Curriculum Plan

Mathematics

'Spirituality is the bitter-sweet yearning for beauty, truth, love and wonder beyond ourselves. It is a longing we pursue together and a treasure we glimpse in ourselves and one another and seek beyond us into eternity. It is life in all its fullness.'

Nebula Spirituality Statement

Hainford VC PRIMARY SCHOOL

Nebula
where stars are born

Hainford Maths Long Term Plan 2022 / 2023 (Final Nov)

Reception: (*ELG Number and Numerical Patterns + Development Matters)*

Year R	1st half-term	2nd half-term
Autumn	• Count verbally beyond 5/ beyond 10/ beyond 20 • Accurately count items to 5/ 10/ 20 with one-to-one correspondence • Correctly count sounds and actions, as well as objects • Show a secure understanding of the 'cardinal principle' • Use 'more than' and 'fewer than' to compare quantities • Can compare quantities up to 10 and can say whether one is greater than, less than or the same as the other • Understand 'one more than/ one less than' • Compare length • Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then...'	• Count verbally beyond 5/ beyond 10/ beyond 20 • Accurately count items to 5/ 10/ 20 with one-to-one correspondence • Correctly count sounds and actions, as well as objects • Show a secure understanding of the 'cardinal principle' • Use 'more than' and 'fewer than' to compare quantities • Can compare quantities up to 10 and can say whether one is greater than, less than or the same as the other • Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then...' • Explore the composition of numbers to five • Select, rotate and manipulate shapes to develop spatial reasoning skills • Compose and decompose shapes so that children recognise a shape can have other shapes *within* it, just as numbers can
	1st half-term	**2nd half-term**
Spring	• Count objects, actions and sounds • Link the number symbol (numeral) with its cardinal number value • Count beyond ten • Compare numbers • Understand the 'one more than/one less than' relationship between consecutive numbers • Explore the composition of numbers to ten • Subitise • Automatically recall number bonds for numbers 0–5 and some to 10 • Compare length and weight	• Link the number symbol (numeral) with its cardinal number value • Compare numbers • Count beyond ten • Understand the 'one more than/one less than' relationship between consecutive numbers • Subitise • Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then...' • Automatically recall number bonds for numbers 0–5 and some to 10 • Select, rotate and manipulate shapes to develop spatial reasoning skills • Explore and represent patterns within numbers up to 10, including <u>evens and odds, double facts and how quantities can be distributed equally.</u>
	1st half-term	**2nd half-term**
Summer	• Count objects, actions and sounds • Count beyond ten • Compare numbers • Understand the 'one more than/one less than' relationship between consecutive numbers	• Explore the composition of numbers to 10 • Count beyond ten • Automatically recall number bonds for numbers 0–5 and some to 10 • Understand the 'one more than/one less than' relationship between consecutive numbers

	• Explore the composition of numbers to 10 • Automatically recall number bonds for numbers 0–5 and some to 10 • Compare length • Compose and decompose shapes so that children recognise a shape can • have other shapes *within* it, just as numbers can • Select, rotate and manipulate shapes to develop spatial reasoning skills	• Compare length, weight and **capacity** • Explore and represent patterns within numbers up to 10, including evens and odds, <u>double facts and how quantities can be distributed equally.</u>

