



| | Algebra | Number | Geometry | Statistics and Probability |
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| Mastering | <ul style="list-style-type: none"> • Use index notation, including negative indices, and basic index laws • Factorise linear expressions • Change the subject of formulae • Add and subtract simple algebraic fractions • Use $y = mx + c$ to find the gradient and y-intercept of graphs • Plot the graph of an implicit function • Plot the graph of non-linear functions • Find the midpoint of a pair of coordinates • Solve multi-step equations including with fractions and negative algebraic terms • Solve non-linear equations using a trial and improvement method • Describe sequences using recursive formulae | <ul style="list-style-type: none"> • Use, multiply and divide numbers written in index form. • Use rounding to make estimates. • Calculate with positive and negative powers of 10. • Interpret the results of a calculation in context. • Use a calculator to calculate with roots, powers, brackets and fractions. | <ul style="list-style-type: none"> • Calculate circumference of a circle • Calculate the area of a circle/semi-circle • Name all parts of a circle • Calculate interior and exterior angles of polygons • Identify similar shapes • Use (positive) fractional scale factors • Understand and use map scales • Find the surface area of prisms | <ul style="list-style-type: none"> • Using the data handling cycle to plan a survey. • Using and interpreting frequency tables and diagrams. eg scatter diagrams and correlation • Constructing statistical diagrams. • Calculate averages using a grouped frequency table. • Comparing distributions. • Two or more sample spaces. • Using tree diagrams. • Comparing experimental and theoretical probability. Venn diagrams and probability with notation. |
| Deepening | <ul style="list-style-type: none"> • Use indices to simplify expressions • Identify the equations of linear graphs and lines parallel to the axes • Construct and interpret real life graphs and time series graphs • Solve multi-step equations including with brackets and the unknown on both sides • Find and use position-to-term rules that describe sequences of numbers • Recognise and describe geometric sequences • Substitute positive decimals and negative numbers into expressions • <i>Construct and solve equations in context</i> | <ul style="list-style-type: none"> • Use trial and improvement to find square and cube roots • Express one number as a percentage of another • Add and subtract fractions with different denominators or with mixed numbers/improper fractions • Convert between fractions, decimals and percentages • Calculate percentage increase/decrease using a single method • Calculate percentage change and find the original amount • Express one number as a fraction of another • Use long and short division • Use the order of operations, including brackets (BIDMAS) • Use rules of arithmetic with negative numbers • Multiplying and dividing by 10, 100, 1000, 0.1, 0.01 • Use prime factor trees to find the LCM and HCF • Solve problems involving ratio and proportion | <ul style="list-style-type: none"> • Find missing sides of triangles, trapezia and parallelograms given the area • Identify congruent shapes • Properties of polygons • Find missing angles in a quadrilateral • Find missing angles on parallel lines using knowledge of alternate, corresponding and vertically opposite angles • Angle proof • Calculate areas of triangles, parallelograms and trapezia by formula • Enlarge an object given a (positive integer) scale factor about a point • Identify the (positive integer) scale factor of a completed enlargement • Measure and calculate bearings • Describe and construct simple loci • Construct bisectors and perpendiculars • Construct SSS triangles • Construct quadrilaterals • Be able to draw a plan, side and front elevation of a 3D shape • Calculate the surface area of cuboids • Calculate the volume of cuboids and prisms • Find the length of a prism, given the cross-section and volume • Describe combinations of transformations as a single transformation • Produce a scale drawing • <i>Convert between metric and imperial (given a fact)</i> | <ul style="list-style-type: none"> • Design an effective questionnaire to collect data considering correct questioning without bias • Identify problems with questionnaires • Grouping and comparing grouped data • Mutually exclusive probability • Understanding experimental data • Equally likely outcomes • Sorting into Venn diagrams |
| Securing | <ul style="list-style-type: none"> • Expand and simplify expressions with single brackets, powers and division • Recognise, construct and use contextual expressions and formulae • Generate a table of values to draw a straight line graph • Identify the equations of horizontal and vertical graphs • Derive and solve two-step equations including worded problems • Find and use term-to-term rules that describe sequences of numbers • Use position-to-term rules to generate sequences (the nth term) • Use sequences to solve contextual problems | <ul style="list-style-type: none"> • Simplify equivalent fractions • Use decimal conversions to order fractions • Calculate percentages of amounts. • Recognise and use cube and square numbers, cube and square roots • Find the prime factor decomposition of a number • Order decimals • Find the LCM and HCF • Add and subtract fractions with different denominators • Write recurring decimals as fractions • Use a calculator for