Year 5 Autumn Term White Rose Planning

	Week 1 - Week 3	Week 4 - Week 5	Week 6 - Week 8	Week 9 - Week 12	Week 13 – Week 14	Week 15
	Place Value	**Addition & Subtraction**	**Multiplication & Division A**	**Fractions A**	**Statistics**	**Consolidation**
White Rose Small Steps	**Y4 PRE-ASSESSMENT and ADDRESS GAPS** **Step 1** Roman numerals to 1,000 **Step 2** Numbers to 10,000 **Step 3** Numbers to 100,000 **Step 4** Numbers to 1,000,000 **Step 5** Read and write numbers to 1,000,000 **Step 6** Powers of 10 **Step 7** 10/100/1,000/10,000/100,000 more or less **Step 8** Partition numbers to 1,000,000 **Step 9** Number line to 1,000,000 **Step 10** Compare and order numbers to 100,000 **Step 11** Compare and order numbers to 1,000,000 **Step 12** Round to the nearest 10, 100 or 1,000 **Step 13** Round within 100,000 **Step 14** Round within 1,000,000 **Y5 POST ASSESSMENT and ADDRESS GAPS**	**Y4 PRE-ASSESSMENT and ADDRESS GAPS** **Step 1** Mental strategies **Step 2** Add whole numbers with more than four digits **Step 3** Subtract whole numbers with more than four digits **Step 4** Round to check answers **Step 5** Inverse operations (addition and subtraction) **Step 6** Multi-step addition and subtraction problems **Step 7** Compare calculations **Step 8** Find missing numbers **Y5 POST ASSESSMENT and ADDRESS GAPS**	**Y4 PRE-ASSESSMENT and ADDRESS GAPS** **Step 1** Multiples **Step 2** Common multiples **Step 3** Factors **Step 4** Common factors **Step 5** Prime numbers **Step 6** Square numbers **Step 7** Cube numbers **Step 8** Multiply by 10, 100 and 1,000 **Step 9** Divide by 10, 100 and 1,000 **Step 10** Multiples of 10, 100 and 1,000 **Y5 POST ASSESSMENT and ADDRESS GAPS**	**Y4 PRE-ASSESSMENT and ADDRESS GAPS** **Step 1** Find fractions equivalent to a unit fraction **Step 2** Find fractions equivalent to a non-unit fraction **Step 3** Recognise equivalent fractions **Step 4** Convert improper fractions to mixed numbers **Step 5** Convert mixed numbers to improper fractions **Step 6** Compare fractions less than 1 **Step 7** Order fractions less than 1 **Step 8** Compare and order fractions greater than 1 **Step 9** Add and subtract fractions with the same denominator Step 10 Add fractions within 1 Step 11 Add fractions with total greater than 1 Step 12 Add to a mixed number Step 13 Add two mixed numbers Step 14 Subtract fractions Step 15 Subtract from a mixed number Step 16 Subtract from a mixed number – breaking the whole Step 17 Subtract two mixed numbers Y5 POST ASSESSMENT and ADDRESS GAPS	**Y4 PRE-ASSESSMENT and ADDRESS GAPS** **Step 1** Draw line graphs **Step 2** Read and interpret line graphs **Step 3** Read and interpret tables **Step 4** Two-way tables **Step 5** Read and interpret timetables **Y5 POST ASSESSMENT and ADDRESS GAPS**	**Y5 Autumn Term Assessment**
National Curriculum Objectives	Read Roman numerals to 1,000 (M) and recognise years written in Roman numerals Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000 Solve number problems and practical problems involving the above	Add and subtract numbers mentally with increasingly large numbers Add and subtract whole numbers with more than four digits, including using formal written methods (columnar addition and subtraction) Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000 Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy	Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers Solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers Establish whether a number up to 100 is prime and recall prime numbers up to 1 Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000 Multiply and divide numbers mentally, drawing upon known facts	Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number Compare and order fractions whose denominators are all multiples of the same number Add and subtract fractions with the same denominator, and denominators that are multiples of the same number	Solve comparison, sum and difference problems using information presented in a line graph Complete, read and interpret information in tables, including timetables	

