| Number and Place Value | | | | | | | | |
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| Nursery | Reception | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 |
| • Begin to recite number names and use basic mathematical language<br>• With support touch one thing and say number name to count and recognise numerals of personal significance<br>• Link numerals to amounts to 5 and show using fingers<br>• Count items carefully, one-to-one correspondence to 5<br>• Use counting to help solve problems and know that the last number counted tells me how man | • Subitising and counting and representing numbers to 5.<br>• Use mathematical language in play.<br>• Match numerals to an amount up to 10<br>• Count beyond 10 (to 20)<br>• Order representations of amounts to 5 then to 10.<br>• Recognise patterns in the number system<br>• Compare quantities | • count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number<br>• count, read and write numbers to 100 in numerals, count in multiples of twos, fives and tens<br>• given a number, identify one more and one less<br>• identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, | • count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward<br>• recognise the place value of each digit in a two-digit number (tens, ones)<br>• identify, represent and estimate numbers using different representations, including the number line<br>• compare and order numbers from 0 up to 100; use and = signs<br>• read and write numbers to at least 100 in numerals and in words | • count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number<br>• recognise the place value of each digit in a three-digit number (hundreds, tens, ones)<br>• compare and order numbers up to 1000<br>• identify, represent and estimate numbers using different representations<br>• read and write numbers up to 1000 in numerals and in words<br>• solve number | • count in multiples of 6, 7, 9, 25 and 1000<br>• find 1000 more or less than a given number<br>• count backwards through zero to include negative numbers<br>• recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)<br>• order and compare numbers beyond 1000<br>• identify, represent and estimate numbers using different representations | • read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit<br>• count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000<br>• interpret negative numbers in context, count | • read, write, order and compare numbers up to 10 000 000 and determine the value of each digit<br>• round any whole number to a required degree of accuracy<br>• use negative numbers in context and calculate interval | • Understand and use place value<br>• Compare and order numbers<br>• Round to powers of ten and 1sf<br>• Use factors and multiples<br>• Order directed number<br>• Prime factorisation<br>• HCF and LCM |

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| there are in total | | less than (fewer), most, least<br>• read and write numbers from 1 to 20 in numerals and words. | • use place value and number facts to solve problems. | problems and practical problems involving these ideas. | • round any number to the nearest 10, 100 or 1000<br>• solve number and practical problems that involve all of the above and with increasingly large positive numbers<br>• 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. | forwards and backwards with positive and negative whole numbers, including through zero<br>• round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000<br>• solve number problems and practical problems that involve all of the above | s across zero solve number and practical problems that involve all of the above. | |

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| | | | | | | • read Roman numerals to 1000 (M) and recognise years written in Roman numerals. | | |

| Number: Addition and Subtraction | | | | | | | | |
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| Nursery | Reception | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 |
| • Use counting to help solve problems and know that the last number counted tells me how man there are in total | • Find one more then one less than amounts to 10<br>• Recall number bonds for numbers to 5 then 10 | • Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs<br>• represent and use number bonds and related subtraction facts within 20<br>• add and subtract one- | • solve problems with addition and subtraction:<br>• using concrete objects and pictorial representations, including those involving numbers, quantities and measures<br>• applying their increasing knowledge of mental and | • add and subtract numbers mentally, including:<br>○ a three-digit number and ones<br>○ a three-digit number and tens<br>○ a three-digit number | • add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate | • add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) | • perform mental calculations, including with mixed operations and large numbers<br>• use their knowledge of the order of operations to carry out calculations involving the | • Use the four operations with positive integers and decimals<br>• Use a calculator<br>• Order of operations<br>• Use known facts |

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| | | digit and two-digit numbers to 20, including zero<br>• solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = – 9. numerals and words. | written methods<br>• recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100<br>• add and subtract numbers using concrete objects, pictorial representations, and mentally, including:<br>○ a two-digit number and ones<br>○ a two-digit number and tens<br>○ two two-digit numbers<br>○ adding three one-digit numbers<br>• show that addition of two numbers can | and hundreds<br>• add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction<br>• estimate the answer to a calculation and use inverse operations to check answers<br>• solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. | • estimate and use inverse operations to check answers to a calculation<br>• solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why. | • add and subtract numbers mentally with increasingly large numbers<br>• use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy<br>• solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. | four operations<br>• solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why<br>• solve problems involving addition, subtraction, multiplication and division<br>• use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. | |

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| | | | be done in any order (commutative) and subtraction of one number from another cannot<br>• recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems | | | | | |

| Number: Multiplication and division | | | | | | | | |
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| Nursery | Reception | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | |
| • | • Beginning sharing and grouping | • Solve one-step problems involving multiplication and division, by calculating the answer using concrete | • recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including | • recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables | • recall multiplication and division facts for multiplication tables up to 12 × 12 | • identify multiples and factors, including finding all factor pairs of a number, and common | • multiply multi-digit numbers up to 4 digits by a two-digit whole number using the | • Use the four operations with positive integers and decimals |