Year 1

Term	1st half-term	2nd half-term
Autumn	**Number, place value and rounding (<u>Focus on numbers up to 10</u>)** • count to and across 100, forwards and backwards, beginning with 0 or 1 • Read and write numbers 0-20 in words and numerals. • given a number, identify one more and one less • represent and use number bonds to 20 • identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least (Up to 10) **Addition and subtraction** • solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as such as 7 = □ –9 • read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs • solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ☐ –9 **Measurement- Taught by F. Nerney on Tues (Focus – length & height)** compare, describe and solve practical problems for: • lengths and heights [for example, long/short, longer/shorter, tall/short, • measure and begin to **record** the following: – lengths and heights	<u>continue</u>**: Addition and subtraction** • solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as such as 7 = □ –9 • *read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs* • solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ☐ –9 **Measurement- Taught by F. Nerney on Tues (time)** • sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] • recognise and use language relating to dates, including days of the week, weeks, months and years. **Geometry: properties of shapes** • recognise and name common 2-D and 3-D shapes, including: - 2-D shapes [for example, rectangles (including squares), circles and triangles] - 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]. **Number, place value and rounding (Focus on numbers up to 20)** • count to and across 100, forwards and backwards, beginning with 0 or 1 • Read and write numbers 0-20 in words and numerals. • given a number, identify one more and one less • represent and use number bonds to 20 • identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least (Up to 10) ***ASSESSMENTS: End of Autumn Term***

Spring	**Refresh place value to 20** **Addition and subtraction (up to 20)** • represent and use number bonds and related subtraction facts within 20 • read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs (within 20) • solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number-problems such as 7 = □–9. **Number and place value (numbers to 50)** • count to and across 100, forwards and backwards, beginning with 0 or 1 count, read and write numbers to 100 in numerals, • count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number • given a number, identify one more and one less • count, read and write numbers to 100 in numerals; count in multiples **of twos and fives** • identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least • Count in multiples of 2 and 5 **Measurement (Non-standard and standard measures)- Taught by F. Nerney (weight)** ● compare, describe and solve practical problems for: lengths and heights [for example, long/short, longer/shorter, tall/short, • mass/weight [for example, heavy/light, heavier than, lighter than]	**Measurement- taught by F. Nerney** ● measure and begin to **record** the following: – lengths and heights – mass/weight **Multiplication and division** ● solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher **Fractions** • recognise, find and name a half as one of two equal parts of an object, shape or quantity • recognise, find and name a quarter as one of four equal parts of an object, shape or quantity. **Measurement** • compare, describe and solve practical problems for:, double/half **Measurement (Non-standard and standard measures)- Taught by F. Nerney (weight, length and height)** ● compare, describe and solve practical problems for: lengths and heights [for example, long/short, longer/shorter, tall/short, ● sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] ● recognise and use language relating to dates, including days of the week, weeks, months and years. (seasonal) ***ASSESSMENTS: End of Spring Term***
Summer	**Geometry – position and direction** • describe position, direction and movement, including whole, half, quarter and three quarter turns. **Number and place value (numbers to 100)** • count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number	**Measurement (class teacher and F. Nerney)** • recognise and know the value of different denominations of coins and notes • tell the time to the hour and half past the hour and draw the hands on a clock face to show these times • recognise and use language relating to dates, including days of the week, weeks, months and years

	• count, read and write numbers to 100 in numerals, count in multiples of twos, fives and **tens** • given a number, identify one more and one less • read and write numbers from 1 to 20 in numerals and words **Measurement- taught by Fiona Nerney** measure and begin to record the following: • lengths and heights • recognise and know the value of different denominations of coins and notes	**compare, describe and solve practical problems for:** • capacity and volume [for example, full/empty, more than, less than, half, half full, quarter] • time [for example, quicker, slower, earlier, later] ***ASSESSMENTS: End of Summer Term*** **Consolidation and problem solving**

