



Mathematics

Long Term Plan


Year 6

Updated June 2023

To be read in conjunction with the Calculation Policy




Year 6 Long Term Plan

	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	NUMBER Place Value		PIXL Assessments	NUMBER Addition, Subtraction Multiplication and Division <i>Including explicit teaching of mental methods</i>				PIXL Assessments	NUMBER Fractions A MWE Maths Week England		NUMBER Fractions B		MEASUREMENT Converting Units
Spring	Ratio		PIXL Assessments	Algebra		NUMBER Decimals		PIXL Assessments	NUMBER Fractions, Decimals and Percentages		MEASUREMENT Area, Perimeter and Volume		
Summer	GEOMETRY Shape		Statistics	GEOMETRY Position and Direction	SATS		Consolidation of RTP's Themed Projects Times Tables Focus  My Money Maths						



Year 6 Medium Term Plan

Autumn Term	Weeks 1-2	Week 3	Weeks 4-7	Week 8	Weeks 9-10 Maths Week England	Weeks 11-12	Week 13
Domain	Place Value		Addition, Subtraction, Multiplication and Division		Fractions A	Fractions B	Converting Units
NC Objective	<ul style="list-style-type: none"> ★ 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 	PiXL Assessments	<ul style="list-style-type: none"> ★ 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 ★ 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 ★ Perform mental calculations, including with mixed operations and large 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 ★ Use their knowledge of the order of operations to carry out calculations involving the four operations ★ Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy 	PiXL Assessments	 <p>Maths Week England will be celebrated during this block with a set focus</p> <ul style="list-style-type: none"> ★ 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 	<ul style="list-style-type: none"> ★ 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 	<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 ★ Convert between miles and kilometres
Smaller Steps (WRM)	<ul style="list-style-type: none"> 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 		<ul style="list-style-type: none"> 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 		<ul style="list-style-type: none"> 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 numbers Step 9: Multi-step problems 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Step 1: Metric measures Step 2: Convert metric measures Step 3: Calculate with metric measures Step 4: Miles and kilometres Step 5: Imperial measures

Ensure time conversions are included

★ 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 up to 3 decimal places

RTP's

- ★ **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)
 - **Step 4-Powers of 10**
- ★ **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.
 - **Step 1-Numbers to 1,000,000**
 - **Step 2-Numbers to 10,000,000**
 - **Step 3-Read and write numbers to 10,000,000**
- ★ **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.
 - **Step 6-Compare and order any integers**
 - **Step 7-Round any integers**
- ★ **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.
 - **Step 5-Number line to 10,000,000**

- ★ **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
 - **Step 8-Solve problems with multiplication**
 - **Step 10-Division using factors**
 - **Step 13-Solve problems with division**
 - **Step 14-Solve multi-step problems**
 - **Step 17-Reason from known facts**

- ★ **6F-1** Recognise when fractions can be simplified and use common factors to simplify fractions.
 - **Step 1-Equivalent fractions and simplifying**
 - **Step 2-Equivalent fractions on a number line**
- ★ **6F-2** Express fractions in a common denominator and use this to compare fractions that are similar in value.
 - **Step 3-Compare and order (denominator)**
- ★ **6F-3** Compare fractions with different denominators, including fractions greater than 1, using reasoning, and choose between reasoning and common denominator as a comparison strategy.
 - **Step 3-Compare and order (denominator)**
 - **Step 4-Compare and order (numerator)**

- ★ **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
 - **Step 2-Convert metric measures**




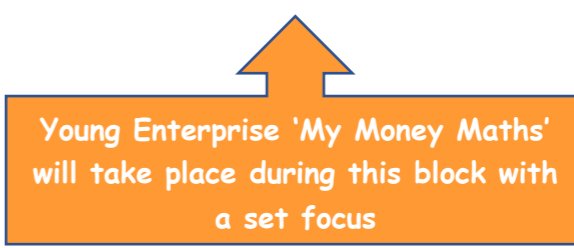

Year 6 Medium Term Plan

Spring Term	Weeks 1-2	Week 3	Weeks 4-5	Weeks 6-7	Week 8	Weeks 9-10	Weeks 11-12
Domain	Ratio		Algebra	Decimals		Fractions, Decimals and Percentages	Area, Perimeter and Volume
NC Objective	<ul style="list-style-type: none"> ★ 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 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. 	PiXL Assessments	<ul style="list-style-type: none"> ★ Use simple formulae ★ Generate and describe linear number sequences ★ Express missing number problems algebraically ★ Find pairs of numbers that satisfy an equation with two unknowns ★ Enumerate possibilities of combinations of two variables. 	<ul style="list-style-type: none"> ★ 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 ★ Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{3}{8}$] 	PiXL Assessments	<ul style="list-style-type: none"> ★ 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 	<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 ★ 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].
Smaller Steps (WRM)	<ul style="list-style-type: none"> 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 		<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 		<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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

<p>RTP's</p>	<p>★ 6AS/MD-3 Solve problems involving ratio relationships.</p> <ul style="list-style-type: none"> • Step 5-Scale drawing • Step 6-Use scale factors • Step 7-Similar shapes • Step 8-Ratio problems • Step 9-Proportion problems • Step 10-Recipes <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> <ul style="list-style-type: none"> • Step 1-Add or multiply? • Step 5-Scale drawing • Step 6-Use scale factors • Step 7-Similar shapes • Step 8-Ratio problems • Step 9-Proportion problems • Step 10-Recipes 		<p>★ 6AS/MD-4 Solve problems with 2 unknowns.</p> <ul style="list-style-type: none"> • Step 9-Find pairs of values • Step 10-Solve problems with two unknowns 	<p>★ 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.</p> <ul style="list-style-type: none"> • Step 5-Multiply by 10, 100 and 1,000 • Step 6-Divide by 10, 100 and 1,000 			<p>★ 6G-1 Draw, compose, and decompose shapes according to given properties, including dimensions, angles and area, and solve related problems.</p> <ul style="list-style-type: none"> • 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
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Year 6 Medium Term Plan

Summer Term	Weeks 1-2	Week 3	Week 4	Week 5	Weeks 6-12 My Money Maths
Domain	Shape	Statistics	Position and Direction		Consolidation of RTP's and Themed Projects
NC Objective	<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. 	<ul style="list-style-type: none"> ★ Interpret and construct pie charts and line graphs and use these to solve problems ★ Calculate and interpret the mean as an average 	<ul style="list-style-type: none"> ★ 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. 		<div style="text-align: center;">    </div> <p>This time is also used to consolidate:</p> <ul style="list-style-type: none"> ★ RTP's that need revisiting ★ Themed Projects ★ Times Tables
Smaller Steps (WRM)	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 	SATS	
RTP's	<ul style="list-style-type: none"> ★ 6G-1 Draw, compose, and decompose shapes according to given properties, including dimensions, angles and area, and solve related problems. <ul style="list-style-type: none"> • 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 10-Draw shapes accurately 				