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| | • Find doubles of numbers to 10. | objects, pictorial representations and arrays with the support of the teacher. | recognising odd and even numbers<br>• calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs<br>• show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot<br>• solve problems involving multiplication and division, | • 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<br>• solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n | • 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<br>• recognise and use factor pairs and commutativity in mental calculations<br>• multiply two-digit and three-digit numbers by a one-digit number using formal written layout<br>• solve problems involving multiplying and adding, including using the distributive law to multiply | factors of two numbers<br>• know and use the vocabulary of prime numbers, prime factors and composite (nonprime) numbers<br>• establish whether a number up to 100 is prime and recall prime numbers up to 19<br>• 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 | formal written method of long multiplication<br>• 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<br>• divide numbers up to 4 digits by a two-digit number using the formal | • Use a calculator<br>• Order of operations<br>• Use known facts<br>• Multiply and divide by positive powers of ten |

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| | | | using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. | objects are connected to m objects. | two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects. | • multiply and divide numbers mentally drawing upon known facts<br>• 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<br>• multiply and divide whole numbers and those involving decimals by 10, 100 and 1000<br>• recognise and use square numbers and cube numbers, | written method of short division where appropriate, interpreting remainders according to the context<br>• perform mental calculations, including with mixed operations and large numbers<br>• identify common factors, common multiples and prime numbers<br>• use their knowledge of the order of operations to carry out calculations involving the four operations | |

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| | | | | | | and the notation for squared ( 2 ) and cubed (3 )<br>• solve problems involving multiplicatio n and division including using their knowledge of factors and multiples, squares and cubes<br>• solve problems involving addition, subtraction, multiplicatio n and division and a combination of these, including understandin g the meaning of the equals sign | • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why<br>• solve problems involving addition, subtraction, multiplicatio n and division<br>• use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. | |

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| | | | | | | • solve problems involving multiplicatio n and division, including scaling by simple fractions and problems involving simple rates. | | |

| Number: Fractions, decimals and percentages. | | | | | | | | |
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| Nursery | Reception | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 |
| • | • Begin doubling | • recognise, find and name a half as one of two equal parts of an object, shape or quantity<br>• recognise, find and name a quarter as one of four equal parts of | • recognise, find, name and write fractions 3 1 , 4 1 , 4 2 and 4 3 of a length, shape, set of objects or quantity<br>• write simple fractions for example, 2 1 of 6 = 3 and recognise | • 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<br>• recognise, find and write fractions of a discrete set of objects: unit | • recognise and show, using diagrams, families of common equivalent fractions<br>• count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. | • compare and order fractions whose denominators are all multiples of the same number<br>• identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths | • use common factors to simplify fractions; use common multiples to express fractions in the same denomination<br>• compare and order fractions, including fractions > 1<br>• add and subtract fractions with | • Add and subtract fractions including mixed numbers.<br>• Interchange between fractions and decimals below 1<br>• Explore fractions above 1<br>• Find fractions of |

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| | | an object, shape or quantity. | the equivalence of 4 2 and 2 1 . | fractions and non-unit fractions with small denominators<br>• recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators<br>• recognise and show, using diagrams, equivalent fractions with small denominators<br>• add and subtract fractions with the same denominator within one whole [for example, 7 5 + 7 1 = 7 6 ]<br>• compare and order unit fractions, and fractions with the same denominators | • 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<br>• add and subtract fractions with the same denominator<br>• recognise and write decimal equivalents of any number of tenths or hundredths<br>• recognise and write decimal equivalents to 4 1 , 2 1 , 4 3<br>• find the effect of dividing a one- or two-digit number | • 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, 5 2 + 5 4 = 5 6 = 1 5 1 ]<br>• add and subtract fractions with the same denominator and denominators that are multiples of the same number<br>• multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams<br>• read and write decimal numbers as fractions [for | different denominators and mixed numbers, using the concept of equivalent fractions<br>• multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, 4 1 × 2 1 = 8 1 ]<br>• divide proper fractions by whole numbers [for example, 3 1 ÷ 2 = 6 1 ]<br>• associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 8 3 ] | an amount (up to 1)<br>• Solve problems with fractions greater than 1<br>• Interchange between fractions, decimals and percentages up to 100%<br>• Find percentage of amounts using mental and calculator methods |

