Year 6 Maths Overview

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13
Autumn	**Unit 1** Place value		**Unit 2** Four Operations				**Unit 2**	**Unit 3** Fractions, decimals and percentages					
Spring	**Unit 4** Area, perimeter, position and direction		**Unit 5** Shape- Angles			**Unit 6** Converting Units	**Unit 7** Ratio		**Unit 8** Algebra		**Consolidation**		
Summer	**Unit 9** Statistics		**Revision**		**SATS**		**Recap units in more depth based on assessment** Fiver challenge						

Year 6 maths curriculum map

COVID Recovery Curriculum
NCETM prioritisation curriculum/ NCETM spines/ White Rose SOL/ DFE Ready to Progress criteria have all been used to support the planning, teaching and learning of mathematics.

Rough suggestions are given for the intended length of each unit, but teachers are expected to adjust according to the needs and prior learning of their pupils.

Unit	Unit name	Learning outcomes	Links with other resources
1 (2 weeks)	**Place value** **White Rose and NCETM**	1) Pupils use representations to identify and explain patterns in powers of 10 2) Pupils use their knowledge of the composition of up to eight-digit numbers to solve problems 3) Pupils explain how to read numbers with up to seven digits efficiently 4) Pupils recognise and create numbers that contain place-holding zeroes 5) Pupils determine the value of digits in numbers up to tens of millions 6) Pupils explain how to compare up to eight-digit numbers 7) Pupils use their knowledge of the composition of seven-digit numbers to solve problems 8) Pupils add and subtract mentally without bridging a boundary (only one and more than one-digit changes) 9) Pupils explain how a seven-digit number can be composed and decomposed into parts 10) Pupils identify numbers with up to seven digits on marked number lines 11) Pupils estimate the value and position of numbers on unmarked or partially marked number lines 12) Pupils explain why we round and how to round seven-digit numbers to the nearest million 13) Pupils explain how to round seven-digit numbers to the nearest hundred thousand 14) Pupils explain how to round up to seven-digit numbers to any power of 10 in context 15) Negative numbers	NCETM prioritisation unit 2 and 3 White Rose - Place value unit
2 (5 weeks)	**Addition, subtraction, multiplication and division** **White Rose and NCETM**	1) Pupils to add and subtract integers. (Add and subtract integers) 2) Pupils find the common factors of two numbers. (Common factors) 3) Building on knowledge of multiples, pupils find common multiples of numbers. (Common multiples) 4) (Rules of divisibility) 5) Building on their learning in year 5, pupils should know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers. (Primes to 100) 6) Pupils have identified square and cube numbers previously and now explore the relationship between them, and solve problems involving them. (Square and cube numbers) 7) Pupils consolidate their knowledge of column multiplication, multiplying numbers with up to 4 digits by a 2-digit number. (Multiply up to a 4-digit number by 2-digit number) (NCETM spines 2.23)	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. • 2.18 Using equivalence to calculate • 2.23 Multiplication strategies for larger numbers and long multiplication

