Year 5 Mathematics Yearly Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Week 1	Place value	Fractions	Place Value (focus on negative number)	Place Value, especially equals, emphasis on mental	Place Value (focus on Roman Numerals)	**Enterprise**
Week 2	Place value including decimals	Fractions	Mental and written calculation, Bar Method	Multiplication/ Division including squared (2) and cubed (3)	Calculations week	**Enterprise**
Week 3	Written addition	Decimals	Equations Bar Method		Algebra	Statistics Including timetables
Week 4	Written subtraction	Time	2D shape including angles	Multiplication, Division, problems /multistep.	Fractions	Time & calendar
Week 5	Multiplication (including **factors, multiples and prime)**	Time (duration) Operations	Co-ordinates (reflection, translation)	Fractions	Fractions linked to decimals and percentages	Operations (written and concise)
Week 6	Division	Measure (length and perimeter)	3D shapes		Measures (area and volume)	Operations (written and concise)
Week 7	Division/ Multiplication	Measure (conversions)			Area and volume of shapes	Review
Extra Info	Mental Strategies Throughout	PUMA AUTUMN TEST		PUMA SPRING TEST		PUMA SUMMER TEST

Autumn 1	Programmes of Study / Objectives / Targets
Week 1	**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 • round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000
Week 2	**Place value including decimals** • interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero • solve number problems and practical problems that involve all of the above
Week 3	**Written addition** • 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.
Week 4	**Written 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.
Week 5	**Multiplication (including factors, multiples and prime)** • 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 • 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
Week 6	**Division** • multiply and divide numbers mentally drawing upon known facts • 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
Week 7	**Division/ Multiplication** • multiply and divide numbers mentally drawing upon known facts • multiply and divide whole numbers and those involving decimals by 10, 100 and 1000

Autumn 2	Programmes of Study / Objectives / Targets
Week 1	**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, 2/5 + 4/5 = 6/5 = 1 1/5] • add and subtract fractions with the same denominator and denominators that are multiples of the same number
Week 2	**Fractions and Decimals** • multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams • read and write decimal numbers as fractions [for example, 0.71 = 100 71] • recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents
Week 3	**Decimals and Percent** • 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 • 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 $\frac{1}{2}$, $\frac{1}{4}$, 1/5, 2/5, 4/5, and those fractions with a denominator of a multiple of 10 or 25.
Week 4	**Time** • solve problems involving converting between units of time
Week 5	**Time (duration)** **Operations** • Pupils use all four operations in problems involving time and money, including conversions (for example, days to weeks, expressing the answer as weeks and days).
Week 6	**Measure (conversions)** • 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
Week 7	**Measure (length and perimeter)** • measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres

Spring 1	Programmes of Study / Objectives / Targets
Week 1	Place Value (focus on negative number) • interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero (REVISITED)
Week 2	Mental and written calculation, Bar Method
Week 3	Equations Bar Method • solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign
Week 4	2D shape including angles • 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 360o) ♣ angles at a point on a straight line and 2 1 a turn (total 180o) ♣ other multiples of 90o • 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.
Week 5	Co-ordinates (reflection, translation) • 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. • Pupils recognise and use reflection and translation in a variety of diagrams, including continuing to use a 2-D grid and coordinates in the first quadrant. Reflection should be in lines that are parallel to the axes
Week 6	3D shapes • identify 3-D shapes, including cubes and other cuboids, from 2-D representations

Spring 2	Programmes of Study / Objectives / Targets
Week 1	Place Value, especially equals, emphasis on mental • solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign (REVISITED T3, W3)
Week 2	Multiplication/ Division including squared (2) and cubed (3)
Week 3	• 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 multiplication and division, including scaling by simple fractions and problems involving simple rates.
Week 4	Multiplication, Division, problems /multistep. • multiply and divide numbers mentally drawing upon known facts • Applying the bar to multiplication and division problems.
Week 5	Fractions • 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, 52 + 54 = 56 = 1 51] • 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

Summer 1	Programmes of Study / Objectives / Targets
Week 1	Place Value (focus on Roman Numerals) • read Roman numerals to 1000 (M) and recognise years written in Roman numerals.
Week 2	Calculations week • multiply and divide numbers mentally drawing upon known facts (repeated)

Week 3	Algebra
	- Introduction to algebra. - Taught alongside missing number questions or - Missing measures questions such as these can be expressed algebraically, for example $4 + 2b = 20$ for a rectangle of sides 2 cm and b cm and perimeter of 20cm. - equivalent expressions (for example, $a + b = b + a$) (Ready for Y6)
Week 4	Fractions and decimals
	- read and write decimal numbers as fractions [for example, 0.71 = 71] 100 ▪ 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
Week 5	Fractions linked to decimals and percentages
	- 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 (Revisited) - 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. (REVISITED)
Week 6	Measures (area and volume)
	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
Week 7	Area and volume of shapes
	estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)] and capacity [for example, using water]

Summer 2	Programmes of Study / Objectives / Targets
Week 1	Enterprise Week
Week 2	Enterprise Week
Week 3	Statistics Including timetables - solve comparison, sum and difference problems using information presented in a line graph - complete, read and interpret information in tables, including timetables - Pupils connect their work on coordinates and scales to their interpretation of time graphs. They begin to decide which representations of data are most appropriate and why.

Week 4	Time & calendar • solve problems involving converting between units of time (REVISITED)
Week 5	Operations (written and concise) • 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
Week 6	Operations (written and concise) • 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
Week 7	Review • Focus on areas that children have found challenging this year.