

## Maths Curriculum Progress Maps Grades E1-5

E1	E2	E3	1	2	3	4	5
<b>Algebra</b>							
Read, write and order numbers up to 10. Recognise what is one more and one less Use halving as way of "undoing" doubling and vice-versa Tell the time	Spot sequences of numbers, including odds and evens Begin to write some number sentences using +, - and = Solve problems in time	Find and recognise factors and multiples in different numbers Begin to understand the role of the "=" sign when 'balancing' equations Recognise patterns including multiples of 2, 5 and 10 Find and recognise multiples of different numbers	Collect simple like terms like $a + a + a$ Describe the difference between expressions and equations Identify common factors between numbers Identify common multiples between numbers Describe more challenging number patterns in words Solve simple one step linear equations Plot positive coordinates	Collect like terms in an expression Expand a single bracket Form an equation Identify arithmetic progression as a times table with adjustment Substitute positive values into linear expressions and formulae Plot coordinates involving negative numbers Plot and understand simple lines Solve a simple two step linear equation	Expand and simplify expressions with negative numbers Factorise an expression with common factors Write and use the $n$ th term for an arithmetic sequence Substitute positive and negative values into expressions involving $x^2$ and $x^3$ Solve linear equations with the unknown on both sides Use trial and improvement to solve an equation Plot and understand features of graphs in the form $y = mx + c$	Expand and simplify two brackets with $x$ Use the $n$ th term of a quadratic sequence Plot and understand features of linear graphs written in different forms Use set notations when working with intervals	Expand and simplify two brackets with $ax^2$ Use simple laws of indices Factorise a quadratic expression with $ax^2$ into two brackets Calculate the gradient and length between any two points Substitute fractions, decimals and negative values into formulae Solve linear simultaneous equations graphically Solve linear simultaneous equations algebraically Solve linear inequalities and represent on a number line
<b>Number</b>							
Add and subtract numbers up to ten  Read, write and order numbers up to ten  Count up to ten	Multiply and divide whole numbers  When solving problems recognise what operation to use. Know that multiplication is repeated addition  Add and subtract multiples of 10  Solve simple number problems, including those involving money  Show understanding of place value by ordering numbers to 100	Show understanding of place value by ordering numbers to 1000. Use this to make approximations and multiply and divide by ten  Begin to use decimal notation with money and measures  Find and recognise factors and multiples of numbers  Recognise negative numbers e.g. when reading the temperature Multiply and divide two digit numbers by 2, 3, 4, 5 and 10 Add and subtract two and three digit numbers Know the 2, 3, 4, 5 and 10 times tables	Multiply and divide integers by 10 and 100  Order decimal numbers  Add, subtract, multiply and divide integers  Find and use inverse problems to solve  Know up to my 12x12 times tables Add and subtract decimal numbers with up to 2 decimal places Identify common factors Identify common multiples	Multiply and divide numbers by 10, 100 and 1000  Add, subtract, multiply and divide numbers up to 2 decimal places  Multiply and divide a three digit number by a two digit number without a calculator  Estimate answers by rounding to the nearest place value  Order, add and subtract negative numbers  Identify equivalent fractions and simplify	Express one number as a fraction or percentage of another  Understand when fractions, decimals and percentages are equal  Round to decimal places  Calculate squares, cubes and small powers of numbers  Calculate square roots and cube roots  Write a number as a product of its prime factors  Add, subtract, multiply and divide fractions	Round to significant figures  Understand what happens when you multiply or divide a number between 0 and 1  Estimate square roots  Identify the HCF or LCM, possibly using prime factor decomposition  Add, subtract, multiply and divide mixed numbers	Round to 1 significant figure and use this to estimate  Convert between decimal numbers and numbers written in standard form  Know that measurements given to the nearest whole number could be half a unit bigger or smaller  Add, subtract, multiply and divide combinations of fractions, decimals and integers  Use simple laws of indices
<b>Shape, Space and Measures</b>							
Know the difference between 2D and 3D and begin to name some shapes  Read the time to the hour and begin to learn half hour  Order daily happenings e.g. know the days of the week in order  Compare lengths and weights of objects	Read the time using o'clock, half past, quarter past and quarter to the hour Begin to measure length and mass, using non-standard and standard units. Choose suitable apparatus Understand angle as a measure of turn. Know a right angle is a quarter of a full turn Describe the position and order of objects e.g. know the difference between left and right, clockwise and anti-clockwise	Begin to measure surface area and perimeter length, using standard and non standard units  Read a 12-hour clock  Use metric terms to measure length, capacity and mass  Use terms such as left and right, clockwise and anti clockwise. Know a whole turn is 360 degrees and a quarter turn is 90  Know some properties of common 2D and 3D shapes. Spot lines of symmetry in 2D shapes.  