Maths Long Term Overview – Year 6

Curriculum Rationale

Our maths curriculum has been designed to support a mastery approach to teaching and learning whilst effectively meeting the National Curriculum aims and objectives. This curriculum aims to provide children with time to apply their skills, explore concepts thoroughly and to demonstrate a deeper understanding of mathematical concepts. This curriculum aims to support pupils and teachers in developing a greater confidence within mathematics and strives to provide children with the opportunities to become mathematicians.

A mathematician is somebody who: makes connections, shows fluency, can provide a reason for what they are doing, is creative, checks their work in a variety of ways, is resilient, explains, evaluates, models, invents, applies their learning to a range of contexts, is curious, has confidence, uses mistakes to improve, is resourceful and efficient.

At Whitemoor, we aim to provide a knowledge-rich curriculum, allowing time for pupils to develop a deeper understanding and make connections between new and prior learning. Therefore, our lessons are created with care and are constantly adapted over time (using input from staff, up-to-date research and observations of pupils) to meet the needs of our pupils and allow them to continue making progress over time. Lessons are designed to provide a variety of representations, which is vital to introduce and explore concepts effectively. All lessons will contain: recall of prior learning, a range of representations, fluency, problem solving and reasoning opportunities.

Key Documents

NCETM Calculations Guidance
NCETM Maths Guidance for KS1 and KS2
NCETM 5 Big Ideas for Mastery
NCETM Ready-to-progress criteria
White Rose Schemes of Learning
Maths steps to success and vocabulary for Year 6

Maths Long Term Overview – Year 6

Yearly 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
Autumn	Place Value		Addition, subtraction, multiplication and division					Fractions A		Fractions B		Converting measures
Spring	Ratio		Algebra		Decimals		Fractions, decimals and percentages		Area, perimeter and volume		Statistics	
Summer	Shape			Position and direction	Themed projects, consolidation and problem solving							

Maths Long Term Overview – Year 6

Autumn Term Coverage and National Curriculum Objectives (13 weeks and 4 days)				
Week 1 – Week 2	**Week 3 – Week 7**	**Week 8 – Week 9**	**Week 10 – Week 11**	**Week 12**
Place Value NCETM Resources: Powers of 10 Place value in numbers up to 10,000,000 Numbers to 10 million in the linear system Recall: Autumn Block 1 Flashback 4 National Curriculum Objectives: Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit.	Four Operations NCETM Resources: Additive and multiplicative relationships (inverse) Derive related calculations Solve problems with 2 unknowns Recall: Autumn Block 2 Flashback 4 National Curriculum Objectives: Solve addition and subtraction multi step problems in contexts, deciding which operations and methods to use and why.	Fractions A NCETM Resources: Simplify fractions Express fractions in a common denomination Compare fractions with different denominators Recall: Autumn Block 3 Flashback 4 National Curriculum Objectives: Use common factors to simplify fractions; use common multiples to express fractions in the same denomination.	Fractions B NCETM Resources: Simplify fractions Express fractions in a common denomination Compare fractions with different denominators Recall: Autumn Block 4 Flashback 4 National Curriculum Objectives: Multiply simple pairs of proper fractions, writing the answer in its simplest form. Divide proper fractions by whole numbers.	Converting Measures NCETM Resources: Convert between units of measure (Y5) Recall: Autumn Block 5 Flashback 4 National Curriculum Objectives: Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate. Use, read, write and convert between standard units, converting

Maths Long Term Overview – Year 6

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 all of the above.	Multiply multi-digit number up to 4 digits by a 2-digit number using the formal written method of long multiplication. Divide numbers up to 4 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. Divide numbers up to 4 digits by a 2-digit number using the formal written method of short division, interpreting remainders according to the context. Perform mental calculations, including with mixed	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.	Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions. Solve problems involving addition, subtraction, multiplication and division.	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 3d.p. Convert between miles and kilometres.

