Areas of Mathematics: Number; number: calculation; number: fractions, decimals and percentages; Measure; Geometry; statistics

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| **Year/Term** | **Number counting and place value** | **Number comparing and ordering, Reading and writing** | **Measure** | **Geometry** | **Position and direction** | **Patterns** |
| **Nursery** | Through continuous provision children will:   * Develop fast recognition of up to 3 objects, without having to count them individually (‘subitising’) * Recite numbers past 5 * Say one number for each item in order: 1,2,3,4,5 * Know that the last number reached when counting a small set of objects tells you how many there are in total (‘cardinal principle’) * Show ‘finger numbers’ up to 5 * Solve real world mathematical problems with numbers up to 5 | Through continuous provision children will:   * Compare quantities using language: ‘more than’, ‘fewer than’ * Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5 * Experiment with their own symbols and marks as well as numerals * Begin to describe a sequence of events, real or fictional, using words such as ‘first’, ‘then...’ | Through continuous provision children will:   * Make comparisons between objects relating to size, length, weight and capacity. | Through continuous provision children will:   * Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: ‘sides’, ‘corners’; ‘straight’, ‘flat’, ‘round’. * Select shapes appropriately: flat surfaces for building, a triangular prism for a roof, etc. * Combine shapes to make new ones – an arch, a bigger triangle, etc. | Through continuous provision children will:   * Understand position through words alone – for example, “The bag is under the table,” – with no pointing. * Describe a familiar route. * Discuss routes and locations, using words like ‘in front of’ and ‘behind’. | Through continuous provision children will:   * Talk about and identify the patterns around them. For example: stripes on clothes, designs on rugs and wallpaper. * Use informal language like ‘pointy’, ‘spotty’, ‘blobs’, etc. * Extend and create ABAB patterns – stick, leaf, stick, leaf. * Notice and correct an error in a repeating pattern. * Begin to describe a sequence of events, real or fictional, using words such as ‘first’, ‘then...’ |

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| **Year/Term** | **Autumn: Terms 1 and 2** | **Spring: Terms 3 and 4** | **Summer: Terms 5 and 6** |
| **Reception** | **Numbers and the Number System**  **Subitising**   * Perceptually subitise within 3, 4 then perceptually and conceptually within 5 * Identify sub-groups in larger arrangements * Experience subitising in a range of context, including using their fingers and temporal patterns by sounds   **Cardinality, ordinality and counting**   * Relate the counting sequence to cardinality * Count through rhyme and song * Count using 1:1 correspondence * To count accurately * Explore the cardinality of 5 * Begin to count beyond 5 * Begin to recognise numerals, relating these to quantities   **Composition**   * See that all numbers can be made of 1s * Explore the concept of ‘wholes’ and ‘parts’ * Explore the composition of numbers within 5   **Comparison**   * Understand that sets can be compared according to a range of attributes * Use the language of comparison, including ‘more than’ and ‘fewer than’ * Compare sets by looking, subitising and matching, knowing that when every object can be matched to one in the other set the amounts are equal | **Numbers and the Number System**  **Subitising**   * Continue to subitise within 5 * Explore a range of patterns made by some numbers greater than 5 * Experience patterns which show a small group and ‘1 more’ * Match arrangements to finger patterns * Link patterns to ‘doubles’   **Cardinality, ordinality and counting**   * Develop verbal counting to 20 and beyond * Continue to develop object counting skills * Link counting to cardinality for quantities between 5 and 10 * Order number, linking cardinal and ordinal representations of number   **Composition**   * Explore the composition of 6 * Begin to see that numbers within 10 can be composed to of ‘5 and a bit’ * Explore the composition of odd and even numbers * Begin to link even numbers to doubles * Explore the composition of numbers within 10   **Comparison**   * Compare sets and use the language of comparison * Compare set by matching, identifying when sets are equal * Explore ways of making unequal sets equal * Compare numbers, reasoning about which is more | **Numbers and the Number System**  **Subitising**   * Continue to practise increasingly familiar subitising arrangements, including those that expose ‘1 more’ or ‘doubles’ patterns * Identify when patterns show the same number but in a different arrangement, or when patterns are similar but have a different number * Subitise structured and unstructured patterns, including those which show numbers within 10, in relation to 5 and 10 * Begin to identify when it is appropriate to count and when groups can be subitised   **Cardinality, ordinality and counting**   * Continue to develop verbal counting to 20 and beyond from different starting numbers * Develop accuracy in verbal and object counting   **Composition**   * Explore the composition of 10   **Comparison**   * Order sets of objects, linking this to ordinal numbers   *Consolidate understanding of concepts previously taught* |
| **Measure and Geometry as part of continuous provision**   * 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 * Investigate how shapes can be combined to make new shapes * Find 2D shapes within 3D shapes, including through printing or shadow play * Continue, copy and create repeating patterns * Make patterns with varying rules and objects * Compare length, weight and capacity * Begin to use comparative language | | |

