise and know the value of different denominations of coins and notes.</p> <p>Sequence events in chronological order using language (for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening).</p> <p>Recognise and use language relating to dates, including days of the week, weeks, months and years.</p> <p>Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.</p> <p>Length, height, weight and volume (White Rose: Spring Block 4, Spring Block 5)</p> <p>Money (White Rose: Summer Block 5)</p>	<p>example, cuboids (including cubes), pyramids and spheres).</p> <p>(White Rose: Autumn Block 3)</p>		
--	--	---	--	--	--	--	--	--

Year	Number and Place Value	Addition and Subtraction	Multiplication and Division	Fractions	Measurement	Properties of Shape	Position and Direction	Statistics	
Y2	<p>Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward.</p> <p>Read and write numbers to at least 100 in numerals and in words.</p> <p>Identify, represent and estimate numbers using different representations, including the number line.</p> <p>Recognise the place value of each digit in a two-digit number (tens, ones).</p> <p>Compare and order numbers from 0 up to 100; use <, > and = signs.</p> <p>Use place value and number facts to solve problems.</p>	<p>Add and subtract numbers using concrete objects, pictorial representations, and mentally, including:</p> <ul style="list-style-type: none"> A two-digit number and ones A two-digit number and tens Two two-digit numbers Adding three one-digit numbers <p>Solve problems with addition and subtraction:</p> <ul style="list-style-type: none"> Using concrete objects and pictorial representations, including those involving numbers, quantities and measures Applying their increasing knowledge of mental and written methods <p>Recall and use addition and subtraction facts to</p>	<p>Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.</p> <p>Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.</p> <p>Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals (=) signs.</p> <p>Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and</p>	<p>Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity.</p> <p>Write simple fractions e.g. $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.</p> <p>(White Rose: Summer Block 2)</p>	<p>Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (k/g); temperature ($^{\circ}\text{C}$); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels.</p> <p>Compare and order lengths, mass, volume/capacity and record the results using >, < and =.</p> <p>Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value.</p> <p>Find different combinations of coins that equal the same amounts of money.</p> <p>Solve simple problems in a practical context involving addition and subtraction of money of</p>	<p>Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (k/g); temperature ($^{\circ}\text{C}$); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels.</p> <p>Compare and order lengths, mass, volume/capacity and record the results using >, < and =.</p> <p>Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value.</p> <p>Find different combinations of coins that equal the same amounts of money.</p> <p>Solve simple problems in a practical context involving addition and subtraction of money of</p>	<p>Identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line.</p> <p>Identify and describe the properties of 3D shapes, including the number of edges, vertices and faces.</p> <p>Identify 2D shapes on the surface of 3D shapes, (for example a circle on a cylinder and a triangle on a pyramid).</p> <p>Compare and sort common 2D and 3D shapes and everyday objects.</p> <p>(White Rose: Autumn Block 3)</p>	<p>Order and arrange combinations of mathematical objects in patterns and sequences.</p> <p>Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise).</p> <p>(White Rose: Summer Block 4)</p>	<p>Interpret and construct simple pictograms, tally charts, block diagrams and simple tables.</p> <p>Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity.</p> <p>Ask and answer questions about totalling and comparing categorical data.</p> <p>(White Rose: Summer Block 3)</p>

	(White Rose: Autumn Block 1)	<p>20 fluently, and derive and use related facts up to 100.</p> <p>Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.</p> <p>Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.</p> <p>(White Rose: Autumn Block 2)</p>	<p>multiplication and division facts, including problems in contexts.</p> <p>(White Rose: Spring Block 1)</p>		<p>the same unit, including giving change.</p> <p>Compare and sequence intervals of time.</p> <p>Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times.</p> <p>Know the number of minutes in an hour and the number of hours in a day.</p> <p>Money (White Rose: Spring Block 4)</p> <p>Length and height (White Rose Spring Block 5)</p> <p>Mass, capacity and temperature (White Rose: Summer Block 1)</p> <p>Time (White Rose: Summer Block 2)</p>			
Year	Number and Place Value	Addition and Subtraction	Multiplication and Division	Fractions	Measurement	Properties of Shape	Position and Direction	Statistics
Y3	Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number.	<p>Add and subtract numbers mentally, including:</p> <ul style="list-style-type: none"> A three-digit number and ones 	Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.	Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10.	<p>Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).</p> <p>Add and subtract amounts of money to</p>	Draw 2D shapes and make 3D shapes using modelling materials; recognise 3D shapes in different		Interpret and present data using bar charts, pictograms and tables.

