

Number and Place Value						
Unit of learning	Year 2	Year 3	Year 4	Year 5	Year 6	
RTP Criteria		3NPV-1 Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10; apply this to identify and work out how many 10s there are in other three-digit multiples of 10.	4NPV-1 Know that 10 hundreds are equivalent to 1 thousand, and that 1,000 is 10 times the size of 100; apply this to identify and work out how many 100s there are in other four-digit multiples of 100.	5NPV-1 Know that 10 tenths are equivalent to 1 one, and that 1 is 10 times the size of 0.1. Know that 100 hundredths are equivalent to 1 one, and that 1 is 100 times the size of 0.01. Know that 10 hundredths are equivalent to 1 tenth, and that 0.1 is 10 times the size of 0.01. (NC – Year 4) Covered in Fraction, Decimals and Percentages.	6NPV-1 Understand the relationship between powers of 10 from 1 hundredth to 10 million, and use this to make a given number 10, 100, 1,000, 1 tenth, 1 hundredth or 1 thousandth times the size (multiply and divide by 10, 100 and 1,000).	
		2NPV-1 Recognise the place value of each digit in two-digit numbers, and compose and decompose two-digit numbers using standard and non-standard partitioning.	3NPV-2 Recognise the place value of each digit in <i>three</i> -digit numbers, and compose and decompose <i>three</i> -digit numbers using standard and non-standard partitioning.	4NPV-2 Recognise the place value of each digit in <i>four</i> -digit numbers, and compose and decompose <i>four</i> -digit numbers using standard and non-standard partitioning.	5NPV-2 Recognise the place value of each digit in numbers with up to 2 decimal places, and compose and decompose numbers with up to 2 decimal places using standard and non-standard partitioning. (NC – Year 4) Covered in Fraction, Decimals and Percentages.	6NPV-2 Recognise the place value of each digit in numbers up to 10 million, including decimal fractions, and compose and decompose numbers up to 10 million using standard and non-standard partitioning.
		2NPV-2 Reason about the location of any two-digit number in the linear number system, including identifying the previous and next multiple of 10.	3NPV-3 Reason about the location of any <i>three</i> -digit number in the linear number system, including identifying the previous and next multiple of 100 and 10.	4NPV-3 Reason about the location of any <i>four</i> -digit number in the linear number system, including identifying the previous and next multiple of 1,000 and 100, and rounding to the nearest of each.	5NPV-3 Reason about the location of any number with up to 2 decimals places in the linear number system, including identifying the previous and next multiple of 1 and 0.1 and rounding to the nearest of each. (NC – Year 4) Covered in Fraction, Decimals and Percentages.	6NPV-3 Reason about the location of any number up to 10 million, including decimal fractions, in the linear number system, and round numbers, as appropriate, including in contexts.
			3NPV-4 Divide 100 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts.	4NPV-4 Divide 1,000 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 1,000 with 2, 4, 5 and 10 equal parts.	5NPV-4 Divide 1 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in units of 1 with 2, 4, 5 and 10 equal parts. Covered in Fraction, Decimals and Percentages.	6NPV-4 Divide powers of 10, from 1 hundredth to 10 million, into 2, 4, 5 and 10 equal parts, and read scales/number lines with labelled intervals divided into 2, 4, 5 and 10 equal parts.
					5NPV-5 Convert between units of measure, including using common decimals and fractions. Covered in Fraction, Decimals and Percentages.	
