The Lanes PRIMARY SCHOOL **Year 6 Maths Planning**

Maths Planning 2021-2022

Term	Stand	Unit	Number of lessons
TERM 1	Number – place value	Place value within 10,000,000	7
	Number – addition , subtraction , multiplication and division	Four operations	10
	Number – addition , subtraction , multiplication and division	Four operations	9
	Number – fractions	Fractions	11
	Number – fractions	Fractions	9
	Geometry	Position and Direction	4
TERM 2	Number – fractions (including decimals and percentages)	Decimals	9
	Number – fractions (including decimals and percentages)	Percentages	9
	Algebra	Algebra	11
	Measurement	Imperial and Metric	5
	Measurement	Perimeter , area and volume	11
	Ratio and Proportion	Ratio and proportion	9
TERM 3	Geometry	Properties of shape	12
	Number – number and place value	Problem Solving	14
	Statistics	Statistics	10

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Week beg	Strand	Unit	Lesson number	Key concepts	NC objective link	Planning days	Ready to progress
AUTUMN 1	Place Value	1	1,2,3,4	• Numbers to 10,000,000 • Number line to 10,000,000	Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit Solve number and practical problems that involve all of the above	4 days PM	Know that 10 tenths are equivalent to 1 one, and that 1 is 10 times the size of 0.1. Know that 100 hundredths are equivalent to 1 one, and that 1 is 100 times the size of 0.01. Know that 10 hundredths are equivalent to 1 tenth, and that 0.1 is 10 times the size of 0.01 Recognise the place value of each digit in numbers with up to 2 decimal places, and compose and decompose numbers with up to 2 decimal places using standard and nonstandard partitioning. Reason about the location of any number with up to 2 decimals places in the linear number system, including identifying the previous and next multiple of 1 and 0.1 and rounding to the nearest of each Divide 1 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in units of 1 with 2, 4, 5 and 10 equal part Convert between units of measure, including using common decimals and fractions.
	Place Value	1	5,6,7	• Comparing and ordering numbers to 10,000,000 • Rounding numbers • Negative numbers	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	3 days PM 1 day AFL	
	Number – addition, subtraction, multiplication and division	2	1,2,3,4,5	• Problem solving – using written methods of addition and subtraction • Multiplying numbers up to 4 digits by a 1-digit number	Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication Divide numbers up to 4 digits by a two-digit number using the formal written method of short division	5 days PM	Add and subtract up to three-digit numbers using columnar methods. Manipulate the additive relationship: Understand the inverse relationship between addition and subtraction, and how both relate to the part–part–whole structure. Understand and

					where appropriate, interpreting remainders according to the context		use the commutative property of addition, and understand the related property for subtraction. Calculate compliments to 100
	Number – addition, subtraction, multiplication and division	2	6,7,8,9,10	• Dividing numbers up to 4 digits by a 2-digit number	Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context Divide numbers up to 4 digits by a two-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	5 days PM	
	Number – addition, subtraction, multiplication and division	3	1,2,3,4	• Common factors • Common multiplies • Recognising prime numbers up to 100 • Squares and cubes	Identify common factors, common multiples and prime numbers Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) (Year 5)	4 days PM	Secure fluency in multiplication table facts, and corresponding division facts, through continued practice. Apply place value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth). Multiply and divide numbers by 10 and 100; understand this as equivalent to making a number 10 or 100 times the size, or 1 tenth or 1 hundredth times the size. Find factors and multiples of positive whole numbers, including common factors and common multiples, and express a given number as a product of 2 or 3 factors. Multiply any whole number with up to 4 digits by any one-digit number using a formal written method.
	Number – addition, subtraction, multiplication and division	3	4,6,7,8,9	• Order of operations • Brackets • Mental calculations • Reasoning from known facts	Use their knowledge of the order of operations to carry out calculations involving the four operations Perform mental calculations, including with mixed operations and large numbers Use their knowledge of the order of operations to carry out calculations involving the four operations	5 days PM	