Problem Solving		**EXS**	**GDS**
	Engage with mathematical activities and problems, making links and moving between different representations (concrete, pictorial, abstract). Independently choose to scaffold thinking using concrete, pictorial or abstract representations, if required. Independently choose to represent thinking using concrete, pictorial or abstract representations, as appropriate. Make suggestions of ways to solve a range of problems. Organise work from the outset, looking for ways to record and work systematically. Find and predict possibilities that match the context using patterns spotted to support. Independently check and improve work (e.g. look for other possibilities, repeats, missing answers, errors and ways to improve). Pattern spot and independently express generalisations/rules in words. Make and investigate conjectures and provide examples and counter-examples. When they have solved a problem, pose a similar problem for a peer.	For all mathematical concepts, ideas and techniques: Represent it in a variety of ways *(e.g. using concrete materials, pictures and symbols – the CPA approach).* Make up his or her own examples *(and non-examples)* of it. See connections between it and other facts or ideas. Recognise it in new situations and contexts. Make use of it in various ways, including in new situations.	Solve problems of greater complexity *(i.e. where the approach is not immediately obvious),* demonstrating creativity and imagination. Independently explore and investigate mathematical contexts and structures.

Reasoning	Provide a clear, correct, logical justification, expressing generalisation/rules in words. Reflect on others' justifications and use this to improve their work. Edit and improve their own and a peer's justification. Investigate 'what if?' questions. Create 'what if?' questions.	Describe it in his or her own words. Explain it to someone else.	Communicate results clearly and systematically explain and generalise the mathematics.

