Year 6 Autumn Term White Rose Planning

	Week 1 - Week 2	Week 3 - Week 7	Week 8 - Week 9	Week 10 - Week 11	Week 12	Week 13 – Week 14	Week 15
	Place Value	**Addition, Subtraction, Multiplication & Division**	**Fractions A**	**Fractions B**	**Measurement** *(converting units)*	**Ratio**	**Consolidation**
White Rose Small Steps	**Y5 PRE-ASSESSMENT and ADDRESS GAPS- YEAR 5 FOR PLACE VALUE** **Step 1** Numbers to 1,000,000 **Step 2** Numbers to 10,000,000 **Step 3** Read and write numbers to 10,000,000 **Step 4** Powers of 10 **Step 5** Number line to 10,000,000 **Step 6** Compare and order any integers **Step 7** Round any integer **Step 8** Negative numbers **Y6 POST ASSESSMENT and ADDRESS GAPS**	**Y5 PRE-ASSESSMENT and ADDRESS GAPS** **Step 1** Add and subtract integers **Step 2** Common factors **Step 3** Common multiples **Step 4** Rules of divisibility **Step 5** Primes to 100 **Step 6** Square and cube numbers **Step 7** Multiply up to a 4-digit number by a 2-digit number **Step 8** Solve problems with multiplication **Step 9** Short division **Step 10** Division using factors **Step 11** Introduction to long division **Step 12** Long division with remainders **Step 13** Solve problems with division **Step 14** Solve multi-step problems **Step 15** Order of operations **Step 16** Mental calculations and estimation **Step 17** Reason from known facts **Y6 POST ASSESSMENT and ADDRESS GAPS**	**Y5 PRE-ASSESSMENT and ADDRESS GAPS** **Step 1** Equivalent fractions and simplifying **Step 2** Equivalent fractions on a number line **Step 3** Compare and order (denominator) **Step 4** Compare and order (numerator) **Step 5** Add and subtract simple fractions **Step 6** Add and subtract any two fractions **Step 7** Add mixed numbers **Step 8** Subtract mixed number **Step 9** Multi-step problems **Y6 POST ASSESSMENT and ADDRESS GAPS**	**Y5 PRE-ASSESSMENT and ADDRESS GAPS** **Step 1** Multiply fractions by integers **Step 2** Multiply fractions by fractions **Step 3** Divide a fraction by an integer **Step 4** Divide any fraction by an integer **Step 5** Mixed questions with fractions **Step 6** Fraction of an amount **Step 7** Fraction of an amount – find the whole **Y6 POST ASSESSMENT and ADDRESS GAPS**	**Y5 PRE-ASSESSMENT and ADDRESS GAPS** **Step 1** Metric measures **Step 2** Convert metric measures **Step 3** Calculate with metric measures **Step 4** Miles and kilometres **Step 5** Imperial measures **Y6 POST ASSESSMENT and ADDRESS GAPS**	**Y5 PRE-ASSESSMENT and ADDRESS GAPS** **Step 1** Add or multiply? **Step 2** Use ratio language **Step 3** Introduction to the ratio symbol **Step 4** Ratio and fractions **Step 5** Scale drawing **Step 6** Use scale factors **Step 7** Similar shapes **Step 8** Ratio problems **Step 9** Proportion problems **Step 10** Recipes **Y6 POST ASSESSMENT and ADDRESS GAPS**	**Y6 Autumn Term Assessment**
National Curriculum Objectives	Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit Round any whole number to a required degree of accuracy Use negative numbers in context, and calculate intervals across zero Solve number and practical problems that involve the above	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 Identify common factors, common multiples and prime numbers Multiply multi-digit numbers up to four digits by a 2-digit whole number using the formal written method of long multiplication Perform mental calculations, including with mixed operations and large numbers Divide numbers up to four digits by a 2-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context Divide numbers up to four digits by a 2-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	Use common factors to simplify fractions; use common multiples to express fractions in the same denomination Compare and order fractions, including fractions > 1 Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions Identify common factors, common multiples and prime numbers 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	Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams **(Y5)** Multiply simple pairs of proper fractions, writing the answer in its simplest form Divide proper fractions by whole numbers Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions Solve problems involving addition, subtraction, multiplication and division Associate a fraction with division and calculate decimal fraction equivalents	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	Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples Solve problems involving similar shapes where the scale factor is known or can be found	
P r					**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 their work (e.g. look for other possibilities, repeats, missing answers, errors and ways to improve). Pattern spot and begin to express generalisations/proof using words and symbolic notation. 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 proof of reasoning, expressing generalisations in words and symbolic notation. Reflect on others' proof and use this to improve their own work. Edit and improve their own and a peer's proof. 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 6 Spring Term White Rose Planning