National Curriculum Aim	Number - number and place value - recognise the place value of each digit in a two-digit number (10s, 1s) - identify, represent and estimate numbers using different representations, including the number line - compare and order numbers from 0 up to 100; use <, > and = signs - read and write numbers to at least 100 in numerals and in words - use place value and number facts to solve problems	Number - number and place value - recognise the place value of each digit in a 3-digit number (100s, 10s, 1s) - compare and order numbers up to 1,000 - identify, represent and estimate numbers using different representations - read and write numbers up to 1,000 in numerals and in words - solve number problems and practical problems involving these ideas	Number - number and place value - recognise the place value of each digit in a four-digit number (1,000s, 100s, 10s, and 1s) - order and compare numbers beyond 1,000 - identify, represent and estimate numbers using different representations round any number to the nearest 10, 100 or 1,000 - solve number and practical problems that involve all of the above and with increasingly large positive numbers read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of 0 and place value	Number - number and place value - read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit - interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through 0 - round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000 - solve number problems and practical problems that involve all of the above read Roman numerals to 1,000 (M) and recognise years written in Roman numerals	Number - number and place value - 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 0 solve number and practical problems that involve all of the above	
White Rose Unit		- Autumn – Block 1 – Place Value	- Autumn – Block 1 – Place Value	- Autumn – Block 1 – Place Value	- Autumn – Block 1 – Place Value	
Key vocabulary		- Ones, Tens, Hundreds, Thousands, More or less than, Part-part-whole, Digit, Represent, Multiple, Compare	- Round, Nearest, Multiples, Place value	- Millions, power of ten, corresponding multiples, approximately, midpoint, intermediate points, estimate, calculation/equation, less/more than, inequality, below/above, positive/negative	Millions, power of ten, corresponding multiples, approximately, midpoint, intermediate points, estimate, calculation/equation, less/more than, inequality, below/above, positive/negative	

Number – Addition and Subtraction					
Unit of learning	Year 2	Year 3	Year 4	Year 5	Year 6
RTP Criteria	2AS–2 Recognise the subtraction structure of ‘difference’ and answer questions of the form, “How many more...?”.	3AS–2 Add and subtract up to three-digit numbers using columnar methods.			
	2AS–3 Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract only ones or only tens to/from a two-digit number.	3AS–3 Manipulate the additive relationship: Understand the inverse relationship between addition and subtraction, and how both relate to the part–part–whole structure. Understand and use the commutative property of addition and understand the related property for subtraction.			6AS/MD–3 Solve problems involving ratio relationships.
	2AS–4 Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract any 2 two-digit numbers.				6AS/MD–4 Solve problems with 2 unknowns.
	2NF–1 Secure fluency in addition and subtraction facts within 10, through continued practice.	3NF–1 Secure fluency in addition and subtraction facts that bridge 10, through continued practice.			
National Curriculum Aim	<p>Number - addition and subtraction</p> <ul style="list-style-type: none"> - solve problems with addition and subtraction: - using concrete objects and pictorial representations, including those involving numbers, quantities and measures - applying their increasing knowledge of mental and written methods - show that addition of 2 numbers can be done in any order (commutative) and subtraction of 1 number from another cannot - recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems 	<p>Number - addition and subtraction</p> <ul style="list-style-type: none"> - add and subtract numbers with up to 3 digits, using formal written methods of columnar addition and subtraction estimate the answer to a calculation and use inverse operations to check answers - solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction 	<p>Number - addition and subtraction</p> <ul style="list-style-type: none"> - add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate - estimate and use inverse operations to check answers to a calculation - solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why 	<p>Number - addition and subtraction</p> <ul style="list-style-type: none"> - 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 - 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 	<p>Number - addition, subtraction, multiplication and division</p> <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 - identify common factors, common multiples and prime numbers - use their knowledge of the order of operations to carry out calculations involving the 4 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 - use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy
White Rose Unit		- Autumn – Block 2 – Addition and Subtraction	- Autumn – Block 2 – Addition and Subtraction	- Autumn – Block 2 – Addition and Subtraction	- Autumn – Block 2 – Addition, Subtraction, Multiplication and Division
Key vocabulary		- Partitioning, difference, relationships, sum, efficient, addends, augmentation, aggregation, plus, adjust strategy, minus,	- Part, Whole, Unknown, Value, Sum, Difference, Decrease, Increase, Exchange	- part/part whole, additive, multiplicative, combining, partitioning, direct comparison, equivalent, different, quantity, calculation,	- factor x factor = product, product = factor x factor, factor, multiple, common, number chains, rows, columns, positive integers,

		<p>equal to, increase, decrease, subtract, combine, regrouping – add, minuend, subtrahend, exchange, bridging ten,</p>		<p>structures, equal parts, unequal parts, missing parts, associative, aggregation, known whole</p>	<p>square, prime, times table, odd, even, composite, volume, tenths, hundredths, equal to, grouping, scaling, partition, regrouping, recombine, multiplied, products, partial products, number in a group, number of groups, whole/total</p>
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Number – Multiplication and Division					
Unit of learning	Year 2	Year 3	Year 4	Year 5	Year 6
RTP Criteria	2MD–1 Recognise repeated addition contexts, representing them with multiplication equations and calculating the product, within the 2, 5 and 10 multiplication tables.	3MD–1 Apply known multiplication and division facts to solve contextual problems with different structures, including quotitive and partitive division.			For year 6, MD ready-to-progress criteria are combined with AS ready-to-progress criteria (please see above).