Year 5 Spring Term White Rose Planning

	Week 1 - Week 3	Week 4 - Week 5	Week 6 - Week 8	Week 9 - Week 10	Week 11
	Multiplication & Division	**Fractions B**	**Decimals & Percentages**	**Measurement *(perimeter & area)***	**Consolidation** **Y5 Spring Term Assessment**
White Rose Small Steps	**Y4 PRE-ASSESSMENT and ADDRESS GAPS** **Step 1** Multiply up to a 4-digit number by a 1-digit number **Step 2** Multiply a 2-digit number by a 2-digit number (area model) **Step 3** Multiply a 2-digit number by a 2-digit number **Step 4** Multiply a 3-digit number by a 2-digit number **Step 5** Multiply a 4-digit number by a 2-digit number **Step 6** Solve problems with multiplication Step 7 Short division **Step 8** Divide a 4-digit number by a 1-digit number **Step 9** Divide with remainders **Step 10** Efficient division **Step 11** Solve problems with multiplication and division **Y5 POST ASSESSMENT and ADDRESS GAPS**	**Y4 PRE-ASSESSMENT and ADDRESS GAPS** **Step 1** Multiply a unit fraction by an integer **Step 2** Multiply a non-unit fraction by an integer **Step 3** Multiply a mixed number by an integer **Step 4** Calculate a fraction of a quantity **Step 5** Fraction of an amount **Step 6** Find the whole **Step 7** Use fractions as operators **Y5 POST ASSESSMENT and ADDRESS GAPS**	**Y4 PRE-ASSESSMENT and ADDRESS GAPS** **Step 1** Decimals up to 2 decimal places **Step 2** Equivalent fractions and decimals (tenths) **Step 3** Equivalent fractions and decimals (hundredths) **Step 4** Equivalent fractions and decimals **Step 5** Thousandths as fractions **Step 6** Thousandths as decimals **Step 7** Thousandths on a place value chart **Step 8** Order and compare decimals (same number of decimal places) **Step 9** Order and compare any decimals with up to 3 decimal places **Step 10** Round to the nearest whole number **Step 11** Round to 1 decimal place **Step 12** Understand percentages **Step 13** Percentages as fractions **Step 14** Percentages as decimals **Step 15** Equivalent fractions, decimals and percentages **Y5 POST ASSESSMENT and ADDRESS GAPS**	**Y4 PRE-ASSESSMENT and ADDRESS GAPS** **Step 1** Perimeter of rectangles **Step 2** Perimeter of rectilinear shapes **Step 3** Perimeter of polygons **Step 4** Area of rectangles **Step 5** Area of compound shapes **Step 6** Estimate area **Y5 POST ASSESSMENT and ADDRESS GAPS**	
National Curriculum Objectives	Multiply numbers up to four digits by a 1- or 2-digit number using a formal written method, including long multiplication for 2-digit numbers Divide up to four digits by a 1-digit number using the formal written method of short division and interpret remainders appropriately for the context Solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes	Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams 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 (Y4)	Read, write, order and compare numbers with up to 3 decimal places Read and write decimal numbers as fractions Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths Solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25 Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents Solve problems involving numbers up to 3 decimal places Round decimals with 2 decimal places to the nearest whole number and to 1 decimal place 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	Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres Calculate and compare the area of rectangles (including squares), including using standard units, square centimetres (cm2) and square metres (m2), and estimate the area of irregular shapes	
Problem Solving	Engage with mathematical activities and problems, making links and moving between different representations (concrete, pictorial, abstract). Independently choose to scaffold thinking using concrete, pictorial or abstract representations, if required. Independently choose to represent thinking using concrete, pictorial or abstract representations, as appropriate. Make suggestions of ways to solve a range of problems. Organise work from the outset, looking for ways to record and work systematically. Find and predict possibilities that match the context using patterns spotted to support. Independently check and improve work (e.g. look for other possibilities, repeats, missing answers, errors and ways to improve). Pattern spot and independently express generalisations/rules in words. Make and investigate conjectures and provide examples and counter-examples. When they have solved a problem, pose a similar problem for a peer.		**EXS** For all mathematical concepts, ideas and techniques: Represent it in a variety of ways *(e.g. using concrete materials, pictures and symbols – the CPA approach).* Make up his or her own examples *(and non-examples)* of it. See connections between it and other facts or ideas Recognise it in new situations and contexts. Make use of it in various ways, including in new situations.	**GDS** Solve problems of greater complexity *(i.e. where the approach is not immediately obvious),* demonstrating creativity and imagination. Independently explore and investigate mathematical contexts and structures.	

Reasoning	Provide a clear, correct, logical justification, expressing generalisation/rules in words. Reflect on others' justifications and use this to improve their work. Edit and improve their own and a peer's justification. Investigate 'what if?' questions. Create 'what if?' questions.	Describe it in his or her own words. Explain it to someone else.	Communicate results clearly and systematically explain and generalise the mathematics.

