	YEAR 6 medium term plan 2022-2023 Previous Yr 5 non-negotiable objectives in pink Objectives highlighted in yellow are 'Ready to Progress criteria'
Autumn 1	**Number –Place Value** Read and write numbers to at least 1 000 000 and determine the value of each digit Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers through zero •Understand the relationship between powers of 10 from 1 hundredth to 10 million, and use this to make a given number 10, 100, 1,000, 1 tenth, 1 hundredth or 1 thousandth times the size (multiply and divide by 10, 100 and 1,000). **6NPV–1** •read, write, order and compare numbers up to 10 000 000 and determine the value of each digit and compose and decompose numbers up to 10 million using standard and nonstandard partitioning **(6PV-2)** •Reason about the location of any number up to 10 million, and compose and decompose numbers up to 10 million, using standard and non-standard partitioning. **(6NPV-3)** •round any whole number to a required degree of accuracy **(6NPV-3)** •Divide powers of 10, from 1 hundredth, to 10 million, into 2, 4, 5 and 10 equal parts and read scales/ number lines with labelled intervals divided into 2, 4, 5 and 10 equal parts **(6NPV4)** •use negative numbers in context, and calculate intervals across zero **Number – Four operations** Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy Identify multiples and factors, including finding all factor pairs of a number and common factors of two numbers Divide numbers up to 4 digits by a one-digit number using a formal written method of short division and interpret remainders appropriately for the context •Perform mental calculations, including with mixed operations and large numbers •Understand that 2 numbers can be related additively or multiplicatively, and quantify additive and multiplicative relationships (multiplicative relationships restricted to multiplication by a whole number). **6AS/MD–1** •Use a given additive calculation to derive or complete a related calculation, using arithmetic properties, inverse relationships and place value understanding. **(6AS/MD-2)** •identify common factors •multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication •divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context •divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to context

Autumn 2	**Number -Fractions A and B** Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements >1 as mixed numbers (e.g. 2/5 + 4/5 =6/5 =11/5) Read and write decimal numbers as fractions (e.g. 0.71 = 71/100) Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams •identify common multiples and prime numbers •use their knowledge of the order of operations to carry out calculations involving the four operations •use common factors to simplify fractions **(6F-1)** •use common multiples to express fractions in the same denomination **(6F-2)** •Compare fractions with different denominators, including fractions greater than 1, using reasoning, and choose between reasoning and common denomination as a comparison strategy**(6F–3)** •add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions •Add and subtract mixed numbers, using the concept of equivalent fractions •multiply simple pairs of proper fractions, writing the answer in its simplest form •Multiply fractions by integers •divide proper fractions by whole numbers **Measurement-Converting units** •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 to up to three decimal places •convert between miles and kilometres
Spring 1	**Number – Ratio** •Solve problems involving ratio relationships. **6AS/MD–3** •solve problems involving similar shapes where the scale factor is known or can be found •solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. •solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts •Solve problems with 2 unknowns **6AS/MD–4** **Number – Algebra** Understand and use basic equivalences between metric and common imperial units and express them in approximate terms •use simple formulae •generate and describe linear number sequences •express missing number problems algebraically •find pairs of numbers that satisfy an equation with two unknowns •enumerate possibilities of combinations of two variables. **Number – Decimals** Read and write decimal numbers as fractions Round decimals with 2 decimal places to the nearest whole number and to 1 decimal place •identify the value of each digit in numbers given to three decimal places •multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places •multiply one-digit number with up to two decimal places by whole numbers •use written division methods in cases where the answer has up to two decimal places

Spring 2	**Number – Fractions, 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 hundred, and as a decimal fraction •associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction •recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. •solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts •solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison **Measurement – Perimeter, Area and Volume** Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres Calculate and compare the area of squares and rectangles •recognise that shapes with the same areas can have different perimeters and vice versa •recognise when it is possible to use formulae for area and volume of shapes •calculate the area of parallelograms and triangles •calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), and extending to other units. **Statistics** Complete, read and interpret information in tables, including timetables •interpret and construct pie charts and line graphs calculate interpret the mean as an average •use pie charts and line graphs to solve problems
Summer 1	**Geometry – Properties of shape** Use the properties of rectangles to deduce related facts and find missing lengths and angle •Draw, compose, and decompose shapes according to given properties, including dimensions, angles and area, and solve related problems. **6G–1** •compare and classify geometric shapes based on their properties and sizes •recognise, describe and build simple 3-D shapes, including making nets •find unknown angles in any triangles, quadrilaterals, and regular polygons •illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius •recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles **Geometry – Position and Direction** •describe positions on the full coordinate grid (all four quadrants) •draw and translate simple shapes on the coordinate plane, and reflect them in the axes. **Revision and Reinforcement of targeted areas**

Summer 2	**Revision and Reinforcement of targeted areas** **Investigations and preparation for KS3**
Continuous Objectives **The continuous objectives are woven into the teaching continually during the year.** **Children are given continual and regular opportunities to apply their knowledge to problem solving and reasoning.**	Solve number and practical problems that involve number and place value •solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why •solve problems involving addition, subtraction, multiplication and division •use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy •solve problems which require answers to be rounded to specified degrees of accuracy •solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts •solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison •solve problems involving similar shapes where the scale factor is known or can be found •solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. •solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate
Key Basic skills to be taught continuously through the year	Count forward and backwards in steps of powers of 10 for any given number up to 10 000 000 Count forwards and backwards with positive and negative whole number including zero and calculate intervals across zero Read, write, order and compare numbers up to 10 000 000 and determine the place value of each digit Partition numbers into place value columns Partition numbers in different ways Round any whole number to a required degree of accuracy Use rounding to support estimation and calculation Use knowledge of place value to derive new addition and subtraction facts Recognise and use square and cube 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 Double any number between 1 and 1000 and find all corresponding halves Add and subtract mentally with jottings with increasingly large numbers to aid fluency E.g. HthTthTHTU ± TthTHTU TthTHTU ± THTU HTU.t ± TU.t Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 giving answers up to 3 decimal places Perform mental calculations including with mixed operations Count up and down in tenths, hundredths and thousandths in decimals and fractions including bridging zero for example on a number line Use their knowledge of the order of operations to carry out calculations involving the four operations

	Use factors to simplify fractions **Compare and order decimals and fractions including fractions >1** **Calculate simple percentages of amounts** **Recognise mixed numbers and improper fractions and convert from one form to another and write mathematical statements > 1 as a mixed number** **Derive decimal complements to 1 working with decimals up to 3 decimal places** **Recall and derive equivalences between fractions, decimals and percentages** **Convert between money and measures including time**