

YEAR 5	
AUTUMN TERM	
Number and place value	-Read and write numbers to at least 100 000.
	Determine the value of each digit in numbers to at least 100 000 and use to solve place-value additions and subtractions.
	Order and compare numbers to at least 100 000.
	Count forward or backwards in steps of powers of 10 for any number up to 100 000.
	Round any number up to 100 000 to the nearest 10, 100 and 1000.
Addition and Subtraction	Sustain a line of enquiry; make and test a hypothesis.
	Add whole numbers with 4 digits, including using the formal written method of columnar addition (answers > 10 000).
	Use place value and number facts to add and subtract 2-, 3- and 4-digit numbers.
	Use inverse operations to create new calculations or check answers.
	Subtract whole numbers with 4 digits, including using the formal written method of columnar subtraction.
	Begin to add and subtract numbers mentally with increasingly large numbers.
Multiplication and Division	Use mathematical reasoning to work out a function (single operation +/–).
	Use mental strategies to multiply and divide by 4, 9, 20 and 25.
	Solve problems involving multiplication and division using knowledge of factors, doubles and halves, and times-tables.
	Choose a mental or a written method to solve problems, including word problems, involving multiplication (including 2-/3-digit × 1-digit; 2-digit × 2-digit).
	Choose a mental or written method to solve problems, including word problems, involving division (including 2-/3-digit ÷ 1-digit), and spot and explain patterns and relationships.
	Recognise which numbers are divisible by 2, 3, 4, 5, 9 and 10.
	Use mathematical reasoning to work out a function; use the inverse operation to find answers.
Fractions, Decimals, Ratios and Percentages	Use multiplication facts and place value to multiply and divide multiples of 10 and 100, including answers with 1 and 2 decimal places.
	Add and subtract 0.1 to/from a number with 1 or 2 decimal places.
	Compare and order fractions with the same denominator.
	Identify, name and write equivalent fractions, including simplest forms, of a given fraction, represented visually, including tenths and hundredths.
Measures	Recognise and use tenths and hundredths and relate them to decimal equivalents.
	Read, write, order and compare numbers with up to 2 decimal places.
	Convert between different units of metric measure (length: mm/cm/ m/km).
Geometry	Understand the 24-hour clock, convert times, calculate time intervals and use timetables
	Begin to calculate the perimeter of rectilinear shapes in cm.
	Use a ruler to measure lines in centimetres and millimetres.
	Know angles are measured in degrees
	Estimate and compare acute, obtuse and reflex angles.
	Draw given angles, and measure them in degrees (°) using a protractor.
Statistics	Identify angles at a point on a straight line and half a turn (total 180°); use mathematical reasoning to explain findings.
	Identify 90° and other multiples of 90°.
Statistics	Complete, read and interpret information in timetables using 24-hour times.

Year 5

SPRING TERM

Number and place value	-Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000.	
	Read and write numbers to at least 1 000 000.	
	Order and compare numbers to at least 1 000 000.	
	Determine the value of each digit in numbers to at least 1 000 000 and use to solve place value additions and subtractions.	
	Order and compare 6-digit numbers and place on a number line.	
	Find square numbers and square roots; find a pattern; write and test a rule.	
Addition and Subtraction	Add whole numbers and 1-place decimals using appropriate mental strategies.	
	Add 1- and 2-place decimal numbers (including money) choosing and using an appropriate method (including columnar addition and mental methods).	
	Count up to solve 4-digit minus 4-digit subtractions from near multiples of 1000, where column subtraction is awkward; use column subtraction where appropriate.	
	Add and subtract numbers mentally with increasingly large numbers.	
	Solve addition 1- step and multi-step problems using mental addition.	
	Use counting on and bonds to 100 to add to any 2-place decimal to find the next whole number.	
	Subtract amounts of money and other 1- and 2-place decimal numbers in the context of measures.	
	Investigate patterns in addition using knowledge of bonds and a systematic approach.	
	Use columnar addition to add more than 2 numbers with up to 4 digits.	
	Identify patterns and make predictions.	
Multiplication and Division	-Identify multiples and factors, including finding all factor pairs of a number, and common factors of 2 numbers.	
	Multiply and divide numbers mentally drawing upon known facts.	
	Use a written method to multiply pairs of 2-digit numbers.	
	Multiply and divide numbers by 10 and 100, including decimal numbers and those leading to decimal answers.	
	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.	
	Recognise and use square numbers and their notation (2).	
	Choose an appropriate method to divide one number by another, including for larger numbers requiring a written procedure.	
	Choose an appropriate method to multiply numbers, including for those larger numbers requiring written procedure.	
	Use short division to divide 3-digit numbers by 1-digit numbers (including those that leave a remainder).	
	Use short multiplication to multiply 3-digit numbers by 1-digit numbers, rounding to estimate answers.	
Fractions, Decimals, Ratios and Percentages	-Add and subtract 0.1 or 0.01 to/from numbers with up to 2 decimal places	
	Round decimals with 2 decimal places to the nearest whole number and to 1 decimal place.	
	Solve problems involving numbers with up to 3 decimal places, including in the context of measures.	
	Find unit and non-unit fractions of 2 and 3 digit numbers.	