Year 2

Term	1st half-term	2nd half-term
Autumn	**Number, place value and rounding** ● count in steps of 2 and 5 from 0 and in tens from any number, forward and backward ● recognise the place value of each digit in a two-digit number (tens, ones) ● identify, represent and estimate numbers using different representations, including the number line ● compare and order numbers from 0 up to 100; use <, > and = signs ● read and write numbers to at least 100 in numerals ● use place value and number facts to solve problems **Addition and subtraction** ● solve problems with addition and subtraction: – using concrete objects and pictorial representations, including those involving numbers, quantities and measures – applying their increasing knowledge of mental methods ● recall and use addition and subtraction facts to 20 fluently ● add and subtract numbers using concrete objects, pictorial representations, and mentally, including: – a two-digit number and ones – a two-digit number and tens • adding three one-digit numbers • two 2-digit numbers	**Number and place value** ● count in steps of 2 and 5 from 0 and in tens from any number, forward and backward ● recognise the place value of each digit in a two-digit number (tens, ones) ● identify, represent and estimate numbers using different representations, including the number line ● read and write numbers to at least 100 in numerals ● use place value and number facts to solve problems **Addition and subtraction** ● solve problems with addition and subtraction: – using concrete objects and pictorial representations, including those involving numbers, quantities and measures – applying their increasing knowledge of mental methods ● recall and use addition and subtraction facts to 20 fluently, ● add and subtract numbers using concrete objects, pictorial representations, and mentally, including: – a two-digit number and ones – a two-digit number and tens – adding three one-digit numbers _ Two 2-digit numbers ● show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot

	Measurement ● compare and order **lengths,** mass, volume / capacity and record the results using >, < and = -	**Multiplication and division** ● recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers ● calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs **Measurement** ● recognise and use symbols for pounds (£) and pence (p); ● combine amounts to make a particular value solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change
Spring	**Addition and subtraction** ● *solve problems with addition and subtraction:* ● recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems **Multiplication and division** ● recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, *including recognising odd and even numbers* ● calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs ● show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot ● solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts **Statistics** ● interpret and construct simple pictograms, tally charts, block diagrams and simple tables ● ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. ● ask and answer questions about totalling and comparing categorical data	**(Number and calculation practice through early work and lesson starters** **Measurement** ● *compare and order lengths,* ***mass, volume / capacity*** and record the results using >, < and = **Geometry: properties of shape** ● identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line ● identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces ● identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid] ● compare and sort common 2-D and 3-D shapes and everyday objects **Fractions** ● recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity ● write simple fractions for example $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.

	● ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity ●	
Summer	**Fractions** ● recognise, find, name and write fractions ⅓, ¼, ²⁄₄ and ¾ of a length, shape, set of objects or quantity ● write simple fractions for example ½ of 6 = 3 and recognise the equivalence of ²⁄₄ and ½. **Geometry: position and direction** ● order and arrange combinations of mathematical objects in patterns and sequences ● use mathematical vocabulary to describe position, direction and movement. ● calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs ● show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot ● solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts **Measurement (recap)** ● *compare and order lengths, mass, volume / capacity* and record the results using >, < and = ● compare and sequence intervals of time ● solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change ● choose and use appropriate standard units to estimate and measure length / height in any direction (m / cm); mass (kg / g); temperature (°C); capacity (litres / ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels **KS1 SATs** **Application / problem solving Revisions /Addressing specific Weaknesses**	Application / problem solving Revisions /Addressing specific weaknesses

Year 3

Term	1st half-term	2nd half-term
Autumn	**Number and place value** ● count from 0 in multiples of 100; find 10 or 100 more or less than a given number ● recognise the place value of each digit in a three-digit number (hundreds, tens, ones) ● compare and order numbers up to 1000 ● identify, represent and estimate numbers using different representations ● read and write numbers up to 1000 in numerals and in words ● solve number problems and practical problems involving these ideas **Addition and subtraction** ● add and subtract numbers mentally, including: – a three-digit number and ones – a three-digit number and tens – a three-digit number and hundreds ● add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction ● estimate the answer to a calculation and use inverse operations to check answers ● solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction **Measurement** ● measure, compare, add and subtract: lengths (m / cm / mm);	**Number and place value** ● *count from 0 in multiples of 4, 8 and 100* ● recognise the place value of each digit in a three-digit number (hundreds, tens, ones) ● solve number problems and practical problems involving these ideas **Addition and subtraction** ● add and subtract numbers mentally, including: – a three-digit number and ones – a three-digit number and tens – a three-digit number and hundreds ● add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction ● estimate the answer to a calculation and use inverse operations to check answers ● solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction **Measurement** ● add and subtract amounts of money to give change, using both £ and p in practical contexts **Multiplication and division** ● recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables ● write and calculate mathematical statements for multiplication and division using the multiplication tables that they know ● solve problems, including missing number problems,
Spring	**Addition and subtraction** ● estimate the answer to a calculation and use inverse operations to check answers ● solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction	**Measurement** ● mass (kg / g); volume / capacity (l / ml) **Geometry: properties of shapes** ● draw 2-D shapes,