Areas of Mathematics: Number; number: calculation; number: fractions, decimals and percentages; Measure; Geometry; statistics

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| **Year/Term** | **Autumn: Terms 1 and 2** | **Spring: Terms 3 and 4** | **Summer: Terms 5 and 6** |
| **Year 1** | **Numbers and the Number system (Within 10)**   * read and write numbers from 1 to 10 in numerals and words. * 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   **Calculating: Addition and Subtraction (to 10)**   * given a number, identify one more and one less * count to and across 10, forwards and backwards, beginning with 0 or 1, or from any given number * represent and use number bonds and related subtraction facts within 10   **Visualising and Constructing**   * 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]   **Numbers and the Number system (Within 20)**   * read and write numbers from 1 to 20 in numerals and words * 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 | **Calculating: Addition and Subtraction (to 20)**   * solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ☐ – 9 * given a number, identify one more and one less * count to and across 20, forwards and backwards, beginning with 0 or 1, or from any given number * represent and use number bonds and related subtraction facts within 20   **Calculating: Addition and Subtraction**   * read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs * add and subtract one-digit and two-digit numbers to 20, including zero * solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ☐ – 9   **Numbers and the Number system (Within 50)**   * read and write numbers from 1 to 50 in numerals and words. * 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, read and write numbers to 50 in numerals; count in multiples of twos, fives and tens   **Measuring Space**   * measure and begin to record the following: lengths and heights; mass/weight; capacity and volume; time (hours, minutes, seconds) * compare, describe and solve practical problems for: lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]; mass/weight [for example, heavy/light, heavier than, lighter than]; capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]; time [for example, quicker, slower, earlier, later] | **Calculating: 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   **Exploring 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   **Mathematical Movement**   * describe position, direction and movement, including whole, half, quarter and three-quarter turns   **Numbers and the number system (within 100)**   * read and write numbers from 1 to 100 in numerals and words. * 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, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens   **Exploring Money**   * recognise and know the value of different denominations of coins and notes   **Exploring Time**   * recognise and know the value of different denominations of coins and notes * recognise and use language relating to dates, including days of the week, weeks, months and years * sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] * tell the time to the hour and half past the hour and draw the hands on a clock face to show these times |

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| **Year/Term** | **Autumn: Terms 1 and 2** | **Spring: Terms 3 and 4** | **Summer: Terms 5 and 6** |
| **Year 2** | **Numbers and the number System**   * recognise the place value of each digit in a two-digit number (tens, ones) * read and write numbers to at least 100 in numerals and in words * use place value and number facts to solve problems * identify, represent and estimate numbers using different representations, including the number line   **Counting and comparing**   * compare and order numbers from 0 up to 100; use <, > and = signs * count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward   **Calculating: Addition and Subtraction**   * recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 * add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones; a two-digit number and tens; two two-digit numbers; adding three one-digit numbers * show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot * recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems * 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 and written methods   **Exploring Money**   * recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value * find different combinations of coins that equal the same amounts of money * solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change | **Calculating: 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   **Presentation of Data**   * 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   **Investigating Properties of Shape**   * identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid] * identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line * compare and sort common 2-D and 3-D shapes and everyday objects * identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces   **Exploring Fractions**   * recognise, find, name and write fractions 1/3, 1/4, 2/4 and 3/4 of a length, shape, set of objects or quantity * write simple fractions for example, 1/2 of 6 = 3 and recognise the equivalence of 2/4 and ½ | **Mathematical Movement**   * use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise) * order and arrange combinations of mathematical objects in patterns and sequences   **Exploring Time**   * know the number of minutes in an hour and the number of hours in a day. * compare and sequence intervals of time * tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times   **Measuring Space**   * 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 * compare and order lengths, mass, volume/capacity and record the results using >, < and =   Assess/Enrich and preventing the gap. |

