Mathematics Teaching sequence – Year 6

Year 6		
Autumn Term (7 weeks + 7 weeks = 14 weeks)	**Small steps**	**Key vocab**
Number and Place value (2 weeks) **6N2** Read, write, order and compare numbers to at least 10 000 000 **6N3** Determine the place value of each digit in numbers up to 10 000 000 **6N4** Round any whole number to a required degree of accuracy **6N5** Use negative numbers in context and calculate intervals across zero **6N6** Solve number and practical problems that involve **6N1-6N5** (ongoing through all units)	Numbers to 1,000,000 Numbers to 10,000,000 Read and write numbers to 10,000,000 Powers of 10 Partition numbers to 1,000,000 Number line to 10,000,000 Compare and order any integers Round any integer Negative numbers	Millions Thousands Hundreds Tens Ones Place holder Greater than Less than Equals to Ascending Descending Positive Negative
Four operations (4-5 weeks) **6C3** Use estimation to check answers to calculations, in the context of a problem, an appropriate degree of accuracy **6C4** Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why **6C6** Perform mental calculations, including with mixed operations and large numbers **6C8** Solve problems involving addition, subtraction, multiplication and division **6C9** Use their knowledge of the order of operations to carry out calculations involving the four operations	Add and subtract integers Common factors Common multiples Rules of divisibility Prime numbers to 100 Square and cube numbers Multiply up to a 4 digit number by a 2 digit number Solve problems with multiplication Short division Division using factors Long division Long division with remainders Solve problems with division Solve multi-step problems Order of operations Mental calculations Reason form known facts	Multi-step Addition: sum, totals, altogether, combine, plus, more Subtraction: finding the difference, minus, less than, left, take away Crossing the boundary Exchange Multiplication: product, repeated addition, groups/lots of Division: share, split equally, equal groups, dividend, divisor, quotient, division bracket Operations Known facts, factor pairs Common factor, common multiples Prime number, prime factor Composite number
Fractions (4 weeks) **6F2** Use common factors to simplify fractions; use common multiples to express fractions in the same denomination **6F3** Compare and order fractions, including fractions >1 **6F4** Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions **6F5a** Multiply simple pairs of proper fractions, writing the answer in its simplest form eg 1/4 x 1/2 = 1/8 **6F5b** Divide proper fractions by whole numbers eg 1/3 ÷ 2 = 1/6	Fractions Block A: Equivalent fractions and simplifying Equivalent fractions on a number line Compare and order (denominator) Compare and order (numerator) Add and subtract simple fractions Add and subtract any two fractions Add mixed numbers Subtract mixed numbers Multi-step problems Fractions Block B: Multiply fractions by integers Multiply fractions by fractions Divide a fraction by an integer Divide any fraction by an integer Mixed questions with fractions Fraction of an amount Fraction of an amount - find the whole	Simplify Numerator Denominator LCM (lowest common multiple) Factors to simplify/highest common factor Mixed numbers Proper fractions Improper fractions Equivalent fractions
Mock SATS week		

Percentages (1 week) **6F11** Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts	To find a percentage of an amount	Percent 100
Measure – Converting units (1 week) **6M5** Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation of up to three decimal places **6M6** Convert between miles and kilometres	Metric measure and converting metric measures Calculate with metric measures Miles and km Imperial measures	Imperial Metric Convert Divide Multiply Miles and km
Spring Term (6 weeks + 7 weeks = 13 weeks)	**Small steps**	**Key vocab**
FDP (3 weeks) **6F6** Associate a fraction with division to calculate decimal fraction equivalents (eg: 0.375) for a simple fraction [eg: 3/8) **6F9a** Identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places **6F9b** Multiply one-digit numbers with up to two decimal places by whole numbers **6F9c** Use written division methods in cases where the answer has up to 2-decimal places **6F10** Solve problems which require answers to be rounded to specified degrees of accuracy **6F11** Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts	Decimals block: Place value within 1 Place value – integers and decimals Round decimals Add and subtract decimals Multiply 10, 100 and 1000 Divide by 10-, 100 and 1000 Multiply decimals by integers Divide decimals by integers Multiply and divide decimals in context FDP block: Decimal and fraction equivalents Fractions as division Fractions to percentages Equivalent fractions, decimals and percentages Order fractions, decimals and percentages	Parts Whole Denominator Numerator Unit fraction Non-unit fraction Simplifying Equivalent Specified degrees of accuracy Mixed numbers Proper fractions Improper fractions Convert Greater than 1 Multiples Whole
Ratio (2 weeks) **6R1** Solve problems involving the relative sizes of 2 quantities where missing values can be found by using integer multiplication and division facts **6R2** Solve problems involving the calculation of percentages [for example, of measures and such as 15% of 360] and the use of percentages for comparison **6R3** Solve problems involving similar shapes where the scale factor is known or can be found **6R4** Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples	Use ratio language Introduce ratio symbol Ratio and fractions Scale drawing Scale factor Ratio problems Proportion problems Recipes	Ratio Integer Relative sizes Quantities Relationships Unequal sharing Equal sharing Percentages Compare Scale factor
Algebra (2 weeks) **6A1** Express missing number problems algebraically **6A2** Use simple formulae **6A3** Generate and describe linear number sequences	1-step function machines 2-step function machines Form expressions Substitution Formulae Form equations Solve 1-step equations	Algebra Letters Value Algebraic rules Substitute Expressions Formulae N = number Linear number sequences