Name some 2D and 3D shapes and use what you know about their properties to sort them	Recognise the net of a 3D shape  Reflect simple shapes in a mirror line  Use a compass and protractor to construct circles or measure angles  Identify and use correct units of measurement  Find the area by counting squares  Find the perimeter of simple shapes  Identify parallel and perpendicular lines  Know and be able to label different angles	Draw and measure angles and construct triangles using SAS and ASA Calculate angles on a straight line, around a point, in a triangle, in a quadrilateral or vertically opposite Identify lines of symmetry in a shape  State the rotational symmetry of a shape  Calculate the area and perimeter of rectangles and squares  Calculate the area of a triangle  Construct and identify nets for cubes, cuboids and triangular prisms	Use isometric drawings, plans and elevations  Know the names and angle properties of different quadrilaterals  Calculate and describe missing angles on parallel lines  Calculate interior and exterior angles in polygons  Construct and describe bearings  Calculate the circumference and area of a circle Calculate the area of trapeziums, parallelograms and kites Calculate the area of compound shapes involving rectangles and triangles Calculate the volume of cubes and cuboids Perform and describes translations, rotations and reflections  Enlarge a shape by a positive integer scale factor  Construct perpendicular lines, angle bisectors and triangles with SSS or RHS	Calculate the length of the hypotenuse using Pythagoras' theorem  Calculate and use the volume of triangular prisms and cylinders  Enlarge a shape by a fractional scale factor  Calculate with speed  Describe a combination of transformations as a single transformation.  Construct a perpendicular from a point to a line	Solve problems in context using Pythagoras' theorem  Calculate and use the surface area of cubes, cuboids, triangular prisms and cylinders  Construct the locus of a point or region for a given rule  Calculate compound measure, such as density, speed or pressure  Understand that vectors represent movement and can be combined  Solve simple problems with vectors  Use trigonometry to find angles and sides in right angled triangles Know sin and cos for 0, 30, 45, 60 and 90 and know tan for 0, 30, 45 and 60.
<b>Statistics and Probability</b>							
Use pictures, objects or numbers to record sorting work  Sort objects into simple sets	Ask and answer questions about information collected and recorded Collect some information and make a simple record of your findings	Gather information and decide how best to present it. Be able to interpret this data  Use the language of probability	Record data in a frequency table  Group data in equal classes and display in a table  Use and explain mode and range  Explain what a bar chart, pictogram and a simple pie chart shows Collect and present data e.g. frequency tables, line graphs etc. Position or describe events on a probability scale from 0 to 1	Identify the difference between continuous and discrete data Calculate the mean, mode, median and range from a set of numerical data Explain what a pie chart shows, involving fractions and percentages Find theoretical probability and experimental probability	Decide how to group data using class-intervals.  Calculate and interpret the mean, mode, median and range from a frequency table  Construct a pie chart  Construct and interpret a stem and leaf diagram  Construct a scatter diagram and describe the relationship  Find all combinations of two events  Describe probabilities as fractions, decimals and percentages	Find the modal class the group with the median value for grouped data  Recognise and describe causes of bias  Draw and interpret frequency polygons  Draw a line of best fit and describe correlation on a scatter diagram  Construct and interpret Venn diagrams  Understand and identify relative frequency	Estimate the mean from grouped data  Find upper and lower quartiles in a set of data and interquartile range  Calculate relative frequency  Construct tree diagrams
<b>Ratio and Proportion</b>							
Begin to find half of a shape and half of a small number of objects  Double to at least number 5 mentally	Begin to find halves and quarters of shapes and numbers of objects  Double and half numbers from 1 to 10 mentally	Recognise fractions as several parts of the whole and spot equivalent fractions	Identify and shade fractions of objects  Work out simple fractions and percentages of amounts	Calculate percentages and fractions of amounts Identify equivalent fractions and simplify to their simplest form Identify simple equivalence between fractions, decimals and percentages Calculate a fraction of an amount  Identify equivalent ratios	Increase or decrease an amount by a percentage  Understand the relationship between ratios and fractions  Simplify a ratio to its simplest form  Divide an amount into a given ratio with two parts  Interpret and use graphs of conversion/change	Increase or decrease an amount by a percentage using a multiplier  Divide an amount into a given ratio  Use and understand direct proportion e.g. recipes  Construct graphs of rates of change	Calculate and understand simple interest and depreciation  Use and understand inverse proportion  Construct graphs of rates of change