	Multiplication and division ● recall and use multiplication and division facts for the 3,4 and 8 multiplication tables ● write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods ● solve problems, including missing number problems, **Statistics** ● interpret and present data using bar charts, pictograms and tables ● solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables.	● identify horizontal and vertical lines and pairs of perpendicular and parallel lines ● Measure the perimeter of simple 2D shapes. **Fractions** ● recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators ● compare and order unit fractions and fractions with the same denominator ● recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators ● solve problems that involve all of the above. **Geometry: properties of shape (3D focus)** ● recognise that angles are a property of shape or a description of a turn ● identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle ● identify horizontal and vertical lines and pairs of perpendicular and parallel lines ● measure the perimeter of simple 2-D shapes.
Summer	**Fractions** ● count up and down in tenths, recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10 ● add and subtract fractions with the same denominator within one whole [for example, $^5/_7 + {}^1/_7 = {}^6/_7$] **Geometry: position and direction** ● recognise that angles are a property of shape ● identify right angles, **Multiplication and division** ● recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables ● write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods	**Number and place value** ● count from 0 in multiples of 4, 8, 50 and 100 **Multiplication and division** ● recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables **Application / problem solving Revisions /Addressing specific Weaknesses**

	● solve problems, including missing number problems, involving multiplication and division; solve positive integer scaling problems and correspondence problems in which n objects are connected to m objects. ● solve problems that involve all of the above. **Measurement** ● tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks ● estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m. / p.m., morning, afternoon, noon and midnight ● know the number of seconds in a minute and the number of days in each month, year and leap year ● compare durations of events, [for example, to calculate the time taken by particular events or tasks] ● add and subtract amounts of money to give change, using both £ and p in practical contexts **Measurement** measure, compare, add and subtract: lengths (m / cm / mm); mass (kg / g); **t** add and subtract amounts of money to give change, using both £ and p in practical contexts	

Year 4

Term	1st half-term	2nd half-term
Autumn	**Multiplication and divisions** ● recall multiplication and division facts for multiplication tables up to 12 × 12 **Number and place value** ● count in multiples of 6, 7, 9, 25 and 1000 ● find 1000 more or less than a given number find 1000 more or less than a given number ● recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) ● order and compare numbers beyond 1000 ● identify, represent and estimate numbers using different representations ● round any number to the nearest 10, 100 or 1000 ● solve number and practical problems that involve all of the above and with increasingly large positive numbers. ● count backwards through zero to include negative numbers ● read Roman numerals to 100 (I to C) and know that, over time, the numeral system changed to include the concept of zero and place value. **Addition and subtraction** ● add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate ● estimate and use inverse operations to check answers to a calculation (needs discrete teaching) ● solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why	**Multiplication and division** ● recall multiplication and division facts for multiplication tables up to 12 × 12 ● use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers ● multiply two-digit and three-digit numbers by a one-digit number using formal written layout ● recognise and use factor pairs and commutativity in mental calculations ● solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling and harder correspondence problems such as n objects are connected to m objects **Measurement** ● measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres ● find the area of rectilinear shapes by counting squares ● read, write and convert time between analogue and digital 12- and 24-hour clocks ● solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days. **Fractions (start/review – part 1)**
Spring	**Multiplication and divisions** ● recall multiplication and division facts for multiplication tables up to 12 × 12 **Fractions (part 2)** ● recognise and show, using diagrams, families of common equivalent fractions	**All 5s and 4s will be together** **Fractions / Decimals review as required** **Measures (calculate)** ● estimate, compare and calculate different measures, **Measurement (time)**

