

Maths Stage C Course Outline

Learning Outcome	Tier	U	E	D	S	M
Topic 1: Calculations (Core)						
LO1: To be able to use a method to solve multiplication problems	F	U	E	D	S	M
LO2: To be able to use a method to solve division problems	F	U	E	D	S	M
LO3: To be able to state a value to a required degree of accuracy <u>incl</u> significant figures	F	U	E	D	S	M
Topic 2: Algebra (Core)						
LO1: TBAT expand brackets and simplify the result	F	U	E	D	S	M
LO2: To be able to factorise expressions	F	U	E	D	S	M
Topic 3: Fractions (Core)						
LO1: To be able to use the property of fractional equivalence	F	U	E	D	S	M
LO2: To be able to convert between improper fractions and mixed numbers	F	U	E	D	S	M
LO3: To be able to add and subtract fractions <u>incl</u> different denominators	F	U	E	D	S	M
LO4: To be able to calculate a fraction of an amount	F	U	E	D	S	M
End of three topics (1,2 and 3) assessment result	out of					%
Topic 4: Area and Volume (Core)						
LO1: To be able to calculate area of compound shapes	F	U	E	D	S	M
LO2: To be able to derive and use formula for area	F	U	E	D	S	M
LO3: To be able to apply the formula for volume of a prism (excluding cylinders)	F	U	E	D	S	M
LO4: To be able to convert between units of length and volume e.g. $1\text{cm}^3 = 1\text{ml}$	F	U	E	D	S	M
Topic 5: Percentages (Core)						
LO1: Calculate a percentage of a quantity using a calculator where appropriate	F	U	E	D	S	M
LO2: Express a quantity as a percentage of an amount (with and without calculator)	F	U	E	D	S	M
LO3: To be able to state simple decimal and percentage equivalents of mixed and improper fractions	F	U	E	D	S	M
LO4: To be able to order and compare fractions, decimals and percentages	F	U	E	D	S	M
Topic 6: Algebra (Core)						
LO1: TBAT interpret simple expressions as function machines	F	U	E	D	S	M
LO2: TBAT solve simple equations with integer solutions	F	U	E	D	S	M
LO3: TBAT recognise the difference between an equation, formula and identity	F+	U	E	D	S	M
End of three topics (4,5 and 6) assessment result	out of					%
Topic 7: Graphing (Core)						
LO1: TBAT plot simple graphs of linear functions	F	U	E	D	S	M
LO2: TBAT plot simple graphs of quadratic functions e.g. $y = x^2 + a$	F	U	E	D	S	M
Topic 8: Probability (Core)						
LO1: TBAT identify when events are mutually exclusive and know the sum of these events would be 1	F	U	E	D	S	M
LO2: TBAT estimate the number of events using theoretical probability	F	U	E	D	S	M
Topic 9: Angles (Core)						
LO1: TBAT calculate angles in parallel lines	F	U	E	D	S	M
End of three topics (7,8 and 9) assessment result	out of					%
End of Stage C assessment result	out of					%

Maths Stage D Course Outline

Learning Outcome	Tier	U	E	D	S	M
Topic 1: Fractions (Core)						
LO1: To be able to add and subtract fractions with mixed numbers	F	U	E	D	S	M
Topic 2: 2D Shape (Core)						
LO1: To be able to identify and state using mathematical notation horizontal, vertical, parallel and perpendicular lines	F	U	E	D	S	M
LO2: To be able to describe quadrilaterals using their properties	F	U	E	D	S	M
LO3: To be able to identify any congruent shapes and prove for simple shapes	F	U	E	D	S	M
Topic 3: Circles (Core)						
LO1: To be able to name parts of a circle	F	U	E	D	S	M
LO2: To be able to know and use the formula for the circumference of a circle	F/F+	U	E	D	S	M
LO3: To know and be able to use the formula for the area of a circle	F	U	E	D	S	M
End of three topics (1,2 and 3) assessment result	out of					%
Topic 4: Scatter Graphs						
LO1: To be able to construct scatter graphs	F	U	E	D	S	M
LO2: To be able to interpret scatter graphs	F+	U	E	D	S	M
Topic 5: Calculations (Core)						
LO1: To be able to use BIDMAS to solve calculations with squares and 3 operations	F	U	E	D	S	M
LO2: To be able to understand the effect of multiplying or dividing by a number between 0 & 1	F	U	E	D	S	M
Topic 6: Percentages						
LO1: To be able to express a quantity as a percentage of an amount with a calculator	F	U	E	D	S	M
LO2: To be able to calculate % increase/decrease without a calculator	F	U	E	D	S	M
LO3: To be able to calculate % increase/decrease using a multiplier	F	U	E	D	S	M
End of three topics (4,5 and 6) assessment result	out of					%
Topic 7: Graphing (Core)						
LO1: To be able to plot conversion graphs in various contexts	F	U	E	D	S	M
LO2: To be able to plot and interpret graphs of real life situations	F	U	E	D	S	M
Topic 8: Algebra (Core)						
LO1: TBAT substitute into formulae (incl quadratics)	F	U	E	D	S	M
LO2: TBAT rearrange simple formulae	F	U	E	D	S	M
LO3: TBAT plot quadratic graphs in the form $y=ax^2+bx+c$ ($a = +/-$)	F	U	E	D	S	M
Topic 9: Angles (Core)						
LO1: To be able to calculate internal and external angles of regular polygons	F	U	E	D	S	M
Topic 10: Probability (Core)						
LO1: To be able to construct and use sample space diagrams	F	U	E	D	S	M
LO2: To be able to construct and use Venn diagrams	F	U	E	D	S	M
LO3: To be able to construct and use frequency tables	F	U	E	D	S	M
End of four topics (7,8,9 and 10) assessment result	out of					%
End of Stage D assessment result	out of					%

