

# GCSE MATHEMATICS

TOPIC	1	2	3
<b>NUMBER</b>			
Types of number and BODMAS			
Multiples, factors and prime factors			
LCM and HCF			
Fractions			
Fractions, decimals and percentages			
Fractions and recurring decimals			
Rounding numbers			
Estimating			
Bounds			
Standard form			
<b>ALGEBRA</b>			
Algebra basics			
Powers and roots			
Multiplying out brackets			
Factorising			
Manipulating surds			
Solving equations			
Rearranging formulas			
The quadratic formula			
Completing the square			
Algebraic fractions			
Sequences			
Inequalities			
Graphical inequalities			
Iterative methods			
Simultaneous equations			
Proof			
Functions			
<b>GRAPHS</b>			
Straight lines and gradients			
$y = mx + c$			
Drawing straight line graphs			
Coordinates and ratio			
Parallel and perpendicular lines			
Quadratic graphs			
Solving equations using graphs			
Graph transformations			
Real life graphs			
Distance-time graphs			

Velocity-time graphs			
Gradients of real-life graphs			
<b>RATIO PROPORTION AND RATES OF CHANGE</b>			
Ratios			
Direct and indirect proportion			
Percentages			
Compound growth and decay			
Unit conversions			
Speed, density and pressure			
<b>GEOMETRY AND MEASURES</b>			
Geometry			
Polygons			
Triangles and quadrilaterals			
Circle geometry			
Congruent shapes			
Similar shapes			
The four transformations			
Area of triangles, quadrilaterals and circles			
3-D shapes, surface area and volume			
Enlargements and projections			
Triangle construction			
Loci and construction			
bearings			
<b>PYTHAGORAS AND TRIGONOMETRY</b>			
Pythagoras' theorem			
Sin cos tan			
Common values			
Sine and cosine rules			
3-D Pythagoras			
3-D Trigonometry			
Vectors			
<b>PROBABILITY AND STATISTICS</b>			
Probability basics			
Counting outcomes			
Probability experiments			
The AND / OR rule			
Tree diagrams			
Conditional probability			
Sets and Venn diagrams			
Sampling and data collection			
Mean, median, mode and range			
Frequency tables – finding averages			
Grouped frequency tables			

Box plots			
Histograms and frequency density			
Cumulative frequency			
Scatter graphs			
Other graphs and charts			
Comparing data sets			