Year 5 Maths Long Term Plan

Year 5 Autumn Term

	Term 1		Term 2		
Unit Focus	**Place Value (3 wks)**	**Addition and subtraction (2wks)**	**Multiplication and division (6wks)**	**Measurement: Area and perimeter (2wks)**	**Assessment**
Priority (RTP's)	• 5NPV–1 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.		• 5MD–1 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. • 5MD–2 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. • 5MD–3 Multiply any whole number with up to 4 digits by any one-digit number using a formal written method. • 5MD–4 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. • 5NF–1 Secure fluency in multiplication table facts, and corresponding division facts, through continued practice. • 5NF–2 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth). • 5G–2 Compare areas and calculate the area of rectangles (including squares) using standard units.		
National Curriculum	**Place Value** • 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 that involve all of the above • read Roman numerals to 1000 (M) and recognise years written in Roman numerals. **Fractions** • recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents **Addition and Subtraction** • 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.		**Multiplication and division** • 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 (nonprime) numbers • establish whether a number up to 100 is prime and recall prime numbers up to 19 • 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 • multiply and divide numbers mentally drawing upon known facts • 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 • multiply and divide whole numbers and those involving decimals 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 factors and multiples, squares and cubes • 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. **Measurement: Area and perimeter** • 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 (cm2) and square metres (m2) and estimate the area of irregular shapes		

	Term 1	Term 2
Mental maths	• recognise the place value of each digit up to 1,0000 and to 2 decimal places. • what must be added to any four digit number to make the next multiple of 1000, e.g. 4087 + ? = 5000 • what must be added to a decimal with units and tenths to make the next whole number e.g. 7.2 + ? = 8 • count forwards/backwards in steps of powers of 10 for any number up to 1,000,000 e.g. 56,892, 56,992, 57, 092. • count forwards/backwards with positive and negative numbers including through 0. • read Roman Numerals to 1,000 (M)	•add or subtract a pair of two-digit numbers or three-digit multiples of 10, e.g. 38 + 86, 620 – 380, 350+ 360 • partition: double and adjust • squares to 12 × 12 • division facts corresponding to tables up to 12 × 12, and the related unit fractions, e.g. 7 × 9 = 63 so one-ninth of 63 is 7 and one seventh of 63 is 9 • factor pairs to 100 • apply rules of divisibility for 3, 9, 4 and 8 times table. • find the remainder after dividing a two-digit number by a single digit number, e.g. 27 ÷ 4 = 6 R 3 • use knowledge of doubles/halves and understanding of place value, e.g. when multiplying by 50 multiply by 100 and divide by 2 • recall all prime numbers to 19.
Times tables	• Recall multiples of 3,4 and 8 up to 12x in any order, including missing numbers and related division facts fluently. • Fluently count in 6's in order up to 12x6, using multiples of 3 to support.	• Recall multiples of 6 in any order, including missing numbers and related division facts with growing fluency. • Fluently count in 7's in order up to 12x7. • find factor pairs for numbers to 100, e.g. 30 has the factor pairs 1 × 30, 2 × 15, 3 × 10 and 5 × 6
Retrieval (Quick starter)	Geometry	Measurement: including money and time.
Covid Recovery	• Compares and classifies geometric shapes, including quadrilaterals and triangles, based on their properties and sizes • acute and obtuse angles and compare and order angles up to two right angles by size • Identifies lines of symmetry in 2-D shapes presented in different orientations • complete a simple symmetric figure with respect to a specific line of symmetry.	• find the effect of dividing a one- or two-digit number by 10 and 100, • identifying the value of the digits in the answer as ones, tenths and hundredths