	2MD–2 Relate grouping problems where the number of groups is unknown to multiplication equations with a missing factor, and to division equations (quotative division).		4MD–2 Manipulate multiplication and division equations, and understand and apply the commutative property of multiplication.	5MD–2 Find factors and multiples of positive whole numbers, including common factors and common multiples, and express a given number as a product of 2 or 3 factors.	
			4MD–3 Understand and apply the distributive property of multiplication. (NC – Year 3)	5MD–3 Multiply any whole number with up to 4 digits by any one-digit number using a formal written method.	
				5MD–4 Divide a number with up to 4 digits by a one-digit number using a formal written method, and interpret remainders appropriately for the context.	
National Curriculum Aim	Number - multiplication and division <ul style="list-style-type: none"> - calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals (=) signs - show that multiplication of 2 numbers can be done in any order (commutative) and division of 1 number by another cannot - solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts 	Number - multiplication and division <ul style="list-style-type: none"> - write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods - 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 	Number - multiplication and division <ul style="list-style-type: none"> - multiply two-digit and three-digit numbers by a one-digit number using formal written layout - solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by 1 digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects 	Number - multiplication and division <ul style="list-style-type: none"> - identify multiples and factors, including finding all factor pairs of a number, and common factors of 2 numbers - know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers - 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 - 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 - 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 - solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign - solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates 	Number - addition, subtraction, multiplication and division <ul style="list-style-type: none"> - See Addition and Subtraction Progression Document
White Rose Unit		Autumn – Block 3 – Multiplication and Division Spring – Block 1 – Multiplication and Division	Autumn – Block 4 – Multiplication and Division Spring – Block 1 – Multiplication and Division	Autumn – Block 4 – Multiplication and Division Spring – Block 1 – Multiplication and Division	Autumn – Block 2 – Addition, Subtraction, Multiplication and Division

<p>Key vocabulary</p>		<ul style="list-style-type: none"> - Number in a group, Number of groups, Whole - Grouping, Regrouping, Repeated addition, Repeated subtraction, Commutative, Factor, Product, Multiples, Divisible, Equal groups, divide, Multiply, Remainder, Partition 	<ul style="list-style-type: none"> - Dividend, Divisor, Quotient, Scale, Enlarge, Distributive law, Commutative law, Associative law, Quotient, 	<ul style="list-style-type: none"> - factor x factor = product, product = factor x factor, common, number chains, rows, columns, positive integers, square, prime, times table, composite, volume, tenths, hundredths, equal to, grouping, scaling, regrouping, recombine, partial products, partial quotients, remainder 	<ul style="list-style-type: none"> - number in a group, number of groups, whole/total amount, remainder, dividend, divisor, quotient, multiple, exchange, partial quotients, Dividend, Divisor, Quotient, Part/Whole, Number of groups, Size of groups, Compensation, Product, Remainder
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Number – Fractions					
Unit of learning	Year 2	Year 3	Year 4	Year 5	Year 6
RTP Criteria		3F-1 Interpret and write proper fractions to represent 1 or several parts of a whole that is divided into equal parts. <i>(NC – Year 2)</i>			6F-1 Recognise when fractions can be simplified, and use common factors to simplify fractions.
		3F-2 Find unit fractions of quantities using known division facts (multiplication tables fluency).		5F-1 Find non-unit fractions of quantities. <i>(NC – Year 2 and Year 3)</i>	6F-2 Express fractions in a common denomination and use this to compare fractions that are similar in value.