	<p>Identify, represent and estimate numbers using different representations.</p> <p>Read and write numbers up to 1,000 in numerals and in words.</p> <p>Recognise the place value of each digit in a three-digit number (hundreds, tens, ones).</p> <p>Compare and order numbers up to 1,000.</p> <p>Solve number problems and practical problems involving these ideas.</p> <p>(White Rose: Autumn Block 1)</p>	<ul style="list-style-type: none"> • A three-digit number and tens • A three-digit number and hundreds <p>Add and subtract numbers with up to three digits, using the formal written methods of columnar addition and subtraction.</p> <p>Estimate the answer to a calculation and use inverse operations to check answers.</p> <p>Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.</p> <p>(White Rose: Autumn Block 2)</p>	<p>Write and calculate mathematical for multiplication and division using the multiplication tables that they know, including for two-digit numbers, using mental and progressing to formal written methods.</p> <p>Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.</p> <p>(White Rose: Autumn Block 3, Spring Block 1)</p>	<p>Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.</p> <p>Recognise and use fractions as numbers: unit and non-unit fractions with small denominators.</p> <p>Recognise and show, using diagrams, equivalent fractions with small denominators.</p> <p>Compare and order unit fractions, and fractions with the same denominators.</p> <p>Add and subtract fractions with the same denominator within one whole (for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$).</p> <p>Solve problems that involve all of the above.</p> <p>(White Rose: Spring Block 2, Spring Block 3)</p>	<p>give change, using both £ and p in practical contexts.</p> <p>Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks.</p> <p>Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon, midnight.</p> <p>Know the number of seconds in a minute and the number of days in each month, year and leap year.</p> <p>Compare durations of events (for example to calculate the time taken by particular events or tasks).</p> <p>Measure the perimeter of simple 2-D shapes.</p> <p>Length and perimeter (White Rose: Spring Block 4)</p>	<p>orientations and describe them.</p> <p>Recognise angles as a property of shape or a description of a turn.</p> <p>Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify angles are greater than or less than a right angle.</p> <p>Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.</p> <p>(White Rose: Summer Block 4)</p>	<p>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.</p> <p>(White Rose: Summer Block 5)</p>
--	---	--	---	---	--	--	---

Year	Number and Place Value	Addition and Subtraction	Multiplication and Division	Fractions and Decimals	Measurement	Properties of Shape	Position and Direction	Statistics
Y4	<p>Count in multiples of 6, 7, 9, 25 and 1,000.</p> <p>Count backwards through zero to include negative numbers (introduced in Year 5).</p> <p>Identify, represent and estimate numbers using different representations.</p> <p>Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value.</p>	<p>Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.</p> <p>Estimate and use inverse operations to check answers to a calculation.</p> <p>Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.</p> <p><i>(White Rose: Autumn Block 2)</i></p>	<p>Recall multiplication and division facts for multiplication tables up to 12 x 12.</p> <p>Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers.</p> <p>Recognise and use factor pairs and commutativity in mental calculations.</p> <p>Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.</p>	<p>Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.</p> <p>Recognise and show, using diagrams, families of common equivalent fractions.</p> <p>Add and subtract fractions with the same denominator.</p> <p>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.</p> <p>Recognise and write decimal equivalents of any</p>	<p>Convert between different units of measure (for example, kilometre to metre; hour to minute).</p> <p>Estimate, compare and calculate different measures, including money in pounds and pence.</p> <p>Read, write and convert time between analogue and digital 12- and 24-hour clocks.</p> <p>Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.</p> <p>Measure and calculate the perimeter of a rectilinear figure</p>	<p>Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.</p> <p>Identify lines of symmetry in 2D shapes presented in different orientations.</p> <p>Identify acute and obtuse angles and compare and order angles up to two right angles by size.</p> <p>Complete a simple symmetric figure with respect to a specific line of symmetry.</p>	<p>Describe positions on a 2D grid as coordinates in the first quadrant.</p> <p>Describe movements between positions as translations of a given unit to the left/right and up/down.</p> <p>Plot specified points and draw sides to complete a given polygon.</p> <p><i>(White Rose: Summer Block 5)</i></p>	<p>Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.</p> <p>Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.</p> <p><i>(White Rose: Summer 4)</i></p>