Year 5 Spring Term

	Term 3	Term 4	
Unit Focus	**Fractions (4wks)**	**Fractions, decimals and percentages (7wks)**	**Assessment**
Priority	• 5F–1 Find non-unit fractions of quantities • 5F–2 Find equivalent fractions and understand that they have the same value and the same position in the linear number system.	• 5NPV–2 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. • 5NPV–3 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. • 5NPV–4 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 parts. • 5F–3 Recall decimal fraction equivalents for ½ , ¼ , 1/5, and 1/10 and for multiples of these proper fractions.	
National Curriculum	**Fractions** • 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 • recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, 5 2 + 5 4 = 5 6 = 1 5 1] • add and subtract fractions with the same denominator and denominators that are multiples of the same number • multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	**Fractions, Decimals and percentages** • read and write decimal numbers as fractions [for example, 0.71 = 100 71] • 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 • recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents • solve problems involving number up to three decimal places • 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 ½ , ¼ , 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25.	
Mental maths	• count up/down in thousandths. • count on or back in hundreds, tens, ones and tenths • subtract by counting up from the smaller to the larger number • add or subtract a multiple of 10 or 100 and adjust e.g. 4,678 – 2,998 = 4,678 – 3,000 + 2) • add or subtract a near multiple of 10 or 100 to any two-digit or three digit number, e.g. 235 + 198 • find the difference between near multiples of 100, e.g. 607 – 588, or of 1000, e.g. 6070 – 4087 • add and subtract decimal numbers which are near multiples of 1 or 10 including money e.g. £6.34 - £1.99.	• doubles and halves of decimals, e.g. half of 5.6, double 3.4 • add or subtract any pairs of decimal fractions each with units and tenths, e.g. 5.7 + 2.5, 6.3 – 4.8 • partition: add hundreds, tens or ones separately, then recombine • percentage equivalents of one half, one-quarter, three-quarters, tenths and hundredths • find fractions of whole numbers or quantities, e.g. 23 of 27, 45 of 70 kg • find 50%, 25% or 10% of whole numbers or quantities, e.g. 25% of 20 kg, 10% of £80 • read and write decimal numbers as fractions e.g. 0.71 = 71/100	
Times tables	• Recall multiples of 6 in any order, including missing numbers and related division facts fluently. • Recall multiples of 7 in any order, including missing numbers and related division facts with growing fluency.	• Recall multiples of 7 in any order, including missing numbers and related division facts fluently. • Fluently count in 9's in order up to 12x9. • Fluently count in 11's in order up to 12x11.	
Retrieval (Quick starter)	Addition, subtraction, multiplication and division	Place Value	
Covid Recovery	• Counts up and down in hundredths; recognises that hundredths arise when dividing an object by one hundred and dividing tenths by ten.	• Rounds decimals with one decimal place to the nearest whole number • compare numbers with the same number of decimal places up to two decimal places • recognise and write decimal equivalents of any number of tenths or hundredths • recognise and write decimal equivalents to ½, ¼ and ¾ • Solves simple measure and money problems involving fractions and decimals to two decimal places	

Year 5 Summer Term

	Term 5		Term 6		
Unit Focus	**Statistics (2wks)**	**Geometry: Properties of shape (4wks)**	**Geometry: Position and direction (2wks)**	**Measure – length, weight, mass converting units, volume, time. (4wks)**	**Assessment**
Priority	• 5G–1 Compare angles, estimate and measure angles in degrees (°) and draw angles of a given size.		• 5NPV–5 Convert between units of measure, including using common decimals and fractions.		
National Curriculum	**Statistics** • solve comparison, sum and difference problems using information presented in a line graph • complete, read and interpret information in tables, including timetables. **Geometry: Properties of shape** • identify 3-D shapes, including cubes and other cuboids, from 2-D representations • 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 2 1 a turn (total 180°) - other multiples of 90° • 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.		**Geometry: Position and direction** • identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed. **Measurement** • convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) • understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints • estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water] • solve problems involving converting between units of time • use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling. **Multiplication and division** • recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and **cubed(^{3})**		
Mental maths	• identify angles in a whole turn (360o) • identify angles on a straight line (180o) • calculate sums and differences of decimals, e.g. 6.5 + 2.7, 7.8 – 1.3 • use knowledge of place value and related calculations, e.g. 6.3 – 4.8 using 63 – 48		• convert between units of measure e.g. km to m, cm to m, l to ml, •Use equivalences between metric and imperial units e.g. inches, pounds, pints. •Recognise and understand the square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}) • partition: count on or back in minutes and hours, bridging through 60 (analogue and digital times		
Times tables	• Recall multiples of 9 in any order, including missing numbers and related division facts with growing fluency (using 10x and adjusting by 1 group to find 9x as a strategy) • Recall multiples of 11 in any order, including missing numbers and related division facts fluently. • Fluently count in 12's in order up to 12x12.		• Recall multiples of 9 in any order, including missing numbers and related division facts fluently. • Recall multiples of 12 in any order, including missing numbers and related division facts with growing fluency (using 10x and adjusting by adding 2 more groups).		
Retrieval (Quick starter)	Fractions		Statistics		
Covid Recovery	• interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. • solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.		• describe positions on a 2D grid as coordinates in the first quadrant • describe movements between positions as translations of a given unit to the left/right and up/down • plot specified points and draw sides to complete a given polygon • Convert between different units of measure (Only hour to minute) • estimate, compare and calculate different measures- Only money in pounds and pence		

Ongoing through the times table focused group teaching sessions:

- 5NF–1 Secure fluency in multiplication table facts, and corresponding division facts, through continued practice.

Mental maths:

- multiply or divide by 4 or 8 by repeated doubling or halving
- form an equivalent calculation, e.g. to multiply by 5, multiply by 10, then halve; to multiply by 20, double, then multiply by 10
- rules of divisibility