Learning Programme – Mathematics – 5th Year – Set 1

Topic/ Content	Objectives/Skills (topic grade in brackets)	Homework	Assessment	Success Criteria (GCSE grades)	Stretch & Challenge (Thirst for Learning)
	Michaelmas Second Half Term – Further Maths				
Differentiation	Differentiating simple polynomial expressions with positive and negative integer powers. Notation and nomenclature associated with differentiation; gradient, dy/dx, f'(x).	Two to three teacher marked pieces of homework will be set each half-term.	December mock examination – three full GCSE papers	Determined from December mock examination. GCSE Grade boundaries dependent on the particular mock papers.	Students will be challenged using extension questions on the topics they are studying, designed to develop their ability to solve multi-staged problems.
	Differentiation to find the gradient of a curve at a point. Finding a point on a curve with a given gradient. Equation of the tangent at a given point. Equation of the normal at a given point.				
	Finding stationary points of quadratic and cubic functions. Find the range of x values for increasing and decreasing functions. Basic curve sketching showing stationary points and y intercept.				
	Differentiate twice to find the rate of change of gradient and to find the nature of stationary points (points of inflection not included). Notation associated with second derivatives; d^2y/dx^2, f''(x).				
Matrices	Add, subtract and multiply matrices. Multiply a matrix by a scalar value.				
	Matrix transformations, including applying matrix transformations to shapes, rotations, reflections and enlargements. Linking combined matrix transformations with matrix multiplication.				