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| | | | | • solve problems that involve all of the above. | by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths<br>• round decimals with one decimal place to the nearest whole number<br>• compare numbers with the same number of decimal places up to two decimal places<br>• solve simple measure and money problems involving fractions and decimals to two decimal places. | example, 0.71 = 100 71 ]<br>• recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents<br>• round decimals with two decimal places to the nearest whole number and to one decimal place<br>• read, write, order and compare numbers with up to three decimal places<br>• solve problems involving number up to three decimal places<br>• recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per | • 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<br>• multiply one-digit numbers with up to two decimal places by whole numbers<br>• use written division methods in cases where the answer has up to two decimal places<br>• solve problems which require answers to be rounded to specified degrees of accuracy<br>• recall and use equivalences | |

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| | | | | | | hundred', and write percentages as a fraction with denominator 100, and as a decimal<br>• solve problems which require knowing percentage and decimal equivalents of 2 1 , 4 1 , 5 1 , 5 2 , 5 4 and those fractions with a denominator of a multiple of 10 or 25. | between simple fractions, decimals and percentages, including in different contexts. | |

| Number: Measurement | | | | | | | | |
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| Nursery | Reception | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 |
| • Beginning to have an understanding of sizes | • Compare lengths and heights<br>• Talk about time<br>• Order and | • compare, describe and solve practical problems for:<br>• lengths and heights [for example, long/short, longer/shorter, | • choose and use appropriate standard units to estimate and measure length/height in any direction | • measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) | • Convert between different units of measure [for example, kilometre to metre; | • convert between different units of metric measure (for example, kilometre and | • solve problems involving the calculation and conversion of units of measure, using | • Solve perimeter problems<br>• Area of rectangles, parallelograms and triangles |

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| | sequence simple times<br>• Begin exploring mass and capacity | tall/short, double/half]<br>• mass/weight [for example, heavy/light, heavier than, lighter than]<br>• capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]<br>• time [for example, quicker, slower, earlier, later]<br>• measure and begin to record the following:<br>○ lengths and heights<br>○ mass/weight<br>○ capacity and volume<br>○ time (hours, minutes, seconds)<br>• recognise and know the value of different | (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels<br>• compare and order lengths, mass, volume/capacity and record the results using >, < and =<br>• recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value<br>• find different combinations of coins that equal | • measure the perimeter of simple 2-D shapes<br>• add and subtract amounts of money to give change, using both £ and p in practical contexts<br>• tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks<br>• estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, | hour to minute]<br>• measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres<br>• find the area of rectilinear shapes by counting squares<br>• estimate, compare and calculate different measures, including money in pounds and pence | metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)<br>• understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints<br>• measure and calculate the perimeter of composite rectilinear | decimal notation up to three decimal places where appropriate<br>• 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<br>• convert between miles and kilometres | |

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| | | denominations of coins and notes<br>• sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]<br>• recognise and use language relating to dates, including days of the week, weeks, months and years<br>• tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. | the same amounts of money<br>• solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change<br>• compare and sequence intervals of time<br>• 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<br>• know the number of minutes in an hour and | minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight<br>• know the number of seconds in a minute and the number of days in each month, year and leap year<br>• compare durations of events [for example to calculate the time taken by particular events or tasks]. | | shapes in centimetres and metres<br>• 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<br>• estimate volume [for example, using 1 cm3 blocks to | • recognise that shapes with the same areas can have different perimeters and vice versa<br>• recognise when it is possible to use formulae for area and volume of shapes<br>• calculate the area of parallelograms and triangles<br>• calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3 ) and | |

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| | | | the number of hours in a day. | | | build cuboids (including cubes)] and capacity [for example, using water]<br>• solve problems involving converting between units of time<br>• use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling. | cubic metres (m3 ), and extending to other units [for example, mm3 and km3 ]. | |

| Geometry- Property of shapes | | | | | | | | |
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| Nursery | Reception | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 |
| • Beginning to have an understanding of shape<br>• Explore shapes for building and modelling<br>• Talk about, play with and explore common 2D and some 3D shapes | • Recognise and name simple 2D and 3D shapes | • recognise and name common 2-D and 3-D shapes, including:<br>• 2-D shapes [for example, rectangles (including squares), circles and triangles]<br>• 3-D shapes [for example, cuboids (including cubes), pyramids | • identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line<br>• identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces | • draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them<br>• recognise angles as a property of shape or a description of a turn<br>• identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and | • compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes<br>• identify acute and obtuse angles and compare and order angles up to two right angles by size<br>• identify lines of symmetry in 2-D shapes presented in different orientations | • identify 3-D shapes, including cubes and other cuboids, from 2-D representations<br>• know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles<br>• draw given angles, and measure them in degrees (o )<br>• identify:<br>○ angles at a point and one whole turn (total 360o )<br>○ angles at a | • draw 2-D shapes using given dimensions and angles<br>• recognise, describe and build simple 3-D shapes, including making nets<br>• compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons<br>• illustrate and name parts of | • Name and construct polygons<br>• Properties of triangles and quadrilaterals<br>• Angles at a point<br>• Adjacent angle on a straight line<br>• Vertically opposite angles<br>• Angles in triangles and quadrilaterals<br>• Simple angle proofs |