		8) (Solve problems with multiplication) 9) Pupils build on their understanding of dividing up to 4-digits by 1-digit by now dividing by up to 2-digits. They use the short division method and focus on the grouping structure of division. (Short division) 10) Pupils use their number sense, specifically their knowledge of factors, to be able to see relationships between the dividend (number being divided) and the divisor (number that the dividend is being divided by). (Division using factors) NCETM spines 2.24 11) (Introduction to long division) NCETM spines 2.24 12) (Long division with remainders) NCETM spines 2.24 13) (Solve problems with division) 14) (Solve multi-step problems) 15) Pupils will look at different operations within a calculation and consider how the order of operations affects the answer. Pupils will learn that, in mixed operation calculations, calculations are not carried out from left to right. (Order of operations) See NCETM spine 2.28 16) Discussions with pupils around efficient mental calculations and sensible estimations need to run through all steps. (Mental calculations and estimation) 17) Pupils should use known facts from one calculation to determine the answer of another similar calculation without starting afresh. (Reason from known facts)	• 2.24 Division: dividing by two-digit divisors • 2.25 Using compensation to calculate 2.22 Combining multiplication with addition and subtraction 2.28 Combining division with addition and subtraction White Rose – Four operations unit
3 (6 weeks)	**Fractions, Decimals and Percentages** **NCETM**	1) Pupils explain how to write a fraction in its simplest form 2) Pupils reason and apply their knowledge of how to write a fraction in its simplest form 3) Pupils use their knowledge of how to write a fraction in its simplest form when solving addition and subtraction problems (1) 4) Pupils use their knowledge of how to write a fraction in its simplest form when solving addition and subtraction problems (2) 5) Pupils use their knowledge of how to write a fraction in its simplest form when solving multiplication problems 6) Pupils explain, using an image, how to add related fractions (unit fractions) 7) Pupils explain what is meant by 'related fractions' 8) Pupils explain, without using an image, how to add related fractions 9) Pupils use their knowledge of adding related fractions to solve problems in a range of contexts 10) Pupils explain, with and without using an image, how to subtract related fractions (unit fractions) 11) Pupils use their knowledge of adding and subtracting related fractions to solve problems in a range of contexts 12) Pupils explain, with and without using an image, how to add and subtract related fractions (non-unit fractions) 13) Pupils explain, with and without using an image, how to add and subtract related fractions (non-unit fractions that bridge the whole) 14) Pupils use their fraction sense to fraction addition, subtraction and comparison 15) Pupils explain how to add or subtract non-related fractions with different denominators 16) Pupils use their knowledge of adding or subtracting non-related fractions with different denominators to solve problems in a range of contexts (non related fractions) 17) Pupils explain how to compare pairs of non-related fractions (converting to common denominators) 18) Pupils explain how to compare pairs of non-related fractions (using fraction sense)	NCETM prioritisation unit 7 6F–1 Recognise when fractions can be simplified, and use common factors to simplify fractions. • 6F–2 Express fractions in a common denomination and use this to compare fractions that are similar in value. • 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. • 3.8 Common denomination: more adding and subtracting • 3.9 Multiplying fractions and dividing fractions by a whole number White Rose Fractions A & B units

		19) Pupils explain how to compare pairs of non-related fractions (using common numerators) 20) Pupils explain which method for comparing non-related fractions is most efficient 21) Pupils explain how to multiply two unit fractions 22) Pupils explain how to multiply two non-unit fractions 23) Pupils explain how to divide a unit fraction by a whole number 24) Pupils explain how to divide a non-unit fraction by a whole number 25) Pupils explain when and how to divide efficiently a fraction by a whole number 26) Pupils explain what percent means 27) Pupils explain how to represent a percentage in different ways 28) Pupils explain how to convert percentages to decimals and fractions (with a denominator of 100) 29) Pupils explain how to convert a percentage to a fraction (without denominator of 100) 30) Pupils use their knowledge of fraction-decimal-percentage conversions to solve conversion problems in a range of contexts 31) Pupils use their knowledge of calculating 50%, 10% and 1% of a number to solve problems in a range of contexts 32) Pupils use their knowledge of calculating common percentages of a number to solve problems in a range of contexts 33) Pupils use their knowledge of calculating any percentage of a number to solve problems in a range of contexts 34) Pupils explain how to solve problems where the percentage part and the size of the part is known and the whole is unknown 35) Pupils explain how to solve problems where the known percentage part and the size of the part changes the whole	
4 (2 week)	**Perimeter, Area, Position and Direction** **NCETM**	1) Pupils explain how to calculate the area of a parallelogram 2) Pupils explain how to calculate the area of a triangle 3) Pupils explain why shapes can have the same perimeters but different areas 4) Pupils explain why shapes can have the same areas but different perimeters 5) Pupils describe the relationship between scale factors and side lengths of two shapes 6) Pupils describe the relationship between scale factors and perimeters of two shapes 7) Pupils describe positions on the full coordinate grid (all four quadrants) 8) Pupils draw and translate simple shapes on the coordinate plane and reflect them in the axes	NCETM prioritisation unit 6 White Rose - Position and Direction unit - Area, perimeter and volume unit
5 (3 weeks)	**Properties of shape** **White Rose**	1) Pupils will recap measuring angles using a protractor. (Measure with a protractor) 2) Pupils need to draw lines correct to the nearest millimetre. They use a protractor to draw angles of a given size. (Draw lines and angles accurately) 3) Pupils build on their understanding of degrees in a right angle and make the connection that there are two right angles on a straight line and four right angles around a point. (Introduce angles) 4) Pupils build on their knowledge of a right angle and recognise two right angles are equivalent to a straight line, or a straight line is a half of a turn. (Angles on a straight line)	NCETM prioritisation unit 6 6G–1 Draw, compose, and decompose shapes according to given properties, including dimensions, angles and area, and solve related problems. White Rose – Shape unit

