

GCSE FOUNDATION TOPICS

NUMBER
Order of operations
Multiply and divide with and without a calculator (including decimals)
Prime numbers and important number patterns (Squares, cubes etc.)
Negative number rules
Multiples, factors, and prime factors (including LCM and HCF)
Fractions, decimals and percentages with and without a calculator
Estimating and rounding errors
Powers and roots
Standard form
ALGEBRA
Simplifying/multiplying and dividing
Multiplying double brackets
Factorising and expanding brackets
Solving equations
Expressions, formulas and functions
Formulas and equations from words and diagrams
Rearranging formulas
Sequences
Inequalities
Quadratic equations
Simultaneous equations
Proof
GRAPHS
Coordinates and midpoints
Straight line graphs and drawing straight line graphs/gradients/ $y = mx + c$
Quadratic graphs/solving equations using graphs/cubic and reciprocal graphs
Solving equations using graphs
Distance-time graphs
Real life graphs
RATIO PROPORTION AND RATES OF CHANGE
Ratio and direct proportion
Inverse proportion problems
Percentages/compound growth and decay
Unit conversions
Area and volume conversions
Time intervals
Speed, density and pressure
SHAPES AND AREA
Properties of 2-D and 3-D shapes
Congruent shapes
Similar shapes
The four transformations

Perimeter and area of regular shapes and circles
Surface area of 3-D shapes
Volume of 3-D shapes
Projections
GEOMETRY
Angle basics and rules including parallel lines
Angles in polygons
Triangle construction
Loci and construction
Bearings
Maps and scale drawings
Pythagoras' theorem
Trigonometry – Sin, Cos and Tan/common values
Vectors
PROBABILITY AND STATISTICS
Probability basics
Probability experiments
The AND/OR rules
Tree diagrams
Sets and Venn diagrams
Sampling and bias
Collecting data
Mean, median, mode and range
Pie charts and Graphs
Scatter graphs
Frequency tables and grouped frequency tables
Interpreting data and comparing data sets