6A4 Find pairs of numbers that satisfy an equation with two unknowns **6A5** Enumerate possibilities of combinations of two variables **Mock SATS week**	Solve 2-step equations Find pairs of values/solve problems with two unknowns	Equation Variables
Measure – Area, perimeter and volume (2 weeks) **6M7a** Recognise that shapes with the same areas can have different perimeters and vice versa **6M7b** Calculate the area of parallelograms and triangles **6M7c** Recognise when it is possible to use the formulae for the area of shapes **6M8a** Calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm3) and cubic metres (m3), and extending to other units [eg: mm3 and km3] **6M8b** Recognise when it is possible to use the formulae for the volume of shapes **6M9** Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate	Shapes – same area Area and perimeter Area of a triangle – counting squares Area of a right-angled triangle Area of any triangle Area of a parallelogram Volume – counting cubes Volume of a cuboid	Perimeter, 2D shape Parallel sides Sum of sides/lengths Standard measurement units: centimetres, metres. Composite, rectilinear shapes Square centimetres (cm^2) Square metres (m^2) Area of a rectangle = Length x Width Area of a triangle = Base x perpendicular height x ½ Parallelogram Volume Cubic centimetres Cubic metres Cuboid, cubes
Statistics (2 weeks) **6S1** Interpret and construct pie charts and line graphs and use these to solve problems **6S3** Calculate and interpret the mean as an average	Line graphs Dual bar charts Read and interpret pie charts Pie charts with percentages Draw pie charts The mean	Line graph Pie chart Data set Interpret Data representation Construct Comparison Mean Average
Geometry – angles & shape (1 week) **6G2a** Compare and classify geometric shapes based on their properties and sizes **6G2b** Describe simple 3–D shapes **6G3a** Draw 2–D shapes using given dimensions and angles **6G3b** Recognise and build simple 3D shapes, including making nets **6G4a** Find unknown angles in any triangles, quadrilaterals and regular polygons **6G4b** Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles **6G5** Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius	Measure and classify angles Calculate angles Vertically opposite angles Angles in a triangle Angles in quadrilaterals Angles in polygons Circles (circumference, radius, diameter) Nets of 3-D shapes	Illustrate Shape properties Angles Classify Equivalences Regular polygon Isosceles triangles Equal angles Equal sides Sum Interior angles Opposite angles Degrees Quadrilateral Unknown angles Angles at a point Straight line Vertically opposite Opposite angles equal Circle Radius Diameter Circumference

Summer Term (4 weeks + 7 weeks = 11 weeks)	Small steps	Key vocab
2 weeks of revision prior to SATS weeks SATS week (week 3) Monday 12th – Thursday 15th May		
Geometry – Position and Direction (2 weeks) **6P2** Draw and translate simple shapes on the co-ordinate plane, and reflect them in the axes **6P3** Describe positions on the full co-ordinate grid (all four quadrants)	Read and plot coordinates in the first quadrant Draw shapes on a 2-d grid Read and plot in all four quadrants Translate in all four quadrants Reflecting shapes in all four quadrants	Quadrants Co-ordinates Position Grid Plot data X axis Y axis Translate Reflect