Maths Skills Year 10	Emerging	Developing	Securing	Mastering
Place Value and Indices	To use metric units; 4 operations with negatives; x and ÷ by negative powers of 10; prime factors	To use indices; positive integer powers and roots; LCM and HCF through prime factors; related calculations	To use negative integer powers; standard form	To calculate fractional powers; surds
Algebra Manipulation	To form expressions; expanding brackets	To use expressions with index notation; function notation; subtracting a bracket; factorising into a single bracket; proof	To expand and factorising quadratics; difference of two squares; quadratic graphs	To expand more complex brackets; completing the square; quadratic formula; algebraic fractions
Angles	To calculate angles on parallel and perpendicular lines; angles in polygons; properties of 2D shapes; bearings	To use Pythagoras' theorem; constructions; congruency; proof	To calculate using trigonometry in right -angled triangles	To use circle theorems; trigonometry in non -right - angled triangles; Pythagoras and trigonometry in 3D
Solving Equations	To solve linear equations with brackets; rearrange simple formulae	Form and solve linear equations involving simple fractions; solve linear equalities	Solve linear equations with fractions that require + or –; solve simultaneous equations using elimination	To use linear/quadratic/simultaneous equations/formulae/inequalities requiring complex manipulation to solve/rearrange; inverse functions
Perimeter, Area and Volume	To use circle terminology; area and circumference of a circle; area and perimeter problems	To calculate volume and surface area of prisms and cylinders	To calculate arc length; sector area; volume of spheres/pyramids/cones; area/volume unit conversion	To calculate segment area; problems involving volume and surface area of cones; surface area and volume of similar solids
Ratio and Proportion	To use unitary method; percentage of an amount; direct proportion; scale drawing	To calculate % increase/decrease/change (including compound interest); reverse %; indirect proportion	To find exponential growth and decay	To use proportion equations and graphs; ratio equations; tangents and rates of change
Probability	To use sample space diagrams; possibility trees; mutually exclusive outcomes; probability of complements	To calculate relative frequency; probability notation; frequency trees; probability trees; Venn diagrams	To combine probabilities; set notation; tree diagrams	To use conditional probability

Maths Skills Year 11	Emerging	Developing	Securing	Mastering
Place Value and Indices	To use indices; positive integer powers and roots; LCM and HCF through prime factors; related calculations	To use negative integer powers; standard form	To calculate fractional powers; surds	To calculate more complex powers; surds
Algebra Manipulation	To use expressions with index notation; function notation; subtracting a bracket; factorising into a single bracket; proof	To expand and factorising quadratics; difference of two squares; quadratic graphs	To expand more complex brackets; completing the square; quadratic formula; algebraic fractions	To complete harder expanding and factorising; identities and proof; factor theorem; algebraic fractions; limiting values of fractional sequences
Angles	To use Pythagoras' theorem; constructions; congruency; proof	To calculate using trigonometry in right -angled triangles	To use circle theorems; trigonometry in non -right - angled triangles; Pythagoras and trigonometry in 3D	To use trigonometric identities and graphs; coordinate geometry; differentiation of polynomials
Solving Equations	Form and solve linear equations involving simple fractions; solve linear equalities	Solve linear equations with fractions that require + or –; solve simultaneous equations using elimination	To use linear/quadratic/simultaneous equations/formulae/inequalities requiring complex manipulation to solve/rearrange; inverse functions	To use linear, quadratic and simultaneous formulae/equations/inequalities requiring complex manipulation to solve/rearrange; inverse functions
Perimeter, Area and Volume	To calculate volume and surface area of prisms and cylinders	To calculate arc length; sector area; volume of spheres/pyramids/cones; area/volume unit conversion	To calculate segment area; problems involving volume and surface area of cones; surface area and volume of similar solids	To solve equations of circles; solve trigonometric equations; applications of differentiation
Ratio and Proportion	To calculate % increase/decrease/change (including compound interest); reverse %; indirect proportion	To find exponential growth and decay	To use proportion equations and graphs; ratio equations; tangents and rates of change	
Probability	To calculate relative frequency; probability notation; frequency trees; probability trees; Venn diagrams	To combine probabilities; set notation; tree diagrams	To use conditional probability	