Maths Stage E Course Outline

Learning Outcome	Tier	U	E	D	S	M
Topic 1: Fractions (Core)						
LO1: To be able to multiply fractions	F	U	E	D	S	M
LO2: To be able to divide fractions	F	U	E	D	S	M
Topic 2: Percentages (Core)						
LO1: To be able to calculate percentage change	F	U	E	D	S	M
LO2: To be able to calculate successive percentages	F+	U	E	D	S	M
Topic 3: Bearings						
LO1: To be able to measure and use bearings to describe direction	F	U	E	D	S	M
LO2: To be able to calculate bearings	F	U	E	D	S	M
End of three topics (1,2 and 3) assessment result	out of					%
Topic 4: Probability (Core)						
LO1: To be able to calculate the probability of successive independent events	F+	U	E	D	S	M
LO2: To be able to use and apply an understanding of experimental probability	F/F+	U	E	D	S	M
Topic 5: Averages and spread						
LO1: To be able to interpret the averages and spread of data sets	F	U	E	D	S	M
LO2: To be able to calculate averages from frequency tables (not grouped)	F	U	E	D	S	M
Topic 6: Pie charts						
LO1: To be able to construct pie charts	F	U	E	D	S	M
LO2: To be able to interpret pie charts	F	U	E	D	S	M
End of three topics (4,5 and 6) assessment result	out of					%
Topic 7: Area and volume (Core)						
LO1: To be able to calculate lengths and areas of parts of circles	F	U	E	D	S	M
LO2: To be able to calculate the volume of a cylinder	F	U	E	D	S	M
LO3: To be able to calculate the surface area of a cuboid	F	U	E	D	S	M
Topic 8: Ratio and proportion (Core)						
LO1: To be able to use knowledge of direct proportion to solve problems in context (unitary)	F	U	E	D	S	M
LO2: To be able to use knowledge of indirect proportion to solve problems in context (unitary)	F	U	E	D	S	M
LO3: To be able to divide a quantity into two or more parts and solve problems involving ratio	F	U	E	D	S	M
Topic 9: Properties of numbers (Core)						
LO1: To be able to use prime factors	F	U	E	D	S	M
LO2: To be able to find the HCF and LCM of two numbers using Venn diagrams	F	U	E	D	S	M
End of three topics (7,8 and 9) assessment result	out of					%
End of Stage E assessment result	out of					%

Maths Stage F Course Outline

Learning Outcome	Tier	U	E	D	S	M
Topic 1: Fractions (Core)						
LO1: To be able to calculate BIDMAS problems with fractions incl. negative and mixed numbers	F	U	E	D	S	M
Topic 2: Sequences						
LO1: To be able to find and apply the nth term of a linear sequence	F	U	E	D	S	M
LO2: To be able recognise and continue geometric sequences r^n where n is an integer and r is a rational number	F	U	E	D	S	M
Topic 3: Averages and spread						
LO1: To be able to calculate averages and spread from grouped frequency tables	F	U	E	D	S	M
End of three topics (1,2 and 3) assessment result	out of					%
Topic 4: Time Series Data						
LO1: To be able to interpret tables for time series data	F+	U	E	D	S	M
LO2: To be able to construct and interpret tables for time series graphs	F+	U	E	D	S	M
Topic 5: Constructions						
LO1: To be able to construct a triangle ($\pm 1\text{mm}$, $\pm 2^\circ$)	F+	U	E	D	S	M
LO2: To be able to use straight edge and compasses to draw lines accurately	F+	U	E	D	S	M
LO3: To be able to find the locus of a point that moves according to a rule	F+	U	E	D	S	M
Topic 6: Transformations						
LO1: To be able to state the order of rotational symmetry	F	U	E	D	S	M
LO2: To be able to transform a shape where the image is congruent to the object	F	U	E	D	S	M
LO3: To be able to describe a transformation where the image is congruent to the object	F	U	E	D	S	M
End of three topics (4,5 and 6) assessment result	out of					%
Topic 7: Algebra (Core)						
LO1: TBAT expand double brackets and simplify the result	F+	U	E	D	S	M
Topic 8: Enlargements						
LO1: To be able to enlarge a shape (incl fractional and negative scale factors)	F/F+/H	U	E	D	S	M
Topic 9: Units of measure and dimensions						
LO1: To be able to convert between metric units for dimensions	F	U	E	D	S	M
LO2: To be able to use compound measures in calculation	F+	U	E	D	S	M
Topic 10: 3D Shape						
LO1: To be able to draw and interpret a 2D representation of a 3D shape	F	U	E	D	S	M
End of four topics (7,8,9 and 10) assessment result	out of					%
End of Stage F assessment result	out of					%