	● count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten ● add and subtract fractions with the same denominator ● solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number **Decimals** ● count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. ● recognise and write decimal equivalents of any number of tenths or hundredths ● *recognise and write decimal equivalents to ¼, ½, ¾.* ● find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths ● round decimals with one decimal place to the nearest whole number compare numbers with the same number of decimal places up to two decimal places ● solve simple measure and money problems involving fractions and decimals to two decimal places **Measurement (Convert)** ● estimate, compare and calculate different measures, **including money in pounds and pence** ● convert between different units of measure [kilometer] to meter ● estimate, compare and calculate different measures, (length and mass) convert between different units of measure (length and mass) ● convert between different units of measure **Statistics** ● solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables	● convert between different units of measure [hour to minute] ● read, write and convert time between analogue and digital 12- and 24-hour clocks ● solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days. **Statistics** ● interpret and present discrete and **continuous data** using appropriate graphical methods, including bar charts and **time graphs**.
Term	**1st half-term**	**2nd half-term**

Summer	**Multiplication and divisions (fast review)** ● recall multiplication and division facts for multiplication tables up to 12 × 12 **Geometry – properties of shape** ● compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes ● identify acute and obtuse angles *compare and order angles up to two right angles by size* ● complete a simple symmetric figure with respect to a specific line of symmetry **Geometry – position and direction** ● describe positions on a 2-D grid as coordinates in the first quadrant ● describe movements between positions as **translations** of a given unit to the left / right and up / down ● plot specified points and draw sides to complete a given polygon.	**Complete Summer 1st then Consolidate (red Los / Gaps identified etc)**

Year 5

Term	1st half-term	2nd half-term
Autumn	**Number and place value** • read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit • count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 • 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 • interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers including through zero • read Roman numerals to 1000 (M) and recognise years written in Roman numerals **Addition and subtraction** • add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) • add and subtract numbers mentally with increasingly large numbers • use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why **(Mrs Grigg's yr5s to move on to multiplication and division)**	**Multiplication and division** • identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers • multiply numbers up to 4 digits by a one-digit and 2 digit numbers using a formal written method • multiply and divide numbers mentally drawing upon known facts • 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 cube numbers, and the notation for squared (^{2}) and cubed (^{3}) • divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context • solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes integer scaling problems and harder correspondence problems such as n objects are connected to m objects. • solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates. Fractions part 1 (Yr5s with the yr6s will cover most objectives. Mr Cross' focus in Spring) **Measurement** • measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres • calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate • estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)] and capacity [for example, using water] **Consolidation & Assessments**

Spring	**Fractions part 2** • compare and order fractions whose denominators are all multiples of the same number • identify, name and write equivalent fractions of a given fraction, represented visually including tenths and hundredths. • recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements >1 as a mixed number [e.g. $^2/_5 + ^4/_5 = ^6/_5 = 1^1/_5$] • add and subtract fractions with the same denominator and denominators that are multiples of the same number • multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams • recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents **Decimals and Percentages** • multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 • read, write, order and compare numbers with up to three decimal places • read and write decimal numbers as fractions [for example, 0.71 = $^{71}/_{100}$] • recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents • round decimals with two decimal places to the nearest whole number and to one decimal place • 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 100, and as a decimal • solve problems which require knowing percentage and decimal equivalents of ½ , ¼, ⅕, ⅖, ⅘ and those with a denominator of a multiple of 10 or 25 (Brief intro for Mr Cross' group) **Measurement** • use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation including scaling (focus on addition and subtraction • convert between different units of metric measure ; litre and millilitre	With the yr4s (Mr Cross) Multiplication and division methods review (4s and 5s) – esp x double digit number ahead of calculating with measures - Yr5 review of prime, factors, cube numbers etc **Fractions / Decimals review as needed (% possibly new to Mr Cross' group TBC)** • 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 100, and as a decimal • solve problems which require knowing percentage and decimal equivalents of ½, ¼, ⅕, ⅖, ⅘ and those with a denominator of a multiple of 10 or 25 **Measurement** • solve problems involving converting between units of time • use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation including scaling (focus on multi and division) **Statistics** • complete, read and interpret information in tables, including **timetables.** • solve comparison, sum and difference problems using information presented in a line graph (time)

