Key Stage 4 Curriculum Map 2021-22

Year 11- Term 1

Subject: IGCSE Further Pure Mathematics		Year: 11	
Focus/Topic		**HPL Links**	**Home Learning / Guided Reading**
Chapter 1: Surds and Logarithmic Functions			**From the text book**
Simplifying surds, Rationalising the denominator, Exponential and log functions and their graphs Graphical solution to equations, laws of logarithms, change of base of logs, equations with exponential functions.		**Hardworking Linking Analysing**	
Chapter 2: The Quadratic Function			
Factorising and solving quadratic equations, sketching Quadratic functions, the discriminant of a quadratic equation, roots of quadratic equations (α and β) creating new equations with roots as functions of α and β.		**Hardworking Linking Analysing**	**Assessed Home Learning Roots of equations** **Assessed Home Learning Quadratic function**
Mid Term Break			
Chapter 3: Inequalities and Identities			
Simultaneous Equations, Linear Inequalities, Quadratic Inequalities, Linear Programming, Polynomial Long Division, Factor Theorem, Remainder Theorem.		**Hardworking Linking Analysing**	**Assessed Home Learning Chapter 3**
Chapter 4: Sketching Polynomials			
Cubic Graphs, Reciprocal Graphs, Graphical solutions to pairs of Equations, Transformation of Functions (graphical representation).		**Hardworking Linking Analysing**	
Chapter 5: Sequences and Series			
Arithmetic Sequences, Arithmetic Series, Summation of Series, Geometric Sequences, Geometric Series, Convergent Series, Sum to Infinity of Geometric Series.		**Hardworking Linking Analysing**	
Chapter 6: The Binomial Series			
Expand $(1 + x)^n$ where n is a Rational Number, validity of A binomial Expansion.		**Hardworking Linking Analysing**	

Term 2

Subject: IGCSE Further Pure Mathematics		Year: 11	
Focus/Topic		**HPL Links**	**Home Learning / Guided Reading**
Chapter 7: Scalar and Vector Quantities			
Vector notation and diagrams, Vector arithmetic, Unit vectors, Position vectors, Vector Geometry, magnitude of a vector, vector components.		**Hardworking Linking Analysing**	
Chapter 8: Rectangular Cartesian Coordinates			
Gradient of a straight line, Equation of a Straight Line, Parallel and Perpendicular Lines, Distance between two points on a line, Dividing a line in a given ratio.		**Hardworking Linking Analysing**	**Assessed Home Learning**
Mid Term Break			
Chapter 9: Differentiation			
Finding the gradient function, algebraic differentiation of polynomials, Chain Rule, e^{ax}, $\sin ax$, $\cos ax$, Product Rule, Quotient Rule, finding the equations of Tangent and Normal to a curve, stationary points, maxima and minima, Problem solving.		**Hardworking Linking Analysing**	**Assessed Home Learning Stationary points** **Assessed Home Learning Chain, Product and Quotient rules**
Chapter 10: Integration			
Reverse of differentiation, Calculus and Kinematics, Area under a graph, Volume of Revolution, Connected Rates of change.		**Hardworking Linking Analysing**	**Assessed Home Learning Integration and Kinematics** **Assessed Home Learning Area under a curve** **Assessed Home Learning Connected rates of change**
Chapter 11: Trigonometry			
Radian Measure, Arc length and Sector Area, Graphs of sine, cos and tan, Sine Rule, Cosine Rule, 3D problems, $\tan\vartheta = \frac{\sin\theta}{\cos\theta}$, $\sin^2\vartheta + \cos^2\vartheta = 1$, proving Trig identities, solving trig equations,		**Hardworking Linking Analysing**	
Revision and Practice			