	Week 1 - Week 2	Week 3 - Week 4	Week 5 - Week 6	Week 7 - Week 8	Week 9 - Week 10	Week 11
	Algebra	**Decimals**	**Fractions, Decimals & Percentages**	**Measurement** *(area, perimeter & volume)*	**Statistics**	**Consolidation**
White Rose Small Steps	**Y5 PRE-ASSESSMENT and ADDRESS GAPS** **Step 1** 1-step function machines **Step 2** 2-step function machines **Step 3** Form expressions **Step 4** Substitution **Step 5** Formulae **Step 6** Form equations **Step 7** Solve 1-step equations **Step 8** Solve 2-step equations **Step 9** Find pairs of values **Step 10** Solve problems with two unknowns **Y6 POST ASSESSMENT and ADDRESS GAPS**	**Y5 PRE-ASSESSMENT and ADDRESS GAPS** **Step 1** Place value within 1 **Step 2** Place value – integers and decimals **Step 3** Round decimals **Step 4** Add and subtract decimals **Step 5** Multiply by 10, 100 and 1,000 **Step 6** Divide by 10, 100 and 1,000 **Step 7** Multiply decimals by integers **Step 8** Divide decimals by integers **Step 9** Multiply and divide decimals in context **Y6 POST ASSESSMEN and ADDRESS GAPS**	**Y5 PRE-ASSESSMENT and ADDRESS GAPS** **Step 1** Decimal and fraction equivalents **Step 2** Fractions as division **Step 3** Understand percentages **Step 4** Fractions to percentages **Step 5** Equivalent fractions, decimals and percentages **Step 6** Order fractions, decimals and percentages **Step 7** Percentage of an amount – one step **Step 8** Percentage of an amount – multi-step **Step 9** Percentages – missing values **Y6 POST ASSESSMENT and ADDRESS GAPS**	**Y5 PRE-ASSESSMENT and ADDRESS GAPS** **Step 1** Shapes – same area **Step 2** Area and perimeter **Step 3** Area of a triangle – counting squares **Step 4** Area of a right-angled triangle **Step 5** Area of any triangle **Step 6** Area of a parallelogram **Step 7** Volume – counting cubes **Step 8** Volume of a cuboid **Y6 POST ASSESSMENT and ADDRESS GAPS**	**Y5 PRE-ASSESSMENT and ADDRESS GAPS** **Step 1** Line graphs **Step 2** Dual bar charts **Step 3** Read and interpret pie charts **Step 4** Pie charts with percentages **Step 5** Draw pie charts **Step 6** The mean **Y6 POST ASSESSMENT and ADDRESS GAPS**	**Y6 Spring Term Assessment**
National Curriculum Objectives	Use simple formulae Generate and describe linear number sequences Find pairs of numbers that satisfy an equation with two unknowns Enumerate possibilities of combinations of two variables Express missing number problems algebraically	Identify the value of each digit in numbers given to 3 decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places Solve problems which require answers to be rounded to specified degrees of accuracy Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why Multiply 1-digit numbers with up to 2 decimal places by whole numbers Use written division methods in cases where the answer has up to 2 decimal places Solve problems involving addition, subtraction, multiplication and division	Use common factors to simplify fractions; use common multiples to express fractions in the same denomination Associate a fraction with division and calculate decimal fraction equivalents for a simple fraction Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts Compare and order fractions, including fractions >1 Solve problems involving the calculation of percentages and the use of percentages for comparison	Recognise that shapes with the same areas can have different perimeters and vice versa Recognise when it is possible to use formulae for area and volume of shapes Calculate the area of parallelograms and triangles Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), and extending to other units	Interpret and construct pie charts and line graphs and use these to solve problems Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs (Year 4) Calculate and interpret the mean as an average	

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 their work (e.g. look for other possibilities, repeats, missing answers, errors and ways to improve). Pattern spot and begin to express generalisations/proof using words and symbolic notation. 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 proof of reasoning, expressing generalisations in words and symbolic notation. Reflect on others' proof and use this to improve their own work. Edit and improve their own and a peer's proof. 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 6 Summer Term White Rose Planning

	Week 1 - Week 3	Week 4	Week 5 – Week 13	
	Geometry (shape)	**Geometry (position & direction)**	**Consolidation**	
White Rose Small Steps	**Y5 PRE-ASSESSMENT and ADDRESS GAPS** **Step 1** Measure and classify angles **Step 2** Calculate angles **Step 3** Vertically opposite angles **Step 4** Angles in a triangle **Step 5** Angles in a triangle – special cases **Step 6** Angles in a triangle – missing angles **Step 7** Angles in a quadrilateral **Step 8** Angles in polygons **Step 9** Circles **Step 10** Draw shapes accurately **Step 11** Nets of 3-D shapes **Y6 POST ASSESSMENT and ADDRESS GAPS**	**Y5 PRE-ASSESSMENT and ADDRESS GAPS** **Step 1** The first quadrant **Step 2** Read and plot points in four quadrants **Step 3** Solve problems with coordinates **Step 4** Translations **Step 5** Reflections **Y6 POST ASSESSMENT and ADDRESS GAPS**	**Y6 Summer Term Assessment**	
National Curriculum Objectives	Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles Draw given angles, and measure them in degrees (°) (Y5) Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles (Y5) 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 Draw 2-D shapes using given dimensions and angles	Describe positions on the full coordinate grid (all four quadrants) Draw and translate simple shapes on the coordinate plane, and reflect them in the axes		
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 their work (e.g. look for other possibilities, repeats, missing answers, errors and ways to improve). Pattern spot and begin to express generalisations/proof using words and symbolic notation. 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 proof of reasoning, expressing generalisations in words and symbolic notation. Reflect on others' proof and use this to improve their own work. Edit and improve their own and a peer's proof. 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.	