		3F-3 Reason about the location of any fraction within 1 in the linear number system.	4F-1 Reason about the location of mixed numbers in the linear number system.		6F-3 Compare fractions with different denominators, including fractions greater than 1, using reasoning, and choose between reasoning and common denomination as a comparison strategy.
			4F-2 Convert mixed numbers to improper fractions and vice versa. <i>(NC – Year 5)</i>	5F-2 Find equivalent fractions and understand that they have the same value and the same position in the linear number system. <i>(NC – Year 2, Year 3 and Year 4)</i>	
		3F-4 Add and subtract fractions with the same denominator, within 1.	4F-3 Add and subtract improper and mixed fractions with the same denominator, including bridging whole numbers.	5F-3 Recall decimal fraction equivalents for $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$ and $\frac{1}{10}$, and for multiples of these proper fractions.	
				5NPV-1 Know that 10 tenths are equivalent to 1 one, and that 1 is 10 times the size of 0.1. Know that 100 hundredths are equivalent to 1 one, and that 1 is 100 times the size of 0.01. Know that 10 hundredths are equivalent to 1 tenth, and that 0.1 is 10 times the size of 0.01. <i>(NC – Year 4)</i>	
				5NPV-2 Recognise the place value of each digit in numbers with up to 2 decimal places, and compose and decompose numbers with up to 2 decimal places using standard and non-standard partitioning. <i>(NC – Year 4)</i>	
				5NPV-3 Reason about the location of any number with up to 2 decimals places in the linear number system, including identifying the previous and next multiple of 1 and 0.1 and rounding to the nearest of each. <i>(NC – Year 4)</i>	
				5NPV-4 Divide 1 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in units of 1 with 2, 4, 5 and 10 equal parts.	
				5NPV-5 Convert between units of measure, including using common decimals and fractions.	
National Curriculum Aim	Number - fractions - 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 - write simple fractions, for example $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$	Number - fractions - 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 - recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators	Number - fractions (including decimals) - recognise and show, using diagrams, families of common equivalent fractions - count up and down in hundredths; recognise that hundredths arise when dividing an object by 100 and dividing tenths by 10	Number - fractions (including decimals and percentages) - 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	Number - Fractions (including decimals and percentages) - 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

	<ul style="list-style-type: none"> - recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators recognise and show, using diagrams, equivalent fractions with small denominators - add and subtract fractions with the same denominator within one whole [for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$] - compare and order unit fractions, and fractions with the same denominators solve problems that involve all of the above 	<ul style="list-style-type: none"> - 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 add and subtract fractions with the same denominator - recognise and write decimal equivalents of any number of tenths or hundreds - recognise and write decimal equivalents to $\frac{1}{4}, \frac{1}{2}, \frac{3}{4}$ - 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 round decimals with 1 decimal place to the nearest whole number - compare numbers with the same number of decimal places up to 2 decimal places - solve simple measure and money problems involving fractions and decimals to 2 decimal places 	<ul style="list-style-type: none"> - 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 multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams - 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 2 decimal places to the nearest whole number and to 1 decimal place - read, write, order and compare numbers with up to 3 decimal places solve problems involving number up to 3 decimal places - 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 $\frac{1}{2}, \frac{1}{4}, \frac{1}{5}, \frac{2}{5}, \frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25 	<ul style="list-style-type: none"> numbers, using the concept of equivalent fractions - multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$] divide proper fractions by whole numbers [for example, $\frac{1}{3} \div 2 = \frac{1}{6}$] 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 3 decimal places 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 - use equivalences between simple fractions, decimals and percentages, including in different contexts <p>Ratio and proportion</p> <ul style="list-style-type: none"> - solve problems involving the relative sizes of 2 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