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| | | and spheres]. | • identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]<br>• compare and sort common 2-D and 3-D shapes and everyday objects. | four a complete turn; identify whether angles are greater than or less than a right angle<br>• identify horizontal and vertical lines and pairs of perpendicular and parallel lines. | • complete a simple symmetric figure with respect to a specific line of symmetry. | point on a straight line and 2 1 a turn (total 180o )<br>○ other multiples of 90o<br>• use the properties of rectangles to deduce related facts and find missing lengths and angles<br>• distinguish between regular and irregular polygons based on reasoning about equal sides and angles. | circles, including radius, diameter and circumference and know that the diameter is twice the radius<br>• 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 | | | | | | | | |
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| Nursery | Reception | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 |
| • Have a growing awareness of familiar routes and locations and use positional language to describe them | • Represent maps with models (build scenes)<br>• Describe positions<br>• Give instructions | • describe position, direction and movement, including whole, half, quarter and three quarter turns. | • order and arrange combinations of mathematical objects in patterns and sequences<br>• 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 anticlockwise). | *Apply Year 2* | • describe positions on a 2-D grid as coordinates in the first quadrant<br>• describe movements between positions as translations of a given unit to the left/right and up/down<br>• plot specified points and draw sides to complete a given polygon | • 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. | • describe positions on the full coordinate grid (all four quadrants)<br>• draw and translate simple shapes on the coordinate plane, and reflect them in the axes. | • Geometric rotation<br>• Draw lines, angles and simple shapes<br>• Parallel and perpendicular lines<br>• |

| Statistics | | | | | | | | |
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| Nursery | Reception | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 |
| | | *Ask and answer simple questions: Do you like…? Yes/No; Which is your favourite…..? Collect and compare answers using real and concrete objects sticks of (multilink and tens frames).* | • interpret and construct simple pictograms, tally charts, block diagrams and simple tables<br>• ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity<br>• ask and answer questions about totalling and comparing categorical data. | • interpret and present data using bar charts, pictograms and tables<br>• 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. | • interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.<br>• solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs. | • solve comparison, sum and difference problems using information presented in a line graph<br>• complete, read and interpret information in tables, including timetables. | • interpret and construct pie charts and line graphs and use these to solve problems<br>• calculate and interpret the mean as an average. | • Use the language of probability<br>• Calculate simple probabilities<br>• Use the probability scale<br>• Sample spaces<br>• Understand and use set notation including Venn diagrams<br>• Know the sum of probabilities is 1<br>• Solve problems with line charts and bar charts<br>• Construct and interpret pie charts<br>• Find the median and the range<br>• Fine the mean |

| Ratio and Proportion | | | | | | | | |
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| Nursery | Reception | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 |
| | | | | | | | • solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts<br>• solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison<br>• solve problems involving similar shapes where the scale factor is known or can be found<br>• solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. | • Convert metric units<br>• Use multiplicative relationships between known facts |

| Algebra | | | | | | | | |
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| Nursery | Reception | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 |
| • *Represent amount on fingers* | • *Work out missing numbers/amounts when subitising* | • *solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and* ***missing number problems*** *such as 7 = □ - 9*<br>• *sequence events in chronological order using language such as: before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening* | • *recognise and use the inverse relationship between addition and subtraction and use this to check calculations and* ***missing number*** *problems.*<br>• *order and arrange combinations of mathematical objects in patterns* | • *solve problems, including* ***missing number*** *problems, using number facts, place value, and more complex addition and subtraction.*<br>• *solve problems, including missing number problems, involving multiplication and division, including integer scaling* | • *Perimeter can be expressed algebraically as 2(a + b) where a and b are the dimensions in the same unit.* | • *use the properties of rectangles to deduce related facts and find* ***missing lengths and angles*** | • use simple formulae<br>• generate and describe linear number sequences<br>• express missing number problems algebraically<br>• find pairs of numbers that satisfy an equation with two unknowns enumerate possibilities of combinations of two variables. | • Function machines<br>• Algebraic notation<br>• Substitute into expressions<br>• Substitution with directed number<br>• Explore related algebraic expressions<br>• Understand the difference between equivalence and equality<br>• Collect like terms<br>• Simple algebraic fractions |

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| | | | | | | | | • Form and solve one-step equations<br>• Form and solve two-step equations<br>• Represent functions graphically<br>• Recognise linear and non-linear sequences<br>• Generate sequences from an algebraic rule |