## (ive <br> ELSTON HALL <br> Learning Trust <br> Maths coverage Year 1 to Year 6

## Number - Number and Place Value

|  | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | - count in multiples of twos, fives and tens <br> - count to and across 100, forwards and backwards, beginning with O or I , or from any given number | - count in steps of 2,3 , and 5 from 0 , and in tens from any number, forward and backward | - count from O in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number | - count in multiples of 6,7,9, 25 and 1000 | - count forwards or backwards in steps of powers of 10 for any given number up to 1000 000 |  |
|  |  |  |  | - count backwards through zero to include negative numbers | - interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero | - use negative numbers in context, and calculate intervals across zero |
|  | - count, read and write numbers to 100 in numerals; <br> - read and write numbers from I to 20 in numerals and words. <br> - given a number, identify one more and one less | - recognise the place value of each digit in a two-digit number (tens, ones) <br> - read and write numbers to at least 100 in numerals and in words | - recognise the place value of each digit in a three-digit number (hundreds, tens, ones) <br> - read and write numbers up to 1000 in numerals and in words | - recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) <br> - find 1000 more or less than a given number | - Read and write numbers to at least I 000000 and determine the value of each digit | - read and write numbers up to 10000000 and determine the value of each digit |
|  |  |  | - Read Roman numerals to 12 (measures - time) | - read Roman numerals to 100 (C) and know over time, the numeral system changed to include the concept of zero/place value. | - read Roman numerals to 1000 (M) and recognise years written in Roman numerals. |  |
|  | - use the language of: equal to, more than, less than (fewer), most, least | - compare and order numbers from 0 up to IOO; use <, > and $=$ signs | - compare and order numbers up to 1000 | - order and compare numbers beyond 1000 | - order and compare numbers to at least I 000000 | - order and compare numbers up to 10000000 |


|  | - identify and represent numbers using objects and pictorial representations including the number line, | - identify, represent and estimate numbers using different representations, including the number line | - identify, represent and estimate numbers using different representations | - identify, represent and estimate numbers using different representations |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | - round any number to the nearest 10,100 or 1000 | - round any number up to I 000000 to the nearest 10 , $100,1000,10000$ and 100 000 | - round any whole number to a required degree of accuracy |
|  | $\bullet$ | - use place value and number facts to solve problems. | - solve number problems and practical problems involving these ideas. | - solve number and practical problems that involve all of the above and with increasingly large positive numbers | - solve number problems and practical problems that involve all of the above | - solve number and practical problems that involve all of the above (read, write, order and compare) |




## Number - Fractions (Decimals and Percentages)

|  | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | - 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 an object, shape or quantity. | - Recognise, find, name and write fractions: $1 / 3,1 / 4,2 / 4$ and $3 / 4$ of a length, shape, set of objects or quantity | - recognise, find and write fractions of a discrete set of objects: unit 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 | - Recognise and show, using diagrams, families of common equivalent fractions <br> - Recognise and write decimal equivalents of any number of tenths or hundredths <br> - Recognise and write decimal equivalents $1 / 4,1 / 2,3 / 4$. | - identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths <br> - read and write decimal numbers as fractions [for example, $0.71=71 / 100$ <br> - recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents <br> - 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 <br> - recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > I as a mixed number [for example, 2/5 + $4 / 5=6 / 5=11 / 5$ | - use common factors to simplify fractions; use common multiples to express fractions in the same denomination <br> - associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3/8] <br> - recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. |
|  |  | - Write simple fractions for example, $1 / 2$ of $6=3$ and recognise the equivalence of $2 / 4$ and $1 / 2$ | - compare and order unit fractions, and fractions with the same denominators | - Compare numbers with the same number of decimal places up to two decimal places | - compare and order fractions whose denominators are all multiples of the same number <br> - read, write, order and compare numbers with up to three decimal places | - compare and order fractions, including fractions > I |
|  |  |  | - add and subtract fractions with the same denominator within one whole [for example, $5 / 7+1 / 7=6 / 7$ | - Add and subtract fractions with the same denominator | - add and subtract fractions with the same denominator and denominators that are multiples of the same number | - add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent 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 | - Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | - Round decimals with one decimal place to the nearest whole number | - round decimals with two decimal places to the nearest whole number and to one decimal place |  |
|  |  |  |  | - 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 | - multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams | - multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $1 / 4 \times 1 / 2=1 / 8]$ <br> - divide proper fractions by whole numbers [for example, $1 / 3 \div 2=1 / 6$ |
|  |  |  | - solve problems that involve all of the above. | - 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> - Solve simple measure and money problems involving fractions and decimals to two decimal places. | - solve problems involving number up to three decimal places 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 which require answers to be rounded to specified degrees of accuracy |
|  |  |  |  |  |  | - 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 |