White Rose Unit	Spring – Block 5 – Fractions Summer – Block 1 - Fractions	Spring – Block 3 – Fractions Spring – Block 4 – Decimals Summer – Block 1 - Decimals	Spring – Block 2 – Fractions Spring – Block 3 – Decimals and Percentages Summer – Block 1 - Decimals	Autumn – Block 3 – Fractions Spring – Block 1 – Decimals Spring – Block 2 - Percentages
Key vocabulary	- Proper fractions, numerator, denominator, whole, part, equal size, equal groups, unit fraction, non-unit fraction, equivalent, tenths, decimal	- Numerator, Denominator, Whole, Part, Equal size, Equal groups, Unit fraction, Non-unit fraction, Equivalent, Tenths, Hundredths, Place value, Parts, Dividend, Divisor, Quotient, Equal groups, Whole	- Numerator, Denominator, Whole, Parts, Equal size, Equal groups, Unit and non-unit fractions, Improper, Mixed, Equivalent, Convert, Multiply - Add, Subtract, Divide, Common, equal part, hundredth, thousandth, bigger, smaller, decimal point, bridging, compensating, whole, equal, penny, pound, tenth, plus, minus, adjust, decimal fraction, dividend, factor, product	- Numerator, Denominator, Whole, Parts, Equal size, Equal groups, Unit and non-unit fractions, Improper, Mixed, Equivalent, Convert, Multiply - Add, Subtract, Divide, Common, equal part, hundredth, thousandth, bigger, smaller, decimal point, bridging, compensating, whole, equal, penny, pound, tenth, plus, minus, adjust, decimal fraction, dividend, factor, product, simplify, convert, highest common factor, lowest common multiple, reason, common denominator, simplest form,

Geometry – Properties of Shape and Position and Direction					
Unit of learning	Year 2	Year 3	Year 4	Year 5	Year 6
RTP Criteria	2G–1 Use precise language to describe the properties of 2D and 3D shapes, and compare shapes by reasoning about similarities and differences in properties.	3G–1 Recognise right angles as a property of shape or a description of a turn, and identify right angles in 2D shapes presented in different orientations.		5G–1 Compare angles, estimate and measure angles in degrees (°) and draw angles of a given size.	
				5G–2 Compare areas and calculate the area of rectangles (including squares) using standard units.	
		3G–2 Draw polygons by joining marked points, and identify parallel and perpendicular sides.	4G–1 Draw polygons, specified by coordinates in the first quadrant, and translate within the first quadrant.		6G–1 Draw, compose, and decompose shapes according to given properties, including dimensions, angles and area, and solve related problems.
			4G–2 Identify regular polygons, including equilateral triangles and squares, as those in which the side-lengths are equal and the angles are equal. Find the perimeter of regular and irregular polygons.		
			4G–3 Identify line symmetry in 2D shapes presented in different orientations. Reflect shapes in a line of symmetry and complete a symmetric figure or pattern with respect to a specified line of symmetry.		
National Curriculum Aim	<p>Geometry - properties of shapes</p> <ul style="list-style-type: none"> - identify and describe the properties of 2-D shapes, including the number of sides, and line symmetry in a vertical line - identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces - identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid] - compare and sort common 2-D and 3-D shapes and everyday objects 	<p>Geometry - properties of shapes</p> <ul style="list-style-type: none"> - draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them - recognise angles as a property of shape or a description of a turn identify right angles, recognise that 2 right angles make a half-turn, 3 make three-quarters of a turn and 4 a complete turn; identify whether angles are greater than or less than a right angle - identify horizontal and vertical lines and pairs of perpendicular and parallel lines <p>Measurement</p> <ul style="list-style-type: none"> - measure the perimeter of simple 2-D shapes 	<p>Geometry - properties of shapes</p> <ul style="list-style-type: none"> - compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes - identify acute and obtuse angles and compare and order angles up to 2 right angles by size - identify lines of symmetry in 2-D shapes presented in different orientations - complete a simple symmetric figure with respect to a specific line of symmetry <p>Geometry - position and direction</p> <ul style="list-style-type: none"> - describe positions on a 2-D grid as coordinates in the first quadrant - describe movements between positions as translations of a given unit to the left/right and up/down - plot specified points and draw sides to complete a given polygon <p>Measurement</p> <ul style="list-style-type: none"> - measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres find the area of rectilinear shapes by counting squares 	<p>Geometry - properties of shapes</p> <ul style="list-style-type: