

Cycle 1				
Autumn Themes	Cross curricular maths	Maths Units	Skills	Non-negotiables
New Beginnings (2 weeks)	Data collection across school Venn diagrams / Carroll diagrams	Place Value  Read, write, order and compare numbers to 10,000,000 and determine the value of each digit  Count forwards and backwards in steps of powers of 10 for any given no. to 1000000.	Add and subtract numbers mentally with increasingly large numbers.  Read and write decimal numbers as fractions e.g. $0.71 = \frac{71}{100}$  Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths	Yr 5 Recognise PV of any number up to 1,000,000.
Forces (2 weeks) Air resistance & Gravity	Measures - distance vs speed Mass Kg Weight Newtons  Conversions between units of metric measurements	Calculations week - (ability groups x 3) addition & subtraction Add and subtract whole numbers with more than 4 digits, including formal written methods (columns)  Solve addition and subtraction multi-step problems in context deciding which operation to use and why.  Solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3	Use rounding to check answers to calculations and determine levels of accuracy  Decimal counting and decimal number bonds to 1 in tenths and hundredths  Recognise and use thousandths and relate them to tenths and hundredths and decimal equivalents.  Round decimal numbers with two decimal places to the nearest whole number and to one decimal place	Yr 5 Count forwards/backwards in steps of powers of 10 for any given number up to 1,000,000.  Yr 5 Know conversions between units of metric measurements. mm/cm cm/m g/kg l/ml mm/m m/km  Yr 5 Add & subtract: Numbers with more than 4-digits using efficient written method (column) including decimals to 2dp  Yr 5 Identify all multiples & factors, including finding all

		dec. places where approp.  Tables and Division - language (factors & multiple)		factor pairs and prime numbers.
Food around the World (3 weeks)	<p>Weights and Measures Money and shopping Learn common metric conversions cm – m Mm – cm m- km G – kg Ml – l</p> <p>Negative numbers in context (warmer climates grow certain crops / compare climates)</p> <p>Ratio and Proportion Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts</p> <p>Time durations</p> <p>Interpret and construct pie charts and use these to solve problems</p>	<p>Calculations week - (ability groups x 3) Multiplication &amp; division</p> <p>Multiply numbers up to 4 digits by a one or two digit number using a formal written method.</p> <p>Divide numbers up to 4 digits by a one digit number using a formal written method of short division and interpret remainders in context.</p> <p>Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.</p>	<p>Tables Facts x6 x7 x8 and related division facts</p> <p>Identify multiples and factors, including finding all factor pairs of a number and common factors of two numbers</p> <p>Rounding &amp; Estimation Round any number up to 1000000 to the nearest 10, 100, 1000, 10000, 100000.</p> <p>Multiply and divide whole numbers and those involving decimals by 10, 100, 1000.</p> <p>Multiply numbers mentally drawing upon known facts.</p>	<p>Yr 5 Round decimals with 2dp to nearest whole number &amp; 1dp</p> <p><i>Yr 5 mentally calculate time durations over the hour</i></p> <p>Yr 5 Recognise mixed numbers &amp; fractions &amp; convert from one to another.</p> <p>Yr 5 Multiply proper fractions by whole numbers.</p>

World War 2 (4 weeks)	<p>Imperial and Metric measures –understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints</p> <p>Rationing Air raid shelters-confined space</p> <p>Coordinates-battleships etc Position and direction</p>	<p>Area and perimeter x 2 weeks Calculate and compare the area of rectangles (including squares) and including standard units; estimate the area of irregular shapes.</p> <p>Measure and calculate the perimeter of composite rectilinear shapes in cm and m.</p> <p>Capacity x 1 week</p> <p>Length x 1 week</p> <p>Solve number problems including negative numbers, rounding, writing and ordering numbers to 10,000,000</p>	<p>Closely related facts</p> <p>Recognise and use square numbers and cubed numbers with notation.</p> <p>Read, write order and compare numbers with up to three decimal places.</p> <p>Compare and order fractions whose denominators are all multiples of the same number.</p>	<p>Yr 5 Compare &amp; order numbers with 3 decimal places.</p> <p>Yr 5 Know fractions and decimals that make a total of 1</p> <p>Yr 5 Know decimal bonds in hundredths to 1 e.g. 0.34+.066</p>
Anti – bullying (1 week)	Team Board games - reinforce calculations	Solve problems involving numbers up to three decimal places.	Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements	
Light and Dark (2 weeks)	<p>Measuring in Shadows experiment AA Angles when light is reflected off a mirror</p> <p>Interpret and construct line graphs and use these to solve problems</p>	<p>Data handling – interpreting graphs</p> <p>Assessment week</p> <p>Solve problems involving converting between units of time</p>	<p>Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.</p> <p>Add and subtract fractions with the same denominator and denominators that are multiples of the same number</p>	