Year 5 Summer Term White Rose Planning

	Week 1 - Week 3	Week 4 - Week 5	Week 6 - Week 8	Week 9	Week 10 - Week 11	Week 12	Week 13
	Geometry ***(shape)***	**Geometry** ***(position & direction)***	**Decimals**	**Negative Numbers**	**Measurement** ***(converting units)***	**Measurement** ***(volume)***	**Consolidation** **Y5 Summer Term Assessment**
White Rose Small Steps	**Y4 PRE-ASSESSMENT and ADDRESS GAPS** **Step 1** Understand and use degrees **Step 2** Classify angles **Step 3** Estimate angles **Step 4** Measure angles up to 180° **Step 5** Draw lines and angles accurately **Step 6** Calculate angles around a point **Step 7** Calculate angles on a straight line **Step 8** Lengths and angles in shapes **Step 9** Regular and irregular polygons **Step 10** 3-D shapes **Y5 POST ASSESSMENT and ADDRESS GAPS**	**Y4 PRE-ASSESSMENT and ADDRESS GAPS** **Step 1** Read and plot coordinates **Step 2** Problem solving with coordinates **Step 3** Translation **Step 4** Translation with coordinates **Step 5** Lines of symmetry **Step 6** Reflection in horizontal and vertical line **Y5 POST ASSESSMENT and ADDRESS GAPS**	**Y4 PRE-ASSESSMENT and ADDRESS GAPS** **Step 1** Use known facts to add and subtract decimals within 1 **Step 2** Complements to 1 **Step 3** Add and subtract decimals across 1 **Step 4** Add decimals with the same number of decimal places **Step 5** Subtract decimals with the same number of decimal places **Step 6** Add decimals with different numbers of decimal places **Step 7** Subtract decimals with different numbers of decimal places **Step 8** Efficient strategies for adding and subtracting decimals **Step 9** Decimal sequences **Step 10** Multiply by 10, 100 and 1,000 **Step 11** Divide by 10, 100 and 1,000 **Step 12** Multiply and divide decimals – missing values **Y5 POST ASSESSMENT and ADDRESS GAPS**	**Y4 PRE-ASSESSMENT and ADDRESS GAPS** **Step 1** Understand negative numbers **Step 2** Count through zero in 1s **Step 3** Count through zero in multiples **Step 4** Compare and order negative numbers **Step 5** Find the difference **Y5 POST ASSESSMENT and ADDRESS GAPS**	**Y4 PRE-ASSESSMENT and ADDRESS GAPS** **Step 1** Kilograms and kilometres **Step 2** Millimetres and millilitres **Step 3** Convert units of length **Step 4** Convert between metric and imperial units **Step 5** Convert units of time **Step 6** Calculate with timetables **Y5 POST ASSESSMENT and ADDRESS GAPS**	**Y4 PRE-ASSESSMENT and ADDRESS GAPS** **Step 1** Cubic centimetres **Step 2** Compare volume **Step 3** Estimate volume **Step 4** Estimate capacity **Y5 POST ASSESSMENT and ADDRESS GAPS**	
National Curriculum Objectives	Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles Draw given angles, and measure them in degrees (°) Identify angles at a point and 1 whole turn (total 360°) Identify: angles at a point and 1 whole turn (total 360°); angles at a point on a straight line and half a turn (total 180°) 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 Identify 3-D shapes, including cubes and other cuboids, from 2-D representations	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	Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents Solve problems involving number up to 3 decimal places Read, write, order and compare numbers with up to 3 decimal places Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000	Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero	Convert between different units of metric measure [for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre] Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints Solve problems involving converting between units of time	Estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)] and capacity Estimate volume and capacity [for example, using water]	
Problem Solving	Engage with mathematical activities and problems, making links and moving between different representations (concrete, pictorial, abstract). Independently choose to scaffold thinking using concrete, pictorial or abstract representations, if required. Independently choose to represent thinking using concrete, pictorial or abstract representations, as appropriate. Make suggestions of ways to solve a range of problems. Organise work from the outset, looking for ways to record and work systematically. Find and predict possibilities that match the context using patterns spotted to support. Independently check and improve work (e.g. look for other possibilities, repeats, missing answers, errors and ways to improve). Pattern spot and independently express generalisations/rules in words. Make and investigate conjectures and provide examples and counter-examples. When they have solved a problem, pose a similar problem for a peer.			**EXS** For all mathematical concepts, ideas and techniques: Represent it in a variety of ways *(e.g. using concrete materials, pictures and symbols – the CPA approach).* Make up his or her own examples *(and non-examples)* of it. See connections between it and other facts or ideas. Recognise it in new situations and contexts. Make use of it in various ways, including in new situations.		**GDS** Solve problems of greater complexity *(i.e. where the approach is not immediately obvious),* demonstrating creativity and imagination. Independently explore and investigate mathematical contexts and structures.	

Reasoning	Provide a clear, correct, logical justification, expressing generalisation/rules in words. Reflect on others' justifications and use this to improve their work. Edit and improve their own and a peer's justification. Investigate 'what if?' questions. Create 'what if?' questions.	Describe it in his or her own words. Explain it to someone else.	Communicate results clearly and systematically explain and generalise the mathematics.