Maths Long Term Overview – Year 6

	operations and large numbers. *Identify common factors, common multiples and prime numbers.* *Use their knowledge of the order of operations to carry out calculations involving the four operations.* *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.*			

Autumn Small Steps				
Place value (2 weeks)	**Four Operations (5 weeks)**	**Fractions A (2 weeks)**	**Fractions B (2 weeks)**	**Converting Measures (1 week)**

Maths Long Term Overview – Year 6

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*	***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 up to 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* *Solve multi-step problems* ***Step 14***: *Order of operations*	***Step 1***: *Equivalent fractions and simplifying* ***Step 2***: *Equivalent fractions on a number line* ***Step 3***: *Compare and order denominators* ***Step 4***: *Compare and order numerators* ***Step 5***: *Add and subtract simple fractions* ***Step 6***: *Add and subtract any two fractions* ***Step 7***: *Add mixed numbers* ***Step 8***: *Subtract mixed numbers* ***Step 9***: *Multi-step problems*	***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***: *Fractions of an amount* ***Step 7***: *Fractions of an amount – find the whole*	***Step 1***: *Metric measures* ***Step 2***: *Convert metric measures* ***Step 3***: *Calculate with metric measures* ***Step 4***: *Miles and kilometres* ***Step 5***: *Imperial measures*

Maths Long Term Overview – Year 6

	Step 15: Mental calculations and estimation **Step 16**: Reason from known facts			

Maths Long Term Overview – Year 6

Spring Term Coverage and National Curriculum Objectives (11 weeks 2 days)					
Week 1 – Week 2	**Week 3 – Week 4**	**Week 5 – Week 6**	**Week 7 – Week 8**	**Week 9 – Week 10**	**Week 11**
Ratio NCETM Resources: Solve problems involving ratio relationships Recall: Spring Block 1 Flashback 4 National Curriculum Objectives: 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 the calculation of	Algebra NCETM Resources: Solve problems with 2 unknowns Recall: Spring Block 2 Flashback 4 National Curriculum Objectives: Use simple formulae Generate and describe linear number sequences Express missing number problems algebraically	Decimals NCETM Resources: Powers of 10 Place value in numbers up to 10,000,000 Place value in decimals (Y5) Tenths and hundredths (Y5) Recall: Spring Block 3 Flashback 4 National Curriculum Objectives: Identify the value of each digit in numbers given to three decimal	Fractions, decimals and percentages NCETM Resources: Recall decimal equivalents for common factors (Y5) Recall: Spring Block 4 Flashback 4 National Curriculum Objectives: Solve problems involving the calculation of percentages [for example, of measures and such as 15% of 360] and the use of percentages for comparison.	Area, perimeter and volume NCETM Resources: Draw compose and decompose shapes Compare and calculate areas (Y5) Recall: Spring Block 5 Flashback 4 National Curriculum Resources: Recognise that shapes with the same areas can have different perimeters and vice versa.	Statistics NCETM Resources: Reading scales with 2, 4, 5 or 10 intervals Recall: Spring Block 6 Flashback 4 National Curriculum Objectives: Interpret and construct pie charts and line graphs and use these to solve problems Calculate and interpret the mean as an average.

Maths Long Term Overview – Year 6

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.*	*Find pairs of numbers that satisfy an equation with two unknowns* *Enumerate possibilities of combinations of two variables.*	*places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places.* *Multiply one-digit numbers with up to two decimal places by whole numbers.* *Use written division methods in cases where the answer has up to two decimal places* *Solve problems which require answers to be rounded to specified degrees of accuracy*	*Recall and use equivalences between simple fractions, decimals and percentages including in different contexts.*	*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 cm^3 , m^3 and extending to other units (mm^3 , km^3)*	

Maths Long Term Overview – Year 6

Spring Small Steps					
Ratio (2 weeks)	**Algebra (2 weeks)**	**Decimals (2 Weeks)**	**Fractions, decimals and percentages (2 weeks)**	**Area, perimeter and volume (2 weeks)**	**Statistics (2 weeks)**
Updated when new steps are released (November 2022)	*Updated when new steps are released (November 2022)*	*Updated when new steps are released (November 2022)*	*Updated when new steps are released (November 2022)*	*Updated when new steps are released (November 2022)*	*Updated when new steps are released (November 2022)*

Maths Long Term Overview – Year 6

Summer Term Coverage and National Curriculum Objectives (13 weeks 4 days)		
Week 1 – Week 3	**Week 4**	**Week 5 – Week 13**
Shape NCETM Resources: Draw compose and decompose shapes Compare, estimate, measure and draw angles (Y5) Recall: Summer Block 1 Flashback 4 National Curriculum Objectives: 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	Position and Direction NCETM Resources: Draw polygons specified by coordinates or by translation (Y4) Recall: Summer Block 2 Flashback 4 National Curriculum Objectives: 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.	Themed projects Link to access White Rose projects: https://whiterosemaths.com/resources?year=year-6-new

Maths Long Term Overview – Year 6

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.*		

Summer Small Steps		
Shape	*Position and direction*	*Themed Projects*
Updated when new steps are released (March 2023)	*Updated when new steps are released (March 2023)*	*Updated when new steps are released (March 2023)*