|  | - recognise and use language relating to dates, including days of the weck, weeks, months and years |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | - tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. | - 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 | - tell and write the time from an analogue clock, including using Roman numerals from 1 to XII, and 12-hour and 24hour clocks <br> - 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 |  |  |  |
|  |  |  | - measure the perimeter of simple 2-D shapes | - 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 | - measure and calculate the perimeter of composite rectilinear 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 | - 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 |
|  |  |  |  |  | - estimate volume [for example, using I cm 3 blocks to build cuboids (including cubes)] and capacity [for example, using water] | - 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]. |
|  |  |  |  |  | - use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling. | - solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate |

## Geometry - Properties of Shapes

Autumn:
Spring:
Summer:

|  | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | - recognise and name common 2-D and 3-D shapes, including: <br> - 2-D shapes [for example, rectangles lincluding squares), circles and triangles] | - Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line <br> - 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 2D and 3-D shapes and everyday objects. | - draw 2-D shapes <br> - identify horizontal and vertical lines and pairs of perpendicular and parallel lines. | - Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes <br> - Identify lines of symmetry in 2-D shapes presented in different orientations <br> - Complete a simple symmetric figure with respect to a specific line of symmetry. | - distinguish between regular and irregular polygons based on reasoning about equal sides and angles. | - draw 2-D shapes using given dimensions and angles <br> - compare and classify geometric shapes based on their properties and sizes <br> - illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius |
|  | - 3-D shapes [for example, cuboids lincluding cubes). pyramids and spheres. | - Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces | - and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them |  | - identify 3-D shapes, including cubes and other cuboids, from 2-D representations | - recognise, describe and build simple 3-D shapes, including making nets |
|  |  |  | - 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 four a complete turn; identify whether angles are greater than or less than a right angle | - Identify acute and obtuse angles and compare and order angles up to two right angles by size | - know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles <br> - draw given angles, and measure them in degrees (ロ) <br> - identify: <br> - angles at a point and one whole turn (total $360^{\circ}$ ) <br> - angles at a point on a straight line andI/2 a turn (total $180^{\circ}$ ) <br> - other multiples of $90^{\circ}$ <br> - use the properties of rectangles to deduce related facts and find missing lengths and angles | - find unknown angles in any triangles, quadrilaterals, and regular polygons <br> - recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. |

## Ceometry - Position and Direction Sutumn: Spring: Summer:

|  | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | - describe position, direction and movement, including whole, half, quarter and threequarter turns. | - Use mathematical vocabulary to describe position, direction and movement, including movernent in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and threequarter turns (clockwise and anti-clockwise). |  | - Describe positions on a 2-D grid as coordinates in the first quadrant <br> - Plot specified points and draw sides to complete a given polygon. |  | - describe positions on the full coordinate grid (all four quadrants) |
|  |  | - Order and arrange combinations of mathematical objects in patterns and sequences |  | - Describe movements between positions as translations of a given unit to the left/right and up/down | - 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. | - draw and translate simple shapes on the coordinate plane, and reflect them in the axes. |


| Statistics | Autumn:Year I | Spring: Su |  | mmer: |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|  |  | - Interpret and construct simple pictograms, tally charts, block diagrams and simple tables | - Interpret and present data using bar charts, pictograms and tables | - Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. | - complete, read and interpret information in tables, including timetables. | - interpret and construct pie charts and line graphs and use these to solve problems |
|  |  | - Ask and answer questions about totalling and comparing categorical data. <br> - Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity | - 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. | - 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 | - calculate and interpret the mean as an average. |

Ratio and Proportion
Autumn:

solve problems involing the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts
solve problems involving the calculation of percentages [for example, of measures, and such as $15 \%$ of 360] and the use of percentages for comparison

- solve problems involving similar shapes where the scale factor is known or can be found
- solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.

| Algebra | Autumn: |  | Spring: | Summer: |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|  |  |  |  |  |  | - 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 <br> - enumerate possibilities of combinations of two variables. |