Maths Stage G Course Outline

Learning Outcome	Tier	U	E	D	S	M
Topic 1: Indices						
LO1: To be able to know and use the laws of indices, with integer indices	F+	U	E	D	S	M
LO2: To be able to know and use the laws of indices, with fractional indices	F+	U	E	D	S	M
Topic 2: Solving equations and inequalities (Core)						
LO1: TBAT solve equations with unknowns on both sides including brackets	F+	U	E	D	S	M
LO2: TBAT solve a quadratic equation by factorising where $a = 1$	F+	U	E	D	S	M
LO3: TBAT solve inequalities and express the solution in the required form	F+	U	E	D	S	M
Topic 3: Pythagoras' Theorem						
LO1: To be able to use Pythagoras' theorem in right-angled triangles (2D problems)	F+	U	E	D	S	M
LO2: To apply Pythagoras' theorem in context	F+	U	E	D	S	M
End of three topics (1,2 and 3) assessment result	out of					%
Topic 4: Surface Area (Core)						
LO1: To be able to calculate the surface area of a cuboid	F+	U	E	D	S	M
LO2: To know and be able to apply the formulae to calculate the surface area of prisms	F+	U	E	D	S	M
LO3: To know and be able to apply the formulae to calculate the surface area of pyramids and cones	F+	U	E	D	S	M
LO4: To know and be able to apply the formulae to calculate the surface area of spheres	F+	U	E	D	S	M
LO5: TBAT calculate surface area of composite solids	F+	U	E	D	S	M
Topic 5: Volume (Core)						
LO1: To be able to know and apply the formulae to calculate the volume of a pyramids and cones	F+	U	E	D	S	M
LO2: To be able to know and apply the formulae to calculate the volume of a sphere	F+	U	E	D	S	M
LO3: To be able to calculate the volume of composite solids	F+	U	E	D	S	M
Topic 6: Standard Form						
LO1: To be able to express very big and very small numbers in a more efficient way	F	U	E	D	S	M
LO2: To be able to solve problems calculating with numbers expressed in standard form	F	U	E	D	S	M
End of three topics (4,5 and 6) assessment result	out of					%
Topic 7: Probability (Core)						
LO1: To be able to calculate the probability of successive dependent events (not replacing)	F	U	E	D	S	M
Topic 8: Straight Line Graphs (Core)						
LO1: TBAT solve problems involving straight line knowing the general form $y = mx + c$	F+	U	E	D	S	M
End of two topics (7 and 8) assessment result	out of					%
End of Stage F assessment result	out of					%

Maths Stage H Course Outline

Learning Outcome	Tier	U	E	D	S	M
Topic 1: Graphing (Core)						
LO1: TBAT interpret and sketch graphs of quadratics	F+	U	E	D	S	M
LO2: TBAT plot and interpret graphs of cubics	F+	U	E	D	S	M
LO3: TBAT plot and interpret graphs of the reciprocal function	F+	U	E	D	S	M
LO4: TBAT interpret and sketch graphs of real life graphs	F+	U	E	D	S	M
Topic 2: Trigonometry						
LO1: To know and use the trigonometric ratios SOH/CAH/TOA in right angled triangles	F+	U	E	D	S	M
LO2: To be able to apply the trigonometric ratios in context	F+	U	E	D	S	M
LO3: To know the exact values of the trigonometric ratios	F+	U	E	D	S	M
End of three topics (1,2 and 3) assessment result	out of					%
Topic 3: Shape (Core)						
LO1: To be able to use congruence and similarity	F+	U	E	D	S	M
LO2: To be able to calculate the volume of frustums	F+	U	E	D	S	M
Topic 4: Simultaneous Equations (Core)						
LO1: To be able to solve simultaneous equations with unknowns on both sides, including brackets	F+	U	E	D	S	M
Topic 5: Percentages (Core)						
LO1: To be able to use percentages to calculate growth and decay	F/F+	U	E	D	S	M
Topic 6: Vectors						
LO1: Solve simple geometrical problems in 2-D using vectors, including use of the commutative and associative properties of vector addition.	F	U	E	D	S	M
End of three topics (4,5 and 6) assessment result	out of					%
End of Stage H assessment result	out of					%