	Compare and order fractions, including mixed numbers, whose denominators are all multiples of the same number.	
	Place fractions on a number line and count in steps of a given fraction, using equivalence.	
	Recognise mixed numbers and improper fractions and convert from one form to the other; look for patterns and write rules.	
	Multiply proper fractions by whole numbers in a practical or real-life context.	
Measures	Convert between different units of metric measure (km / m; cm / m; cm / mm; g / kg; L / ml).	
	Add 2-digit numbers with 2-place decimals, including money, using column addition.	
	Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.	
Geometry	-Know that the angles in a triangle add up to 180° and devise and test rules to find a missing angle.	
	Describe the properties of triangles (including scalene, right-angled, isosceles and equilateral).	
	Use mathematical reasoning to identify properties of different polygons, including equal sides and angles and explain findings.	
	Identify and define a polygon; distinguish between regular and irregular polygons based on reasoning about equal sides and angles.	
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Statistics	Sort using a Venn diagram or a table.	
	Begin to read and interpret line graphs, including reading intermediate values.	

Year 5

SUMMER TERM

Number and place value	Interpret negative numbers in context; count forwards and backwards with positive and negative whole numbers, including through 0; solve problems in the context of temperature.	
	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.	
Addition and Subtraction	Use rounding to check answers to calculations and determine, in the context of a problem, level of accuracy; use addition to check subtraction.	
	Subtract 2-place decimal numbers (including money) using counting up or mental methods.	
	Solve addition and subtraction problems, including multi-step and word problems; decide which operations and methods to use and why.	
	Add whole numbers with more than 4 digits, including using formal written methods such as columnar addition.	
Multiplication and Division	Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.	
	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.	
	Divide numbers up to 4 digits by a 1-digit number using the formal written method of short division and interpret remainders appropriately for the context.	
	Use short multiplication to multiply 4-digit numbers by 1-digit numbers, rounding to estimate answers.	
	Multiply numbers up to 4 digits by a 1- or 2-digit number using a formal written method, including long multiplication for 2-digit numbers.	
	Identify factors of 2-digit numbers, pursue a line of enquiry and solve problems involving multiplication using their knowledge of factors.	
	Recognise and use cube numbers and their notation (3).	
	Solve problems (including word problems and problems about measure) involving multiplication and division, including scaling by simple fractions and problems involving simple rates.	
	Multiply numbers up to 4 digits by a 1- or 2-digit number using a formal written method, including long multiplication for 2-digit numbers.	
	Use multiplication to check division	
Fractions, Decimals, Ratios and Percentages	Add and subtract 0.1, 0.01 or 0.001 to/from numbers with up to three decimal places.	
	Write equivalent fractions and use equivalence to reduce fractions to their simplest form, including writing improper fractions as mixed numbers	
	Compare and order fractions whose denominators are all multiples of the same number.	
	Read, write, order and compare numbers with up to 3 decimal places.	
	Read and write decimal numbers as fractions.	
	Solve problems involving numbers with up to 3 decimal places.	
	Multiply proper fractions by whole numbers, supported by materials and diagrams, spot patterns and make generalisations.	
	Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.	

	Add and subtract fractions with the same denominator and denominators that are multiples of the same whole number, including answers > 1 .	
	Recognise the per cent symbol (%) and understand that it 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 $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25.	
Measures	Measure and calculate the perimeter of composite rectilinear shapes in cm and m.	
	Solve problems involving time, telling the time using 12- and 24-hour clocks, and converting between units of time.	
	Calculate and compare the area of rectangles (including squares), including using standard units, cm^2 and m^2 , and pursue a line of enquiry	
	Estimate the area of irregular shapes.	
	Estimate and begin to find volume and capacity.	
	Use all 4 operations to solve problems involving measure using decimal notation, including scaling.	
Geometry	Draw given angles and straight lines to given lengths to create a triangle.	
	Identify 3D shapes, including cubes and other cuboids, from 2D representations.	
	Recognise and use the properties of rectangles to deduce related facts and find missing lengths and angles.	
	Identify, describe and represent the position of a shape following a reflection or translation using the appropriate language; know that the shape has not changed; describe the relationship between the shapes' co-ordinates.	
	Read and mark coordinates in the first two quadrants and plot and join coordinates to create a polygon.	
Statistics	Draw line graphs; solve comparison, sum and difference problems using Information presented in a line graph.	
	Estimate intermediate values on line graphs.	