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Year 5 Maths Long Term Plan

Autumn Term	
Week & Focus	Objectives
1 Number and Place Value Unit 1	• read, write, order and compare numbers to at least 1 000000 and determine the value of each digit • count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 • round any number up to 1 000 000 to the nearest 10, 100 and 1000
2 Number and Place Value Unit 5	• read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit • count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 • interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero • round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 • solve number problems and practical problems using place value up to 1 000 000
3 Number and Place Value Unit 9	• read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit • count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 • round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 • solve number problems and practical problems that involve all of the above • read Roman numerals to 1000 (M) and recognise years written in Roman numerals • count backwards in thousands including into negative numbers • reduce any 4-digit number by zero by subtracting the appropriate Th, H, T, U's
4 Addition and Subtraction Unit 1	• add and subtract numbers mentally with increasingly large numbers • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
5 Addition and Subtraction Unit 3	• add whole numbers with more than 4 digits, including using formal written methods (columnar addition) • add numbers mentally with increasingly large numbers • use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
6 Addition and Subtraction Unit 5	• subtract whole numbers with more than 4 digits, including using formal written methods (columnar subtraction) • subtract numbers mentally with increasingly large numbers • use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy • practise adding and subtracting decimals, including a mix of whole numbers and decimals * [Domain: Number – Fractions (including decimals and percentages)
7 Position and Direction Unit 2 (Geometry)	• identify, describe and represent the position of a shape following a translation, using the appropriate language, and know that the shape has not changed
8 Position and Direction Unit 11 (Geometry)	• identify, describe and represent the position of a shape following a reflection, using the appropriate language, and know that the shape has not changed • solve simple problems involving reflection of shapes on the coordinate grid • plot three vertices of a square and then locate then position of the fourth vertex.

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9 Multiplication and Division Unit 2	• multiply and divide numbers mentally drawing upon known facts • multiply and divide whole numbers by 10, 100 and 1000
10 Multiplication and Division Unit 4	• identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers • multiply numbers up to 4 digits by a one-digit number using a formal written method • multiply and divide numbers mentally drawing upon known facts • multiply whole numbers by 10, 100 and 1000 • recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}) • solve problems involving multiplication and division including using their knowledge of squares and cubes • solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign
11 Multiplication and Division Unit 4	• identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers • know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers • establish whether a number up to 100 is prime and recall prime numbers up to 19 • divide numbers mentally drawing upon known facts • divide whole numbers by 10, 100 and 1000 • solve problems involving multiplication and division including using their knowledge of factors and multiples
12 Measurement (Perimeter and Area) Unit 8	• measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres • calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes • assemble examples of perimeters in the classroom and outdoor environments • Use a square grid to estimate an irregular area using an appropriate strategy to deal with parts of a square, with help

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Spring Term	
Week & Focus	Objectives
1 Fractions Unit 2	• compare and order fractions whose denominators are all multiples of the same number • identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths eg: 8/10 represented visually • use doubling to create a set of equivalent fractions such as 1/3, 2/6, 3/9 • develop their understanding of fractions as numbers, measures and operators by finding fractions of numbers and quantities * • practise counting forwards and backwards in simple fractions • recognise and describe linear number sequences, including those involving fractions and find the term- to-term rule * [Domain: Number – Number and place value]
1 Multiplication and Division Unit 6	• divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign
3 Multiplication and Division Unit 8	• multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers • solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign
4 Properties of Shape Unit 1 (Geometry)	• identify 3-D shapes, including cubes and other cuboids, from 2-D representations • identify that six squares form the surface of a cube

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Properties of Shape
Unit 5
(Geometry)
	• know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles
	• draw given angles, and measure them in degrees (°)
	• identify:
	  • angles at a point and one whole turn (total 360 °)
	  • angles at a point on a straight line and ½ turn (180°) OR
	  • other multiples of 90 °

6 Properties of Shape Unit 9 (Geometry)	• use the properties of rectangles to deduce related facts and find missing lengths and angles • distinguish between regular and irregular polygons based on reasoning about equal sides and angles • use angle sum facts and other properties to make deductions about missing angles and relate these to missing number problems * • use the term diagonal and make conjectures about the angles formed between sides, and between diagonals and parallel sides, and other properties of quadrilaterals* • use conventional markings for parallel lines and right angles • add 'boxes' to my diagrams to indicate the right angles • deduce that, if one side of a rectangle is 10cm long, then the opposite side will also be 10 cm long
7 Decimals (Fractions) Unit 3	• read and write decimal numbers as fractions [for example, eg: 0.71 = 71/100)] • round decimals with two decimal places to the nearest whole number and to one decimal place • practise adding decimals, including complements of 1 (for example, 0·83 + 0·17 = 1) * • recognise and describe linear number sequences involving decimals, and find the term-to-term rule [Domain: Number – Number and place value]
8 Decimals (Fractions) Unit 7	• read and write decimal numbers as fractions • recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents • round decimals with two decimal places to the nearest whole number and to one decimal place • read, write, order and compare numbers with up to three decimal places • solve problems involving number up to three decimal places