complex calculations • Share using ratio | <ul style="list-style-type: none"> • Calculate areas of compound shapes • Convert freely between metric units • Reading scales • Properties of quadrilaterals • Find the area of trapezia, parallelograms and triangles • Identify order of rotational symmetry • Identify lines of symmetry on a shape • Plot and transform objects given coordinates and instructions (rotate, translate, and reflect in diagonal mirror lines) • Construct SAS and ASA triangles • Identify scale factor • Produce scale drawings • Isometric drawings | <ul style="list-style-type: none"> • Create a data collection sheet • Draw pie and bar charts • Use and plot scatter diagrams and correlation • Use and plot stem and leaf diagrams • List outcomes • Introduction to tree diagrams • Use Venn diagrams • <i>Experimental probability questions</i> • <i>Identify primary and secondary data</i> |

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| | <ul style="list-style-type: none"> ● <i>Identify missing coordinates to construct shapes</i> | <ul style="list-style-type: none"> ● Use ratio and proportion in real life problems ● Construct a scale drawing ● <i>Calculations with negative numbers</i> | <ul style="list-style-type: none"> ● Name 3D shapes (including prisms and pyramids) ● Draw nets ● Calculate the surface area of a cuboid including by counting squares ● Calculate the volume of a cuboid | |
| Developing | <ul style="list-style-type: none"> ● Substitute integers into simple expressions and formulae ● Interpret real life graphs and conversion graphs in context ● Construct and solve one-step equations using inverses and balancing ● Solve two-step equations | <ul style="list-style-type: none"> ● Order, add and subtract negative numbers ● Add and subtract fractions with the same denominator ● Recognise prime numbers ● Find squares and square roots ● Use mental methods to add, subtract, multiply and divide ● Solve problems using addition, subtraction, multiplication and division ● Use a calculator to work out longer calculations ● Recognise and use multiples and factors ● Use divisibility tests ● Find percentages of amounts ● Find a fraction of a quantity ● Interpret scale drawings e.g. on a map ● Write a proportion as a fraction, decimal or percentage ● Convert between fractions decimals and percentages ● <i>Simplify a ratio</i> ● <i>Add and subtract fractions with the same denominator</i> | <ul style="list-style-type: none"> ● Calculate the perimeter of compound shapes ● Calculate the area of squares and rectangles by formula ● Find missing sides of simple shapes given the perimeter ● Calculate complementary, supplementary, and explementary angles ● Properties and names of triangles ● Calculating the missing angle in a triangle ● Find the surface area of a 3D shape by counting squares or drawing nets ● Reflect, rotate and translate shapes given the worded instructions ● Describe a transformation in words ● Tessellate simple shapes ● Construct triangles with SAS ● <i>Identify parts and the names of 3D shapes</i> ● <i>Convert between cm and mm</i> | <ul style="list-style-type: none"> ● Drawing and Interpreting bar charts, pie charts and frequency diagrams, including grouped data ● Problem solving questions to find averages from frequency tables ● Calculate averages and range from data including from a table ● Identify discrete and continuous data ● Using fractions and decimals to represent probability ● Introducing experimental probability ● Introducing theoretical probability ● Identify a set and complete and interpret a Venn diagram |
| Emerging | <ul style="list-style-type: none"> ● Use letters to make simple expressions ● Simplify expressions by collecting like terms or by multiplying/dividing terms ● Multiply and divide algebraic terms ● Use a formula to complete a table of values and plot a graph ● Generate sequences from patterns of shapes ● Identify and plot coordinates in all four quadrants ● Derive formulae from graphs ● Understand the connection between triangular and square numbers | <ul style="list-style-type: none"> ● Recognise and list multiples and factors ● Round to the nearest whole number or decimal places ● Using the column method to add and subtract whole numbers and decimals ● Use standard methods to multiply whole numbers ● Use written methods to solve problems including money ● Write numbers in words or figures ● Multiply and divide by 10, 100, 1000... ● Use estimates to check calculations ● Simple BIDMA questions ● <i>Use fractions to describe parts of a whole</i> ● <i>Find squares and square roots</i> ● <i>Write a ratio and simplify ratios</i> | <ul style="list-style-type: none"> ● Measure straight lines using a ruler in both cm and mm ● Choosing an appropriate metric unit from a list ● Measuring angles using a protractor ● Estimate angles ● Name types of angle ● Draw nets of 3D shapes ● Calculate the volume of a 3D shape by counting cubes ● Calculate the perimeter of simple shapes ● Identify and calculate vertically opposite angles ● Read scales | <ul style="list-style-type: none"> ● Plan a survey and collect data ● Create and interpret tally and frequency tables ● Interpret and draw line graphs. ● Interpret graphs and charts ● Calculate and evaluate mode, median, mean and range from a list and frequency tables ● Compare and use data sets ● Use words to describe probability ● Use a probability scale from 0 to 1 ● Equally likely outcomes ● Introduction to experimental probability ● Interpret Venn diagrams |