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							Divide a number with up to 4 digits by a one-digit number using a formal written method, and interpret remainders appropriately for the context.
HALF TERM							
RESIDENTIAL WEEK							
AUTMN 2	Fractions	4	1,2,3	• Simplifying fractions • Fractions on a number line	Use common factors to simplify fractions; use common multiples to express fractions in the same denomination Compare and order fractions, including fractions > 1	1 day AFL 3 days PM	Add and subtract improper and mixed fractions with the same denominator, including bridging whole numbers. Convert mixed numbers to improper fractions and vice versa. Reason about the location of mixed numbers in the linear number system. Find non-unit fractions of quantities Find equivalent fractions and understand that they have the same value and the same position in the linear number system. Recall decimal fraction equivalents for , half , quarter, fifth, tenth, and for multiples of these proper fractions.
	Fractions	4	4,5,6,7	• Comparing and ordering fractions • Adding and subtracting fractions	Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) (Year 5) Use their knowledge of the order of operations to carry out calculations involving the four operations	4 days PM	
	Fractions	4	8,9,10,11	• Adding fractions • Subtracting fractions • Problem solving – adding and subtracting fractions • Problem solving – adding and subtracting fractions	Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions	4 days PM	
	Fractions	5	1,2,3,4,5	• Multiplying a fraction by a whole number • Multiplying a fraction by a fraction • Dividing a fraction by a whole number	Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams Multiply simple pairs of proper fractions, writing the answer in its simplest form	5 days PM	

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					Divide proper fractions by whole numbers Divide proper fractions by whole numbers		
	Fractions	5	6,7,8,9	• Dividing a fraction by a whole number • Four rules with fractions • Calculating fractions of amounts • Problem solving – fractions of amounts	Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions Use written division methods in cases where the answer has up to two decimal places Use written division methods in cases where the answer has up to two decimal places	4 days PM	
	Geometry	5	1,2,3,4	• Plotting coordinates in the first quadrant • Plotting coordinates • Plotting translations and reflections • Reasoning about shapes with coordinates	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	4 days PM	Draw polygons, specified by coordinates in the first quadrant, and translate within the first quadrant
CHRISTMAS HOLIDAYS							

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Week beg	Strand	Unit	Lesson number	Key concepts	NC objective link	Planning days	Ready to progress
SPRING 1	Decimals	7	1,2,3,	• Multiplying by 10, 100 and 1,000 • Dividing by multiples of 10, 100 and 1,000 • Decimals as fractions	Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places Associate a fraction with division and calculate decimal fraction equivalents [for example, 0375] for a simple fraction [for example, 3 8]	3	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).
	Decimals	7	4,5,6,7,8	• Fractions as decimals (2 lessons) • Multiplying decimals (2 lessons) • Dividing decimals	Associate a fraction with division and calculate decimal fraction equivalents [for example, 0375] for a simple fraction [for example, 3 8] Use written division methods in cases where the answer has up to two decimal places Multiply one-digit numbers with up to two decimal places by whole numbers Solve problems which require answers to be rounded to specified degrees of accuracy	5	

	Decimals Percentages	7	9 1,2,3,4	• Dividing Decimals continued • Percentages (4 lesson introduction)	Use written division methods in cases where the answer has up to two decimal places Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts 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 the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison	5	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).
	Percentages	8	5,6,7,8,9	• Finding missing values • Converting fractions to percentages • Equivalent fractions , decimals and	Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts Compare and order fractions, including fractions > 1	5	

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				• percentages (2 lessons) • Mixed problem solving	Solve problems which require answers to be rounded to specified degrees of accuracy		
	Algebra	9	1,2,3,4,5	• Finding a rule • Using a rule (2 lessons) • Formula • Equations	Express missing number problems algebraically Generate and describe linear number sequences	5 days	Solve problems with 2 unknowns.
	Algebra	9	6,7,8,9,10	• Solving equations (5 lessons)	Enumerate possibilities of combinations of two variables Find pairs of numbers that satisfy an equation with two unknowns	6 lessons (consider teaching elsewhere)	Algebra will need to be taught at some point in he summer term.
SPRING 2	Measurement	10	1,2,3,4, 5	• Metric measures • Converting metric measures • Problem solving – metric measures	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 three decimal places	5 days	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.

