Plan: Maths Year 5

School Name: Beal Vale Primary School

Autumn Term 1	
Strands	**Summary**
Number and place value (NPV); Written addition and subtraction (WAS)	Read, write, compare and order 5-digit numbers, understanding the place value and using < and >signs; add and subtract multiples of 10, 100 and 1000 to and from 5-digit numbers; use written addition to add two 4-digit numbers; work systematically to spot patterns
Mental addition and subtraction (MAS); Number and place value (NPV)	Add and subtract 2-digit numbers mentally; choose a strategy for solving mental additions or subtractions; solve word problems
Decimals, percentages and their equivalence to fractions (DPE); Mental multiplication and division (MMD)	Understand place value in decimal numbers; multiply and divide numbers with up to two decimal places by 10 and 100; multiply and divide by 0 and 100; add and subtract 0·1 and 0·01; multiply and divide by 4 by doubling or halving twice; use mental multiplication strategies to multiply by 20, 25 and 9
Measurement (MEA)	Revise converting 12-hour clock times to 24-hour clock times; find a time a given number of minutes or hours and minutes later; calculate time intervals using 24-hour clock format; measure lengths in mm and convert to cm; find perimeters in cm and convert cm to m
Written addition and subtraction (WAS); Mental addition and subtraction (MAS)	Solve subtraction using a written method for 3-digit − 3-digit numbers and for 4-digit numbers; use counting up (Frog) as a strategy to perform mental subtraction; find change from a multiple of ten pounds using counting up

Autumn Term 2	
Strands	**Summary**
Mental multiplication and division (MMD); Fractions, ratio and proportion (FRP)	Recognise which numbers are divisible by 2, 3, 4, 5, 6, 9 and 25 and identify multiples; find factors; compare and place fractions on a line; find equivalent fractions and reduce them to their simplest form
Mental multiplication and division (MMD); Written multiplication and division (WMD)	Use mental strategies to multiply and divide multiples of 10 and 100; use a written method to multiply 3-digit and 4-digit numbers by 1-digit numbers and estimate answers; divide 3-digit numbers by 1-digit numbers using a written method and express remainders as a fraction
Geometry: properties of shapes (GPS)	Use a protractor to measure and draw angles in degrees; recognise, use terms and classify angles as obtuse, acute and reflex; recognise that angles on a line total 180° and angles round a point total 360°; identify and name parts of a circle including diameter, radius and circumference; draw circles to a given radius using a pair of compasses; relate angles to turns, and recognise that a 360° angle is a complete turn; use angle facts to solve problems related to turn
Number and place value (NPV); Decimals, percentages and their equivalence to fractions (DPE); Fractions, ratio and proportion (FRP)	Place numbers to 100 000 and decimals up to two places on a line, round numbers to the nearest 10, 100 and 1000 and decimals up to two places to the nearest whole number; compare and order numbers with up to two decimal places; reduce fractions to their simplest form; know and recognise equivalent fractions and decimals to half, tenths and fifths
Mental addition and subtraction (MAS); Written addition and subtraction (WAS); Number and place value (NPV); Written multiplication and division (WMD); Mental multiplication and division (MMD)	Revise mental and written addition and subtraction strategies, choose to use a mental strategy or written method to solve addition and subtraction, choose to solve multiplication and division questions including 2- and 3-digit by 1-digit and 2-digit by 2-digit using a mental or a written method, Identify the operation being used on numbers, understand that addition and subtraction are inverse operations multiplication and division, use function machines

Spring Term 1		
Strands		**Summary**
	Number and place value (NPV); Decimals, percentages and their equivalence to fractions (DPE)	Read, write and order numbers with up to 6 digits and understand the place value of each digit; place 6-digit numbers on a number line and find numbers between; solve place-value additions and subtractions with 6-digit numbers; understand place value in decimal numbers as tenths and hundredths; multiply and divide by 10/100/1000 using a place-value grid; understand place value in decimal numbers to 2-decimal places; place decimal numbers on a line; round two-place decimal numbers to nearest tenth and whole number; say the number a tenth or a hundredth more
	Mental addition and subtraction (MAS); Written addition and subtraction (WAS)	Rehearse mental addition strategies for decimals and whole numbers; use counting on as a strategy to perform mental addition of 2-place decimals to the next whole number; solve missing number sentences; use mental strategies to solve word problems; use counting up as a strategy to perform written subtraction (Frog)
	Mental multiplication and division (MMD); Number and place value (NPV)	Use rules of divisibility to find if numbers are divisible by 2, 3, 4, 5, 9 and 10; identity prime numbers; revise finding factors of numbers; find squares and square roots of square numbers; make and test rules; use mental multiplication and division strategies; relate mental division strategies to multiples of ten of the divisor
	Geometry: properties of shapes (GPS); Measurement (MEA); Statistics (STA)	Know properties of equilateral, isosceles, scalene and right-angled triangles; find that angles in a triangle have a total of 180°; sort triangles according to their properties; use scales to weigh amounts to the nearest half interval; convert from grams to kilograms and vice versa, from millilitres to litres and vice versa, and from metres to kilometres and vice versa; read scales to the nearest half division; understand that we measure distance in kilometres and miles; use ready reckoning to give approximate values of miles in kilometres and vice versa; draw line conversion graphs
	Written addition and subtraction (WAS)	Use a written column method to add amounts of money in pounds and pence; add 2-place decimals using written column addition; subtract decimal numbers using counting up (Frog)