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9 Addition and Subtraction Unit 7	• mentally add and subtract tenths, and one-digit whole numbers and tenths * • practise adding and subtracting decimals, including a mix of whole numbers and decimals, decimals with different numbers of decimal places, and complements of 1 [for example, 0·83 + 0·17 = 1]* * [Domain: Number – Fractions (including decimals and percentages)]
10 Addition and Subtraction Unit 9	• add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) • practise adding and subtracting decimals, including a mix of whole numbers and decimals * [Domain: Number – Fractions (including decimals and percentages) • add and subtract numbers mentally with increasingly large numbers • use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
11 Statistics Unit 7	• solve comparison, sum and difference problems using information presented in a line graph complete, read and interpret information in tables, including timetables
12 Statistics Unit 12	• solve comparison, sum and difference problems using information presented in a line graph • complete, read and interpret information in tables • can collect data during the course of a school day and draw a line graph to show it and answer questions about it • notice that the best representation for categorical data is different from that for numerical data

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Summer Term	
Week & Focus	Objectives
1 Fractions Unit 6	• compare and order fractions whose denominators are all multiples of the same number • add and subtract fractions with the same denominator (eg: 5/8 – 3/8 = 2/8 and denominators that are multiples of the same number (eg: 5/6 – ½ = 5/6-3/6 = 2/6) • recognise and use thousandths and relate them to tenths and hundredths and decimal equivalents
2 Fractions Unit 10	• recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number • multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams • connect equivalent fractions > 1 that simplify to integers with division and other fractions > 1 to division with remainders, using the number line and other models, and hence move from these to improper and mixed fractions
3 Multiplication and Division (Money) Unit 10	• multiply and divide numbers mentally drawing upon known facts • multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 • solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates use all four operations to solve problems involving measure [for example, money] using decimal notation, including scaling
4 Multiplication and Division (Money) Unit 12	• multiply numbers up to 4 digits by a two-digit number using a formal written method, including long multiplication for two-digit numbers • divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context • solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign • solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates • use all four operations to solve problems involving measure [for example money] using decimal notation, including scaling
5 As Above	As above
6 Measurement (Time) Unit 4	• solve problems involving converting between units of time • use all four operations to solve problems involving measure, including scaling
7 Decimals (Fractions) Unit 8	• recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred • write percentages as a fraction with denominator 100, and as a decimal • solve problems which require knowing percentage and decimal equivalents of and those fractions with a denominator of a multiple of 10 and 25 • make connections between percentages, fractions and decimals
8 Decimals (Fractions) Unit 11	• Recognise the per cent symbol (%) and understand that per cent relates to "number of parts per hundred", and write percentages as a fraction with denominator 100, and as a decimal • solve problems which require knowing percentage and decimal equivalents of and those fractions with a denominator of a multiple of 10 and 25 • solve problems involving multiplication and division, including scaling by simple fractions (half as much as) and problems involving simple rates (50% of £60) 2 4 5 5 5 with a denominator of a multiple of 10 or 25 make connections between percentages, fractions and decimals
9 Addition and Subtraction (Money) Unit 11	• add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) • add and subtract numbers mentally with increasingly large numbers • use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why • use all four operations to solve problems involving measure [for example, money] using decimal notation, including scaling
10 Measurements (mass) Unit 3	• convert between different units of metric measure (for example, gram and kilogram) • understand and use approximate equivalences between metric units and common imperial units such as pounds • use all four operations to solve problems involving measure [for

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	example, mass] using decimal notation, including scaling
11 Measurements (length) Unit 6	• convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre) • understand and use approximate equivalences between metric units and common imperial units such as inches • use all four operations to solve problems involving measure [for example, length] using decimal notation, including scaling
12 Measurements (volume and capacity) Unit 10	• convert between different units of metric measure (for example litre and millilitre) • understand and use approximate equivalences between metric units and common imperial units such as pints • estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water] • use all four operations to solve problems involving measure [for example volume] using decimal notation, including scaling