Year 5/6	**To be embedded throughout the year:**
	• Read roman numerals to 1000 and recognise years written in roman numerals
	• Count forwards and backwards in powers of 10 for any given number to 1 000 000 (For example: 10/100/1000/10 000/ 100 000)
	• Secure use of formal written methods for all four operations
	• Number facts
	• Understanding of decimals/ fractions/ % / ratio
	• Use of mental methods for developing mathematical fluency and reasoning, including mixed operations

• Read, write and compare numbers to 10 000 000 and understand the place value up to 3dp	• Interpret negative numbers in contexts, counting forwards and backwards in whole numbers through 0	• Convert between different units of metric measure (km/m, cm/m, cm/mm- g/kg, l/ml)
• Add and subtract whole numbers with more than 4 digits, using formal written methods	• Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 and to any required degree of accuracy	• Convert between metric and imperial units (inches/ pounds/ pints)
• Add and subtract numbers mentally	• Solve addition and subtraction multi-step problems in context deciding on correct operation and why	• Solve problems involving the conversion of units of time
• Multiply and divide numbers mentally, drawing upon known facts. Multiply and divide whole numbers and those involving decimals by 10,100,1000	Round decimals with 2 dp to nearest whole number/ 1dp	• Measure and calculate perimeter of composite rectilinear shapes in cm/m
• Multiply up to ThHTU x TU using a formal written method. Multiply and divide numbers by 10/100/1000 up to 3dp. Multiply one-digit numbers with up to two dp by whole numbers, using a formal written method. Recognise and use square and cube numbers and their notation	Use rounding to check and estimate answers to calculations and determine their accuracy	• Calculate and compare the area of squares and rectangles, including using standard units (cm2, m2) and estimate the area of irregular shapes
	• Solve problems involving all four operations	• Identify, describe and represent the position of a shape following a reflection or translation
	• Use of BODMAS	• Describe coordinates in all four quadrants
• Divide ThHTU by a one digit number using formal written	• Estimate to check answers to calculations to ensure levels of accuracy	• Draw and translate simple shapes on the coordinate plane and reflect

• method, with correct interpretation of remainders, as whole numbers, fractions or by rounding (up to 2dp) • Multistep problems, choosing correct operation and explain reasoning • Solve problems using all four operations and a combination of these, including understanding '=' (Balancing equations: 5 x 5 = 50/2) • Read/Write/ Order and compare numbers with up to 3dp • Solve problems involving decimal numbers up to 3 dp • Solve problems that involve use of ratio, proportion/ scaling.	• Distinguish between regular/ irregular shapes based on angles and lengths of sides Draw angles and measure in degrees Draw 2D shapes accurately with given dimensions and angles Recognise angles on lines/ opposites and find missing angles Understand multiples of 90o • Compare and classify geometric shapes based on their properties and sizes an find unknown angles in any triangles, quadrilaterals and regular polygons Use properties of rectangles to deduce related facts of length and missing angles • Identify and draw 3D shapes, know angles are measured in degrees. Estimate and compare obtuse/acute and reflex angles • Recognise, describe and build simple 3D shapes by making nets	them in the axes • Solve problems that involve use of ratio, proportion/ scaling • Estimate volume and capacity
• Recognise % and understand it relates to number of parts per hundred and write % as a fraction with denominator of 100 and as a decimal fraction • Solve problems involving % of amounts and % of comparisons • Compare and order fractions whose	• Interpret and construct pie charts and use them to solve problems • Illustrate and name parts of circles • Interpret and construct line graphs and use them to solve problems • Calculate mean as an average • Recognise % and understand it relates to number of parts per	• Multiply up to ThHTU by U/TU using a formal written method including long multiplication • Divide ThHTU by a one digit number using formal written method, with correct interpretation of remainders • Solve problems involving

denominators are multiples of each other and those greater than 1
Use common factors to simplify fractions; use common multiples to express fractions in the same denomination

- Visual representations of equivalent fractions (including 1/10 and 1/100)
- Recognise mixed numbers and improper fractions and convert from one to the other and write as a mathematical statement(2/5+4/5=6/5 = 1 1/5)
- Add and subtract fractions with the same denominator and multiples of the same number and then with different denominators with mixed numbers, using the concept of equivalent fractions ($\frac{1}{2}$ + 1/8 = 5/8)
- Multiply simple pairs of fractions, writing answers in simplest form moving to multiplying proper fractions and mixed numbers by whole numbers, supported by concrete resources/ diagrams
- Divide proper fractions by whole numbers
- Identify multiples and factors, finding all common factors of a number and common factors of 2 numbers
Establish numbers up to 100 that

- Solve problems which require knowing % and calculate decimal equivalence of $\frac{1}{2}$ $\frac{1}{4}$ 1/5 2/5 4/5 and those with a dominator of 10 or 25 moving to other numbers
Recall and use equivalences of simple fractions, decimals and percentages in different contexts
Read and write decimal numbers as fractions (0.71= 71/100)
Recognise and use 1/1000 and relate them to 1/10 and 1/100 and decimal equivalents
- Express missing number problems algebraically
Use simple formula expressed in words
Generate and describe linear number sequences (finding the nth term)
Find pairs of numbers that satisfy number sentences with 2 unknowns (a+b=b+a) and (2a+2b=x, what could a and b be?)

multiplication and division including scaling by simple fractions/ratios and percentages

- Complete, read and interpret information in tables and timetables
- Solve comparison, sum and difference problems using information presented in a line graph (Link to science)
- Solve problems involving missing parts of ratio and proportion
- Solve problems involving the scaling of shapes
- Solve problems involving unequal sharing or grouping (ratio/fractions)
- Express missing number problems algebraically
Use simple formula expressed in words
Generate and describe linear number sequences (finding the nth term)
Find pairs of numbers that satisfy number sentences with 2 unknowns (a+b=b+a) and (2a+2b=x, what could a and b be?)

	are prime and recall all prime numbers up to 19 Know and use vocabulary of prime numbers/ factors and composite (non-prime) Solve problems involving multiplication and division problems that require decomposing numbers in to their factors (Use of partitioning to support solving the answer)		