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| **Year/Term** | **Autumn: Terms 1 and 2** | **Spring: Terms 3 and 4** | **Summer: Terms 5 and 6** |
| **Year 3** | **Numbers and the number system**   * recognise the place value of each digit in a three-digit number (hundreds, tens, ones) * read and write numbers up to 1000 in numerals and in words * identify, represent and estimate numbers using different representations * solve number problems and practical problems involving these ideas   **Counting and comparing**   * compare and order numbers up to 1000 * count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number * solve number problems and practical problems involving these ideas   **Calculating: 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   **Calculating: 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, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects | **Calculating: 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, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects   **Exploring Money**   * add and subtract amounts of money to give change, using both £ and p in practical contexts   **presentation of Data**   * 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   **Measuring Space**   * measure the perimeter of simple 2-D shapes   **Exploring Fractions**   * recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators * recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators * recognise and show, using diagrams, equivalent fractions with small denominators * compare and order unit fractions, and fractions with the same denominators | **Calculating fractions and decimals**   * 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]   **Exploring Time**   * 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]   **Investigating Angles**   * recognise angles as 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   **Visualising and constructing**   * identify horizontal and vertical lines and pairs of perpendicular and parallel lines * draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them   **Measuring Space**   * measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)   Assess/Enrich and preventing the gap. |

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| **Year/Term** | **Autumn: Terms 1 and 2** | **Spring: Terms 3 and 4** | **Summer: Terms 5 and 6** |
| **Year 4** | **Numbers and the Number system**   * recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) * 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 * identify, represent and estimate numbers using different representations   **Counting and Comparing**   * order and compare numbers beyond 1000 * count in multiples of 6, 7, 9, 25 and 1000 * count backwards through zero to include negative numbers   **Checking, approximating and estimating**   * round any number to the nearest 10, 100 or 1000 * estimate and use inverse operations to check answers to a calculation * solve number and practical problems that involve all of the above and with increasingly large positive numbers   **Calculating: Addition and Subtraction**   * find 1000 more or less than a given number * add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate * solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why   **Calculating Space**   * measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres * convert between different units of measure [for example, kilometre to metre; hour to minute]   **Calculating: Multiplication and Division**   * recall multiplication and division facts for multiplication tables up to 12 × 12 * recognise and use factor pairs and commutativity in mental calculations * 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 | **Calculating: Multiplication and Division**   * multiply two-digit and three-digit numbers by a one-digit number using formal written layout * solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects   **Calculating Space**   * find the area of rectilinear shapes by counting squares   **Exploring Fractions, Decimals and Percentages**   * count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten * 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 * recognise and write decimal equivalents of any number of tenths or hundredths * recognise and write decimal equivalents to 1/4, 1/2, ¾   **Calculating Fractions Decimals and Percentages**   * 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 * recognise and show, using diagrams, families of common equivalent fractions * solve simple measure and money problems involving fractions and decimals to two decimal places | **Exploring Fractions, Decimals and Percentages**   * recognise and write decimal equivalents of any number of tenths or 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   **Exploring Time and Money**   * 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 * estimate, compare and calculate different measures, including money in pounds and pence   **Presentation of Data**   * interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs * solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs   **Investigating Properties of Shape**   * identify lines of symmetry in 2-D shapes presented in different orientations * complete a simple symmetric figure with respect to a specific line of symmetry * compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes   **Investigating Angles**   * identify acute and obtuse angles and compare and order angles up to two right angles by size   **Mathematical Movement**   * describe positions on a 2-D grid as coordinates in the first quadrant * plot specified points and draw sides to complete a given polygon * describe movements between positions as translations of a given unit to the left/right and up/down   Assess/Enrich and preventing the gap. |

