

## Discovering mathematics (MU123) content listing

Unit 1 <i>Starting points</i>	Introduction to the module Study strategies for mathematics Brief revision of key numerical skills such as rounding, negative numbers, percentages Mathematical investigations Introduction to fractals
Unit 2 <i>Mathematical modelling</i>	Introduction to mathematical modelling Route planning including speed, distance, time calculations Creating and using formulas Using number inequalities
Unit 3 <i>Numbers</i>	Introduction to the number system Multiples, factors and primes Powers and scientific notation Rational numbers and reciprocals Irrational numbers and surds Ratio
Unit 4 <i>Statistical summaries</i>	Types of data Statistical investigations Averages and measures of spread Accuracy and precision
Unit 5 <i>Algebra</i>	Algebraic language Simplifying expressions Solving linear equations
Unit 6 <i>Graphs</i>	Interpreting graphs Gradient, intercept and equation of a straight-line graph Linear models from data
Unit 7 <i>Equations and Inequalities</i>	Changing the subject of an equation Solving equations in two unknowns Inequalities involving one variable
Unit 8 <i>Geometry</i>	Angles and Pythagoras' theorem Geometrical proof Areas and perimeters Congruency and similarity Circles Solids
Unit 9 <i>Expanding algebra</i>	Number patterns and proof Brackets and quadratic expressions Factorisation and quadratic equations Algebraic fractions and rearranging formulas
Unit 10 <i>Quadratics</i>	Parabolas and their key features Completing the square and the quadratic formula Quadratic models
Unit 11 <i>Statistical pictures</i>	Dot plots and boxplots Histograms Random numbers and variation Statistical investigations
Unit 12 <i>Trigonometry</i>	Trigonometric ratios and functions Solving triangles and equations Radians and circles
Unit 13 <i>Exponentials</i>	Growth and decay The exponential function Exponential models Logarithms
Unit 14 <i>Mathematics everywhere</i>	Consolidation of the module, particularly in algebra, geometry and trigonometry Exploration of an interesting range of uses of mathematics