				• Miles and Km • Imperial measures	Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate Convert between miles and kilometres		
	Measure – perimeter , area and volume	11	1,2,3,5,6	• Shapes with same are • Area and perimeter (2 lessons) • Area of a triangle (2 lessons)	Recognise that shapes with the same areas can have different perimeters and vice versa Calculate the area of parallelograms and triangles	5 days – move area of a parallelogram	Draw, compose, and decompose shapes according to given properties, including dimensions, angles and area, and solve related problems.
	Measure – perimeter , area and volume	11	7, 4, ,8, 9	• Area of a triangle • Area of a parallelogram • Problem solving area • Problem solving perimeter	Recognise that shapes with the same areas can have different perimeters and vice versa Calculate the area of parallelograms and triangles	4 days	
	Measure – volume	11	10, 11	• Volume of a cuboid (2 lessons)	Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), and extending	5 days	Solve problems involving ratio relationships.

	Ratio and proportion	12	1,2,3	• Ratio (3 lesson intro)-	to other units [for example, mm3 and km3] Recognise when it is possible to use formulae for area and volume of shapes Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts		
	Ratio and proportion	12	4,5,6	• Ratio • Scale drawings • Scale factors • Similar shapes	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 Solve problems involving the relative sizes of two quantities where missing values can be	4 days , opportunity for maths art work	

					found by using integer multiplication and division facts		
	Ratio and proportion	12	7,8,9	• Similar shapes • Problem solving (2 lessons)	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	3 days (4 day week)	
EASTER HOLIDAYS							

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Week beg	Strand	Unit	Lesson number	Key concepts	NC objective link	Planning days	Ready to progress
SUMMER 1	Geometry – properties of shape	13	1,2,3,4	• Measuring with a protractor • Drawing shapes accurately • Angles in triangles (2 lessons)	Draw 2-D shapes using given dimensions and angles Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons	4 PM days 1 day mental maths/ AFL	
	Geometry – properties of shape	13	5,6,7,8,9	• Angles in triangles • Angles in polygons • Vertically opposite angles • Equal distance	Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius	5 PM days	
	Statistics	15	1,2,3,4	• The mean (3 lessons) • Introducing pie charts	Calculate and interpret the mean as an average Interpret and construct pie charts and line graphs and use these to solve problems	4 PM days 1 day afl/ mental maths	

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	Statistics	15	5,6,7,8	• Reading and interpreting pie charts • Fractions and pie charts (2 lessons) • Percentages and pie charts	Interpret and construct pie charts and line graphs and use these to solve problems Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison	4 days PM 1 day AFL/ mental maths	
	Statistics	15	9,10	• Interpreting line graphs • Constructing line graphs	Interpret and construct pie charts and line graphs and use these to solve problems	2 days PM	
HALF TERM							
SUMMER 2	Mean Pie charts	15	3, 5	The mean (lesson 3) Pie charts (lesson 2) – reading and interpretation	Interpret and construct pie charts and line graphs and use these to solve problems	2 days PM lessons	
	Statistics	15	6,7, 8	• Pie charts and fractions • Pie charts and fractions • Percentages and pie charts	Interpret and construct pie charts and line graphs and use these to solve problems Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison	3 days PM	

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	Statistics	15	9,10	• Interpreting line graphs – 2 lessons	Interpret and construct pie charts and line graphs and use these to solve problems Coming back to algebra? TBC in PPA in response to gaps and misconceptions	2 days PM	