	<p>Find 1,000 more or less than a given number.</p> <p>Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens and ones).</p> <p>Order and compare numbers beyond 1,000.</p> <p>Round any number to the nearest 10, 100 and 1,000.</p> <p>Solve number and practical problems that involve all of the above and with increasingly large positive numbers.</p> <p><i>(White Rose: Autumn Block 1)</i></p>		<p>Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connect to m objects.</p> <p><i>(White Rose: Autumn Block 4, Spring Block 1)</i></p>	<p>number of tenths or hundredths.</p> <p>Recognise and write decimal equivalents to $\frac{1}{4}$; $\frac{1}{2}$; $\frac{3}{4}$.</p> <p>Round decimals with one decimal place to the nearest whole number.</p> <p>Compare numbers with the same number of decimal places up to two decimal places.</p> <p>Solve simple measure and money problems involving fractions and decimals to two decimal places.</p> <p>Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths.</p> <p><i>Fractions (White Rose: Spring Block 4)</i> <i>Decimals (White Rose: Spring Block 5, Summer Block 1)</i></p>	<p>(including squares) in centimetres and metres.</p> <p>Find the area of rectilinear shapes by counting squares.</p> <p><i>Area (White Rose: Autumn Block 3)</i></p> <p><i>Length and Perimeter (White Rose: Spring Block 2)</i></p> <p><i>Time (White Rose: Summer Block 3)</i></p> <p><i>Money (White Rose: Summer Block 4)</i></p>	<i>(White Rose: Summer Block 2)</i>		
Year	Number and Place Value	Addition and Subtraction	Multiplication and Division	Fractions, Decimals and Percentages	Measurement	Properties of Shape	Position and Direction	Statistics
Y5	Count forwards or backwards in steps of powers of 10	Add and subtract whole numbers with more than 4 digits, including using	Identify multiples and factors, including finding all factor	Identify, name and write equivalent fractions of a given fraction,	Convert between different units of metric measure (for example,	Distinguish between regular and irregular polygons based on	Identify, describe and represent the position of a shape	Complete, read and interpret information

	<p>for any given number up to 1,000,000.</p> <p>Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit.</p> <p>Read Roman numerals to 1,000 (M) and recognise years written in Roman numerals.</p> <p>Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero.</p> <p>Round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000 and 1 00,000.</p> <p>Solve number problems and practical problems that involve all of the above.</p>	<p>formal written methods (columnar addition and subtraction).</p> <p>Add and subtract numbers mentally with increasingly large numbers.</p> <p>Use rounding to check answers to calculations and determine, in the context of the problem, levels of accuracy.</p> <p>Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.</p> <p>(White Rose: Autumn Block 2)</p>	<p>pairs of a number, and common factors of two numbers.</p> <p>Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.</p> <p>Establish whether a number up to 100 is prime and recall prime numbers up to 19.</p> <p>Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3).</p> <p>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.</p> <p>Multiply and divide numbers mentally drawing upon known facts.</p> <p>Divide numbers up to 4 digits by a one-digit number using the</p>	<p>represented visually, including tenths and hundredths.</p> <p>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, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = \frac{11}{5}$)</p> <p>Compare and order fractions whose denominators are all multiples of the same number.</p> <p>Add and subtract fractions with the same denominator and denominators that are multiples of the same number.</p> <p>Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.</p> <p>Read and write decimal numbers as fractions (for example, $0.71 = \frac{71}{100}$)</p> <p>Recognise and use thousandths and relate</p>	<p>kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre).</p> <p>Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.</p> <p>Use all four operations to solve problems involving measure (for example, length, mass, volume, money) using decimal notation, including scaling.</p> <p>Solve problems involving converting between units of time.</p> <p>Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres.</p> <p>Calculate and compare the area of rectangles (including squares) and including using standard units, square centimetres (cm^2) and square metres (m^2) and</p>	<p>reasoning about equal sides and angles.</p> <p>Use the properties of rectangles to deduce related facts and find missing lengths and angles.</p> <p>Identify 3D shapes, including cubes and other cuboids, from 2D representations.</p> <p>Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles.</p> <p>Draw given angles, and measure them in degrees (0°).</p> <p>Identify:</p> <ul style="list-style-type: none"> • 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°) 	<p>following a reflection or translation, using the appropriate language, and know that the shape has not changed.</p> <p>(White Rose: Summer Block 3)</p>	<p>in tables, including timetables.</p> <p>Solve comparison, sum and difference problems using information presented in a line graph.</p> <p>(White Rose: Spring 5)</p>
--	---	---	---	---	---	--	---	--

	<p><i>(White Rose: Autumn Block 1, Summer Block 4)</i></p>		<p>formal written method of short division and interpret remainders appropriately for the context.</p> <p>Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.</p> <p>Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes.</p> <p>Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.</p> <p>Solve problems involving multiplication and division, including scaling by simple fractions and</p>	<p>them to tenths, hundredths and decimal equivalents.</p> <p>Round decimals with two decimal places to the nearest whole number and to one decimal place.</p> <p>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.</p> <p>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.</p> <p>Solve problems involving numbers up to three decimal places.</p> <p>Fractions (White Rose: Autumn Block 5, Spring Block 1)</p>	<p>estimate the area of irregular shapes.</p> <p>Estimate volume (for example, using blocks to build cuboids) and capacity (for example, using water).</p> <p>Area and perimeter (White Rose: Spring Block 4)</p> <p>Volume (White Rose: Summer Block 2)</p> <p>Conversion (White Rose: Summer Block 6)</p>	<ul style="list-style-type: none"> • Other multiples of 90° <p>(White Rose: Summer Block 1)</p>		