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| **Year/Term** | **Autumn: Terms 1 and 2** | **Spring: Terms 3 and 4** | **Summer: Terms 5 and 6** |
| **Year 5** | **Counting and Comparing**   * read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit * read Roman numerals to 1000 (M) and recognise years written in Roman numerals * count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 * interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero   **Checking, Approximating and Estimating**   * round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000 and 100,000 * round decimals with two decimal places to the nearest whole number and to one decimal place * use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy   **Calculating: Addition and Subtraction**   * add and subtract numbers mentally with increasingly large numbers * add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) * solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why   **Presentation of Data**   * solve comparison, sum and difference problems using information presented in a line graph   **Numbers and the Number System**   * identify multiples and factors, including finding all factor pairs of a number, and common factors of two 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 * recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³) * solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes   **Calculating Space**   * 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 (cm²) and square metres (m²) and estimate the area of irregular shapes | **Calculating: Multiplication and Division**   * multiply and divide numbers mentally drawing upon known facts * multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 * multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers * 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 addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign   **Exploring Fractions, Decimals and Percentages**   * 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 and use thousandths and relate them to tenths, hundredths and decimal equivalents * read and write decimal numbers as fractions [for example, 0.71 = 71/100] * read, write, order and compare numbers with up to three decimal places * 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   **Calculating Fractions, Decimals and Percentages**   * recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, 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 * solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25 * solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates | **Exploring Fractions, Decimals and Percentages**   * solve problems involving number up to three decimal places * multiply and divide whole numbers and those involving decimals by 10, 100 and 1000   **Calculating space**   * estimate volume [for example, using 1 cm³ blocks to build cuboids (including cubes)] and capacity [for example, using water]   **Visualising**   * identify 3-D shapes, including cubes and other cuboids, from 2-D representations   **Investigating Properties of Shape**   * use the properties of rectangles to deduce related facts and find missing lengths and angles * distinguish between regular and irregular polygons based on reasoning about equal sides and angles   **Investigating Angles**   * know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles * draw given angles, and measure them in degrees (°) * identify angles at a point and one whole turn (total 360°); angles at a point on a straight line and 1/2 a turn (total 180°); other multiples of 90°   **Mathematical Movement**   * 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   **Measuring Space**   * convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) * understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints * use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling   **Exploring Time**   * solve problems involving converting between units of time * complete, read and interpret information in tables, including timetables   Assess/Enrich and preventing the gap. |

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| **Year/Term** | **Autumn: Terms 1 and 2** | **Spring: Terms 3 and 4** | **Summer: Terms 5 and 6** |
| **Year 6** | **Numbers and the Number System**   * 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 * read, write, order and compare numbers up to  1. 00 000 and determine the value of each digit  * use negative numbers in context, and calculate intervals across zero * identify common factors, common multiples and prime numbers   **Checking, Approximating and Estimating**   * solve problems which require answers to be rounded to specified degrees of accuracy * use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy * round any whole number to a required degree of accuracy   **Calculating**   * perform mental calculations, including with mixed operations and large numbers * solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why * multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication * solve problems involving addition, subtraction and multiplication * use their knowledge of the order of operations to carry out calculations   **Calculating: Division**   * divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division; 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 the context * use written division methods in cases where the answer has up to two decimal places * solve problems involving division   **Exploring Fractions, Decimals and Percentages**   * use common factors to simplify fractions; use common multiples to express fractions in the same denomination * compare and order fractions, including fractions > 1 * associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3/8] * recall and use equivalences between simple fractions, decimals and percentages, including in different contexts   **Mathematical Movement**   * 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 of Essential Knowledge**  **Calculating Fractions, Decimals and Percentages**   * 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] * multiply one-digit numbers with up to two decimal places by whole numbers * solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison   **Algebraic proficiency**   * use simple formulae * convert between miles and kilometres   **Solving Equations and Inequalities**   * enumerate possibilities of combinations of two variables * express missing number problems algebraically * find pairs of numbers that satisfy an equation with two unknowns   **Measuring Space**   * 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   **Calculating Space**   * recognise that shapes with the same areas can have different perimeters and vice versa * 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] * recognise when it is possible to use formulae for area and volume of shape * solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate   **Proportional Reasoning**   * 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 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   **Patterns**   * generate and describe linear number sequences | **Revision of Essential Knowledge**  **Visualising and Constructing**   * draw 2-D shapes using given dimensions and angles * recognise, describe and build simple 3-D shapes, including making nets   **Investigating Properties of Shape**   * compare and classify geometric shapes based on their properties and sizes and 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   **Investigating Angles**   * recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles   **Presentation of Data**   * interpret and construct pie charts and line graphs and use these to solve problems   **Measuring Data**   * calculate and interpret the mean as an average   **Secondary Transition Units to be agreed with KS3**  **Mathematical Investigations**  **Problem Solving Tasks**  **Maths Within the Curriculum**  **Any Units of work that need to be covered** |