Spring Term 2		
Strands		**Summary**
	Written multiplication and division (WMD)	Use a written method (grid) to multiply pairs of 2-digit numbers; use short division to divide 3-digit numbers by 1-digit numbers, including those which leave a remainder
	Written multiplication and division (WMD); Fractions, ratio and proportion (FRP)	Find unit fractions and non-unit fractions of 3-digit numbers; use short multiplication to multiply 3-digit numbers by 1-digit numbers; begin to use short multiplication to multiply 4-digit numbers by 1-digit numbers
	Geometry: properties of shapes (GPS); Measurement (MEA)	Understand what a polygon is; draw polygons using dotted square and isometric paper; revise terms obtuse, acute and reflex angles, perpendicular and parallel sides; recognise quadrilaterals as polygons and identify their properties; classify quadrilaterals; draw regular polygons and explore their properties; revise metric units of weight, capacity and length; understand that we can measure in imperial units and relate these to their instances in daily life
	Fractions, ratio and proportion (FRP)	Place mixed numbers on lines; count up in fractions using equivalence; convert improper fractions to mixed numbers and vice versa; write improper fractions as mixed numbers and vice versa; multiply proper fractions by whole numbers
	Written addition and subtraction (WAS)	Solve subtraction of 4-digit numbers using written column subtraction (decomposition); add several numbers using written column addition; use column to solve problems

Summer Term 1

Strands	Summary
Mental addition and subtraction (MAS); Decimals, percentages and their equivalence to fractions (DPE)	Add mentally 2-place decimal numbers in the context of money using rounding; add several small amounts of money using mental methods; mentally subtract amounts of money including giving change; calculate the difference between two amounts using counting up; solve word problems, including 2-step problems, choosing an appropriate method
Fractions, ratio and proportion (FRP); Written multiplication and division (WMD)	Multiply fractions less than 1 by whole numbers, convert improper fractions to whole numbers; use short multiplication to multiply 3-digit and 4-digit numbers by 1-digit numbers; use long multiplication to multiply 2-digit and 3-digit numbers by teens numbers
Decimals, percentages and their equivalence to fractions (DPE); Number and place value (NPV)	Read, write and compare decimals to three decimal places, understanding that the third decimal place represents thousandths; multiply and divide numbers by 10, 100 and 1000 using 3-place decimal numbers in the calculations; place 2-place decimals on a number line and round them to the nearest tenth and whole number; read, write, order and compare 3-place decimal numbers; understand and use negative numbers in the context of temperature
Geometry: position and direction (GPD); Geometry: properties of shapes (GPS)	Read and mark co-ordinates in the first two quadrants; draw simple polygons using co-ordinates; translate simple polygons by adding to and subtracting from the co-ordinates; reflect simple shapes in the y axis or in a line, noting the effect on the co-ordinates; translate simple shapes and note what happens to the co-ordinates; draw regular and irregular 2D shapes using given dimensions and angles; use the properties of 2D shapes, including rectangles, to derive related facts; identify 3D shapes from 2D representations; create 3D shapes using 2D nets and draw 3D shapes
Written addition and subtraction (WAS)	Add 5-digit numbers using written column addition; subtract 5-digit numbers using written method (decomposition); check answers to subtractions using written column addition; solve subtractions of 4- and 5-digit numbers using written column subtraction or number line counting up

Summer Term 2

Strands	Summary
Mental multiplication and division (MMD); Fractions, ratio and proportion (FRP)	Identify factors and multiples, find factor pairs; revise equivalent fractions; compare and order fractions with related denominators; add fractions with same or related denominators, then convert answer into a mixed number; subtract fractions with same and related denominators, revise multiplying fractions by whole numbers
Written multiplication and division (WMD)	Use short division to divide 3-digit numbers by 1-digit numbers and 4-digit numbers by 1-digit numbers, including those which leave a remainder; express a remainder as a fraction; use long multiplication to multiply 3-digit and 4-digit numbers by teens numbers
Measurement (MEA)	Find the area and perimeter of squares and rectangles by calculation and pursue a line of enquiry; estimate and find the area of irregular shapes; calculate the perimeter and area of composite shapes; use the relations of area and perimeter to find unknown lengths; begin to understand the concept of volume; find the volume of a cube or cuboid by counting cubes; understand volume as measurement in three dimensions; relate volume to capacity; recognise and estimate volumes
Decimals, percentages and their equivalence to fractions (DPE); Fractions, ratio and proportion (FRP); Number and place value (NPV)	Understand what percentages are, relating them to hundredths; know key equivalences between percentages and fractions, finding percentages of amounts of money; find equivalent fractions, decimals and percentages; solve problems involving fraction and percentage equivalents; write dates using Roman numerals
Statistics (STA); Measurement (MEA); Written multiplication and division (WMD); Mental multiplication and division (MMD)	Find cubes of numbers to 10; draw and interpret line graphs showing change in temperature over time; begin to understand rate; use timetables using the 24-hour clock and use counting up to find time intervals of several hours and minutes; solve problems involving scaling by simple fractions; use factors to multiply; solve scaling problems involving measure