Scratch (2 weeks)	<p>Algebra Use simple formulae</p> <p>Data Handling Collect, analyse, evaluate and present data and information (6) using a range of different digital devices</p> <p>Inverse operations; BODMAS (order of calcs); use of brackets; Sequences and Patterns (Brackets for repeat sequences)</p>	<p>Revisit Calculation methods (compact method where possible) and use all four operations to solve problems involving measures (e.g. length, mass, volume, money) using decimal notation, including scaling.</p> <p>Formal written methods for short multiplication and division</p>	<p>Revise converting smaller units of measure to larger units of measures and vice versa. Km and m; cm and m; cm and mm; g and kg; l and ml.</p>	
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Spring Themes	Cross curricular maths	Maths Units	Skills	Non-negotiables
Going for Goals (1 week)	<p>Data handling</p> <p>Mental Tests – improving my performance – continuous throughout the term.</p>	<p>Place Value</p> <p>Word problems linked to fractions, decimals and percentages</p>	<p>Recognise the percent symbol (%) and understand that percent relates to a number of parts per hundred and write percentages as a fraction with denominator 100 and as a decimal</p>	
Exploring Earth and Beyond	Coordinates 4	Calculations – inverse	Solve problems that require	

(4 weeks)	<p>quadrants Describe positions on the full coordinate (all 4 quadrants)</p> <p>Position and direction &amp; compass points</p>	<p>operations / solving missing number calculations using factors, inverse, commutative law</p> <p>Division -written methods Line method and bus-stop method Different types of remainders</p> <p>Use written division methods in cases where the answer has up to two decimal places.</p>	<p>knowing percentage and decimal equivalents of <math>\frac{1}{2}</math> <math>\frac{1}{4}</math> <math>\frac{1}{5}</math> <math>\frac{2}{5}</math> <math>\frac{4}{5}</math> and those fractions with a denominator of a multiple of 10 or 25.</p>	
The Mayan Civilisation (2 weeks)	<p>Journeys - distances / costs Value for money / Percentages savings Different counting systems</p>	<p>Solve problems which require answers to be rounded to specified degrees of difficulty</p> <p>Draw and translate simple shapes on the co-ordinate plane and reflect them in the axes.</p>	<p>Multiply proper fractions and mixed numbers by whole numbers supported by materials and diagrams</p> <p>Mental Maths tests</p>	
Local Heritage project (4 weeks)	<p>Shape and space - map reading with coordinates /</p>	<p>Identify 3D shapes including cubes and cuboids from 2D images Know angles are measured in degrees – estimate and measure acute, obtuse, reflex. Draw given angles and measure them in degrees Identify angles at a point and one whole turn / on a straight line / multiples of 90</p>	<p>Mental maths tests</p>	

		degrees		
Forces (water resistance) (2 weeks)	<p>Measures</p> <p>Measuring throw lengths</p> <p>Finding averages of throw lengths</p> <p>Line graph: length of wing on spinner, against time taken to fall to the ground</p> <p>Speed and Distance problems</p> <p>Shape and Space</p>	<p>Data Handling</p> <p>Line graphs and pie charts revision</p> <p>Calculate and interpret the mean as an average</p> <p>Estimate volume e.g. using 1cm cubes to build cuboids and capacity (including water)</p>	Mental maths tests	

SUMMER THEMES	Cross curricular maths	Maths Units	Skills	Non-negotiables
Ancient Greece (3 weeks)	Planning a holiday-costs percentage off Ratio and proportion – investigate the golden ratio  3D shapes Interpreting graphs re: temperature, rainfall etc.  Measures linked to athletics	Interpret negative numbers in context counting forwards and backwards with positive and negative whole numbers including through zero  Solve number and practical problems that involve all aspects of number and place value	Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers  Establish whether a number up to 100 is a prime and recall prime numbers up to 19.	Yr 5 Count forwards/backwards in steps of powers of 10 for any given number up to 1,000,000.  Yr 5 Recognise PV of any number up to 1,000,000.
Magical Materials (3 weeks)	Ratio & Proportion Making drinks Solving real life problems  Measures Know key facts and be able to convert between them	Solve comparison, sum and difference problems using information presented in a line graph  Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes.  Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.		Yr 5 Know conversions between units of metric measurements. mm/cm cm/m g/kg l/ml mm/m m/km
Changes	Shape and space Translations, rotations, reflections.	Complete, read and interpret information in tables including timetables.  Identify, describe and represent the position of a shape following a reflection or translation using the appropriate language and know that the shape has not		

		been changed.		
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