		5) Pupils need to know that there are 360 degrees in a full turn. (Angles around a point) 6) Pupils apply their understanding of angles in a right angle, angles on a straight line and angles around a point to calculate missing angles. (Calculate angles) 7) Pupils recognise that vertically opposite angles share a vertex. They realise that they are equal and use practical examples to show this. (Vertically opposite angles) 8) Pupils practically explore interior angles of a triangle and understand that the angles will add up to 180 degrees. (Angles in a triangle) 9) Pupils are introduced to hatch marks for equal lengths. They concentrate on angles in right angled triangles and isosceles triangles. (Angles in a triangle - special cases) 10) Pupils make links and recognise key features of specific types of triangle. They think about using this information to solve missing angle problems. (Angles in a triangle - missing angles) 11) Pupils use their knowledge of properties of shape to explore interior angles in a parallelogram, rhombus, trapezium etc. (Angles in special quadrilaterals) 12) Pupils use their knowledge of properties of shape to explore interior angles in polygons. (Angles in regular polygons) 13) Pupils begin by drawing shapes accurately on different grids such as squared and dotted paper. They then move on to using a protractor on plain paper. (Draw shapes accurately) 14) Pupils use their knowledge of 2 D and 3 D shapes to identify three dimensional shapes from their nets. (Draw nets of 3D shapes)	
6 (1 week)	**Converting units** **White Rose** (Also incorporated into different areas of the curriculum/ fluency).	1) Pupils read, write and recognise all metric measures for length, mass and capacity. (Metric measures) 2) Pupils will use their skills of multiplying and dividing by 10, 100 and 1,000 when converting between units of length, mass and capacity. (Convert metric measures) 3) Pupils use and apply their conversion skills to solve measurement problems in context. (Calculate with metric measures) 4) Pupils need to know that 5 miles is approximately equal to 8 km. (Miles and kilometres) 5) Pupils to perform related conversions, both within imperial measures and between imperial and metric. (Imperial Measures)	White Rose – Converting units unit
7 (2 weeks)	**Ratio and proportion** **NCETM** (Teach what is needed for SATs)	1) Pupils describe the relationship between two factors (in a ratio context) 2) Pupils explain how to use multiplication and division to calculate unknown values (two variables) 3) Pupils explain how to use multiplication and division to calculate unknown values (three variables) 4) Pupils explain how to use a ratio grid to calculate unknown values 5) Pupils explain how to use multiplication to solve correspondence problems 6) Pupils explain how and why scaling is used to make and interpret maps 7) Pupils will use their knowledge of multiplication and division to solve scaling problems in a range of contexts 8) Pupils identify and describe the relationship between two shapes using scale factors (squares) 9) Pupils identify and describe the relationship between two shapes using scale factors and ratios (regular polygons)	NCETM prioritisation unit 9 6AS/MD–3 Solve problems involving ratio relationships. 2.27 Scale factors, ratio and proportional reasoning White Rose – Ratio unit

		10) Pupils identify and describe the relationship between two shapes using scale factors and ratios (irregular polygons)	
8 (2 weeks)	**Algebra** **White Rose**	1) Pupils explore simple one step function machines. (Find a rule - one step) 2) Pupils build on their knowledge of one step functions to look at two step function machines. (Find a rule - two step) 3) Pupils use simple algebraic inputs e.g. y. (Forming expressions) 4) Pupils substitute into simple expressions to find a particular value. (Substitution) 5) Pupils substitute into familiar formulae such as those for area and volume. (Formulae) 6) Building on the earlier step of forming expressions, pupils now use algebraic notation to form one step equations. (Forming equations) 7) Pupils solve simple one step equations involving the four operations. (Solve simple one step equations) 8) Pupils progress from solving equations that require one step to equations that require two steps. (Solve two step equations) 9) Pupils use their understanding of substitution to consider what possible values a pair of variables can take. (Find pairs of values) 10) Pupils find possible solutions to equations which involve multiples of one or more unknown.	White Rose – Algebra unit
9 (1 weeks)	**Statistics** **White Rose** (Also incorporated into different areas of the curriculum).	1) Pupils will read, interpret and draw line graphs. 2) Pupils will read, interpret and draw dual bar charts. 3) Pupils will read and interpret pie charts 4) Pupils will read and interpret pie charts with percentages 5) Pupils draw pie charts	NCETM prioritisation unit 13 2.26 Mean average and equal shares White Rose – Statistics unit
Revision			
KS2 SATs			
Cover units in more depth based on assessment (ratio/ algebra etc.)			

FIVER CHALLENGE	

Dark grey references are ready-to-progress criteria from the DfE Guidance 2020
Light grey references are from the NCETM Primary Mastery Professional Development materials
Blue references are White Rose materials