none"> - identify 3-D shapes, including cubes and other cuboids, from 2-D representations - know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles - draw given angles, and measure them in degrees (°) identify: <ul style="list-style-type: none"> - angles at a point and 1 whole turn (total 360°) - angles at a point on a straight line and half 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 <p>Geometry - position and direction</p> <ul style="list-style-type: none"> - 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 <p>Measurement</p> <ul style="list-style-type: none"> - measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres - calculate and compare the area of rectangles (including squares), 	<p>Geometry - properties of shapes</p> <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 <p>Geometry - position and direction</p> <ul style="list-style-type: none"> - describe positions on the full coordinate grid (all 4 quadrants) - draw and translate simple shapes on the coordinate plane, and reflect them in the axes <p>Measurement</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

				including using standard units, square centimetres (cm ²) and square metres (m ²), and estimate the area of irregular shapes	
White Rose Unit		Year 3 – Spring Block 4 – Length and Perimeter Year 3 – Summer Block 3 – Properties of Shape	Year 4 – Autumn Block 3 – Length and Perimeter Year 4 – Spring Block 2 – Area Year 4 – Summer Block 5 – Properties of Shape Year 4 – Summer Block 6 – Position and Direction	Year 5 – Autumn Block 5 – Perimeter and Area Year 5 – Summer Block 2 – Properties of Shape Year 5 – Summer Block 3 – position and Direction	Year 6 – Autumn Block 4 – Position and Direction Year 6 – Spring Block 5 – Area, Perimeter and Volume Year 6 – Summer Block 1 – Properties of Shape
Key vocabulary		- 2D shapes, 3D shapes, parallel, perpendicular, polygons, regular polygons, angles, right angles, quarter turn, half turn, horizontal, vertical	- symmetry, coordinates, translation, quadrant, orientations, perimeter, area, rectilinear shapes	- acute, obtuse, reflex, irregular polygons, reflection	- diameter, radius, circumference, vertically opposite

Measurement					
Unit of learning	Year 2	Year 3	Year 4	Year 5	Year 6
RTP Criteria					
National Curriculum Aim	<p>Measurement</p> <ul style="list-style-type: none"> - choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels - compare and order lengths, mass, volume/capacity and record the results using >, < and = - recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value - find different combinations of coins that equal the same amounts of money solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change - compare and sequence intervals of time - 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 - know the number of minutes in an hour and the number of hours in a day 	<p>Measurement</p> <ul style="list-style-type: none"> - measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) - add and subtract amounts of money to give change, using both £ and p in practical contexts - tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks - 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, am/pm, morning, afternoon, noon and midnight - know the number of seconds in a minute and the number of days in each month, year and leap year - compare durations of events [for example, to calculate the time taken by particular events or tasks] 	<p>Measurement</p> <ul style="list-style-type: none"> - convert between different units of measure [for example, kilometre to metre; hour to minute] - estimate, compare and calculate different measures, including money in pounds and pence - read, write and convert time between analogue and digital 12- and 24-hour clocks - solve problems involving converting from hours to minutes, minutes to seconds, years to months, weeks to days 	<p>Measurement</p> <ul style="list-style-type: none"> - 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 - estimate volume [for example, using 1 cm³ blocks to build cuboids (including cubes)] and capacity [for example, using water] - 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 	<p>Measurement</p> <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 - convert between miles and kilometres 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 [for example, mm³ and km³]
White Rose Unit		Year 3 – Spring Block 2 – Money Year 3 – Summer Block 2 – Time Year 3 – Summer Block 4 – Mass and Capacity	Year 4 – Summer Block 2 – Money Year 4 – Summer Block 3 - Time	Year 5 – Summer Block 4 – Converting Units Year 5 – Summer Block 5 - Volume	Year 6 – Spring Block 4 – Converting Units Year 6 – Spring Block 5 – Area, Perimeter and Volume
Key vocabulary		- Length, mass, volume, capacity, grams, kilograms, metre, millimetre, centimetre, litre, millilitre, pounds, pence, roman numerals, analogue, digital, seconds, minutes, hours, am/pm, duration		- metric units, imperial units, inches, pounds, pints, cubed	- Miles, kilometres