	• understand and use approximate equivalences between metric units and common imperial units **Statistics** • complete, read and interpret information in tables	
Summer	**Geometry** • distinguish between regular and irregular polygons based on reasoning about equal sides and angles • identify: angles at a point and one whole turn (total 360°), angles at a point on a straight line and ½ a turn (total 180°), other multiples of 90°. • use the properties of rectangles to deduce related facts and find missing lengths and angles • know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles • draw given angles, and measure them in degrees (°) • identify 3-D shapes, including cubes and other cuboids, from 2-D representations **Geometry: (Position and direction)** • 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 changed.	**Complete Summer 1st then Consolidate (red Los / Gaps identified etc)**

Year 6

Term	1st half-term	2nd half-term
Autumn	**Number and place value** • read, write, order and compare numbers up to 10 000 000 and determine the value of each digit • round any whole number to a required degree of accuracy • use negative numbers in context, and calculate intervals across zero • solve number and practical problems that involve all of the above **Addition and Subtraction** • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why • perform mental calculations, including with mixed operations and large numbers **Multiplication and Division** • 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 number using the formal written method of short division where appropriate, interpreting remainders according to the context • 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 • use their knowledge of the order of operations to carry out calculations involving the four operations • perform mental calculations, including with mixed operations and large numbers • identify common factors, common multiples and prime numbers • 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.	**Fractions** • use common factors to simplify fractions; use common multiples to express fractions in the same denomination • compare and order fractions, including fractions > 1 • add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions • multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, 1/4 × 1/2 = 1/8] • divide proper fractions by whole numbers [for example, 1/3 ÷ 2 = 1/6] • associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3/8] **Measurement** • 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 [for example, mm3 and km3]. **Algebra** • recognise when it is possible to use formulae for area and volume of shapes calculate the area of parallelograms and triangles
Spring	**Fractions and decimals part 2 (focus calculating with decimals)** • associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3/8]	Year 6s to be taught separately **Algebra** • use simple formulae • generate and describe linear number sequences

	• identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places • multiply one-digit numbers with up to two decimal places by whole numbers • use written division methods in cases where the answer has up to two decimal places • solve problems which require answers to be rounded to specified degrees of accuracy • recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. **Ratio and proportion** • solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison **Statistics** • interpret and construct **pie charts** and line graphs and use these to solve problems. **Measurement** • solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate • 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	• express missing number problems algebraically • find pairs of numbers that satisfy an equation with two unknowns • enumerate possibilities of combinations of two variables **Measurement** • recognise when it is possible to use formulae for area and volume of shapes **Ratio and proportion** • solve problems involving the relative sizes of 2 quantities where missing values can be found by using integer multiplication and division facts • 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 **Statistics** • interpret and construct pie charts and **line graphs** and use these to solve problems. • calculate and interpret the mean as an average. **Geometry: properties of shapes** • draw 2-D shapes using given dimensions and angles • compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons • recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. • recognise, describe and build simple 3-D shapes, including making nets • illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius **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.

Summer	**Review and consolidate areas identified by Gap analysis / QLA** **SATS**	***Year 6 Project*** ***Consolidation / Assessments & Review*** **Statistics** • interpret and construct **pie charts** and line graphs and use these to solve problems. • recognise, describe and build simple 3-D shapes, including making nets