			problems involving simple rates. (White Rose: Autumn Block 3 and 4)	Decimals and percentages (White Rose: Spring Block 3) Decimals (White Rose: Summer Block 3)				
Year	Number and Place Value	Addition and Subtraction Multiplication and Division		Fractions including Decimals and Percentages	Measurement	Properties of Shape	Position and Direction	Statistics
Y6	<p>Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit.</p> <p>Round any whole number to a required degree of accuracy.</p> <p>Use negative numbers in context, and calculate intervals across zero.</p> <p>Solve number and practical problems that involve all of the above.</p> <p>(White Rose: Autumn Block 1)</p>	<p>Perform mental calculations, including with mixed operations and large numbers.</p> <p>Use their knowledge of the order of operations to carry out calculations involving the four operations.</p> <p>Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.</p> <p>Identify common factors, common multiples and prime numbers.</p> <p>Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.</p> <p>Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication.</p> <p>Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders, fractions, or by rounding, as appropriate for the context.</p> <p>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.</p>	<p>Use common factors to simplify fractions; use common multiples to express fractions in the same denomination.</p> <p>Compare and order fractions, including fractions >1.</p> <p>Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.</p> <p>Multiply simple pairs of proper fractions, writing the answer in its simplest form (for example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$).</p> <p>Divide proper fractions by whole numbers (for example $\frac{1}{3} \div 2 = \frac{1}{6}$).</p> <p>Identify the value of each digit in numbers given to three decimal places and</p>	<p>Solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 d.p. where appropriate.</p> <p>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 up to 4 d.p.</p> <p>Convert between miles and kilometres.</p> <p>Recognise that shapes with the same areas can have different perimeters and vice versa.</p> <p>Recognise when it is possible to use formulae</p>	<p>Draw 2D shapes using given dimensions and angles.</p> <p>Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons.</p> <p>Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.</p> <p>Recognise, describe and build simple 3D shapes, including making nets.</p> <p>Recognise angles where they meet at</p>	<p>Describe positions on the full coordinate grid (all four quadrants).</p> <p>Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.</p> <p>(White Rose: Summer Block 2)</p>	<p>Interpret and construct pie charts and line graphs and use these to solve problems.</p> <p>Calculate and interpret the mean as an average.</p> <p>(White Rose: Spring 6)</p>	

		<p>Solve problems involving addition, subtraction, multiplication and division.</p> <p>(White Rose: Autumn Block 2)</p>	<p>multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places.</p> <p>Associate a fraction with division and calculate decimal fraction equivalents (for example, 0.375) for a simple fraction (for example, $\frac{3}{8}$).</p> <p>Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.</p> <p>Multiply one-digit numbers with up to two decimal places by whole numbers.</p> <p>Use written division methods in cases where the answer has up to two decimal places.</p> <p>Solve problems which require answers to be rounded to specified degrees of accuracy.</p> <p>Fractions (White Rose: Autumn Block 3 and 4)</p> <p>Decimals (White Rose: Spring Block 3)</p>	<p>for area and volume of shapes.</p> <p>Calculate the area of parallelograms and triangles.</p> <p>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.</p> <p>In the WRM schemes, time conversions are covered in Y5; the Y6 block concentrates on metric units.</p> <p>Conversion (White Rose: Autumn Block 5)</p> <p>Perimeter, area and volume (White Rose: Spring Block 5)</p>	<p>a point, are on a straight line, or are vertically opposite, and find missing angles.</p> <p>(White Rose: Summer Block 1)</p>		
--	--	--	---	---	---	--	--

			<i>Fractions, Decimals and Percentages (White Rose: Spring Block 4)</i>				
	Ratio and Proportion			Algebra			
	<p>Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts.</p> <p>Solve problems involving the calculation of percentages (for example, of measure, and such as 15% of 360) and the use of percentages for comparison.</p> <p>Solve problems involving similar shapes where the scale factor is known or can be found.</p> <p>Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.</p> <p><i>White Rose (Spring Block 1)</i></p>			<p>Use simple formulae.</p> <p>Generate and describe linear number sequences.</p> <p>Express missing number problems algebraically.</p> <p>Find pairs of numbers that satisfy an equation with two unknowns.</p> <p>Enumerate possibilities of combinations of two variables.</p> <p><i>White Rose (Spring Block 2)</i></p>			