Statistics					
Unit of learning	Year 2	Year 3	Year 4	Year 5	Year 6
RTP Criteria					
National Curriculum Aim	Statistics - interpret and construct simple pictograms, tally charts, block diagrams and tables - ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity - ask-and-answer questions about totalling and comparing categorical data	Statistics - 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	Statistics - interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs - solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs	Statistics - solve comparison, sum and difference problems using information presented in a line graph - complete, read and interpret information in tables, including timetables	Statistics - interpret and construct pie charts and line graphs and use these to solve problems - calculate and interpret the mean as an average
White Rose Unit		Year 3 – Spring Block 3 - Statistics	Year 4 – Summer Block 4 - Statistics	Year 5 – Autumn Block 3 - Statistics	Year 6 – Summer Block 1 - Statistics
Key vocabulary		Bar charts/graphs, pictograms, tables, scales, data, interpret	Discrete, continuous, time graphs, line graphs	Timetables	Pie charts, mean average

Mental Calculation Curriculum – progression document					
	Year 2	Year 3	Year 4	Year 5	Year 6
Automatic facts	<ul style="list-style-type: none"> - Recall addition and subtraction facts for all numbers up to 20 Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables - Recognise odd and even numbers 	<ul style="list-style-type: none"> - Recall all pairs of multiples of 100 with a total of 1000 - Recall all pairs of multiples of 5 with a total of 100 - Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables 	<ul style="list-style-type: none"> - Recall multiplication and division facts for multiplication tables up to 12×12 	<ul style="list-style-type: none"> - Recall squares of all integers from 1 to 12 	<ul style="list-style-type: none"> - Recall equivalences between simple fractions, decimals and percentages,
Strategies	<ul style="list-style-type: none"> - Count on or back in tens - Find a small difference by counting up from the smaller to the larger number - Reorder numbers in a calculation - Add three or four small numbers by putting the largest number first and / or by finding pairs totalling 10 - Bridge through a multiple of 10 Partition into '5 and a bit' when adding 6, 7, 8 or 9 - Add or subtract mentally a 'near multiple of 10' to or from a two-digit number - Use near doubles to double and then adjust with totals less than 100 - Double numbers up to 20 and find their corresponding halves - Add or subtract any 2-digit numbers, not crossing the 10s boundary - Add or subtract any single-digit to any two digit number, crossing the 10s boundary 	<ul style="list-style-type: none"> - Multiply and divide whole numbers by 10 - Double and halve numbers up to 100, the units digit not crossing 10 - Double any multiple of 50 up to 500 and halve any multiple of 100 up to 1000 - Count on or back in repeated steps of 1, 10 and 100 - Count up through the next multiple of 10 or 100 - Add 3 two digit multiples of 10 - Partition into tens and units, adding the tens first, not crossing 10 - Bridge through 100 when adding ones or multiples of 10 - Add or subtract any 2 –digit number using a range of strategies - Add or subtract 9, 19, 29, 11, 21 or 31 by rounding and compensating - Add or subtract the nearest multiple of 10 and then adjust - Reorder numbers in a calculation - Subtract any 3-digit number from any 3 digit number when the difference is less than 10 	<ul style="list-style-type: none"> - Multiply and divide whole numbers by 100 - Double any number up to 50 and find the corresponding halves - Double any multiple of 5 up to 100 and halve any multiple of 10 up to 100 Double any multiply of 10 to 500 and find the corresponding halves - Partition to carry out multiplication - To multiply by 9, 99, 999 etc, round to nearest multiple of 10 and then adjust - Count up through the next multiple of 10, 100 or 1000 - Reorder numbers in a calculation - Partition into hundreds, tens and units, adding the most significant digit first, only crossing 10 or 100 but not both - Partition into tens and units, adding the tens first, - Add or subtract pairs of three-digit multiples of 10 - Add or subtract the nearest multiple of 10 or 100 then adjust - Add several numbers, using known number facts - Subtract any 4-digit number from any 4-digit number when the difference is small 	<ul style="list-style-type: none"> - Multiply and divide any numbers by 1000 - Double any number up to 100 and multiples of 10 to 100 and find corresponding halves add or subtract pairs of three-digit multiples of 10 - Add or subtract two-digit numbers with one decimal place use factors to multiply (e.g. $50 \times 7 = 5 \times 10 \times 7$) - Partition to carry out multiplication add or subtract the nearest multiple of 10, 100 or 1000, then adjust - Partition into hundreds, tens and units, adding the most significant digit first - To multiply a 2 or 3-digit number by 9, multiply by 10 and then adjust - Find what must be added to a decimal fractions with units and tenths to make the next whole number ($4.3 + ? = 5$) - Add or subtract any pair of decimal fractions ($5.7 + 2.5$; $0.63 - 0.48$) Find 50% 25%, 10% of a small whole number, e.g. 25% of £8 	<ul style="list-style-type: none"> - Add several 2-digit numbers mentally, with jottings - Multiply any 2-digit number by a single digit, using the most efficient strategy Multiply any 2-digit number by 50 or 25 Find squares of multiples of 10 to 100 - Calculate fractions and percentages of numbers Find any multiple of 10% of a whole number or quantity e.g. 70% of £20, 50% of 5kg, 75% of an hour - Use BIDMAS to carry out 2 step calculations, with jottings - Identify and apply the most efficient strategy for a range of mental problems
RTP criteria Number Facts		3NF-3 - Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10).	4NF-3 - Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100)	5NF-2 - Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth).	
RTP Criteria Addition and Subtraction	<p>2AS-1 - Add and subtract across 10.</p> <p>2AS-3 - Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract only ones or only tens to/from a two-digit number.</p> <p>2AS-4 - Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract any 2 two-digit numbers.</p>	3AS-1 - Calculate complements to 100.			<p>6AS/MD-1 - Understand that 2 numbers can be related additively or multiplicatively and quantify additive and multiplicative relationships (multiplicative relationships restricted to multiplication by a whole number).</p> <p>6AS/MD-2 - Use a given additive or multiplicative calculation to derive or complete a related calculation, using arithmetic properties, inverse relationships, and place-value understanding.</p>

<p>RTP criteria Multiplication and Division</p>			<p>4MD-1 Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to making a number 10 or 100 times the size. 4NF-2 Solve division problems, with two-digit dividends and one-digit divisors, that involve remainders, and interpret remainders appropriately according to the context.</p>	<p>5MD-1 Multiply and divide numbers by 10 and 100; understand this as equivalent to making a number 10 or 100 times the size, or 1 tenth or 1 hundredth times the size.</p>	
<p>National Curriculum Programme of Study</p>	<p>Number and Place value - count in steps of 2, 3, and 5 from 0, and in 10s from any number, forward and backward</p> <p>Number - addition and subtraction - recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 - add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and 1s a two-digit number and 10s 2 two-digit numbers adding 3 one-digit numbers</p> <p>Number multiplication and division - recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers</p>	<p>Number and Place value - count from 0 in multiples of 4, 8, 20, 50 and 100; find 10 or 100 more or less than a given number</p> <p>Number - addition and subtraction - add and subtract numbers mentally, including: a three-digit number and 1s a three-digit number and 10s a three-digit number and 100s estimate the answer to a calculation and use inverse operations to check answers</p> <p>Number multiplication and division - recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables</p>	<p>Number and Place value - count in multiples of 6, 7, 9, 25 and 1,000 - find 1,000 more or less than a given number - count backwards through 0 to include negative numbers</p> <p>Number - addition and subtraction - estimate and use inverse operations to check answers to a calculation</p> <p>Number multiplication and division - recall multiplication and division facts for multiplication tables up to 12×12 use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together 3 numbers - recognise and use factor pairs and commutativity in mental calculations</p>	<p>Number and Place value - count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000</p> <p>Number - addition and subtraction - 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</p> <p>Number multiplication and division - establish whether a number up to 100 is prime and recall prime numbers up to 19 - multiply and divide numbers mentally, drawing upon known facts - multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000</p>	<p>Number - addition, subtraction, multiplication and division - 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 - multiply one-digit numbers with up to 2 decimal places by whole numbers multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places - recall equivalences between simple fractions, decimals and percentages, including in different contexts</p>