Maths- Y12A

HALF TERM 1 SEPT - OCT	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
TOPIC (S):-Pure **:-Statistics**	Algebraic manipulation, quadratic equations and simultaneous equations. Statistical Sampling	Algebraic manipulation, quadratic equations and simultaneous equations Statistical Sampling	Graphs, Linear and quadratic inequalities. Statistical Sampling	Straight Lines and Circles Data presentation and interpretation	Straight Lines and Circles Data presentation and interpretation	Binomial Expansion Data presentation and interpretation	Revision and Assessment for Pure and Statistics modules
Knowledge & Skills development	*Pure* *Statistics*	Understand and use the laws of indices for all rational exponents. Use and manipulate surds, including rationalising the denominator. Work with quadratic functions and their graphs; the discriminant of a quadratic function, including the conditions for real and repeated roots; completing the square; solution of quadratic equations including solving quadratic equations in a function of the unknown. Solve simultaneous equations in two variables by elimination and by substitution, including one linear and one quadratic equation. Manipulate polynomials algebraically, including expanding brackets and collecting like terms, factorisation and simple algebraic division; use of the factor theorem. **Straight Lines and Circles** Students should: Be able to solve problems using gradients, midpoints and the distance between two points, including the form $y = mx + c$ and the forms $y = a$ and $x = a$ for horizontal and vertical lines, and know that the product of the gradients of two perpendicular lines is -1. To find the equation of a tangent or normal at a point, and find relevant gradients using the coordinates of appropriate points. Note: implicit differentiation will not be required at AS. Understand and use the terms 'population' and 'sample'. Use samples to make informal inferences about the population. Understand and use sampling techniques, including simple random sampling and opportunity sampling Select or review sampling techniques in the context of solving a statistical problem, including understanding that different samples can lead to different conclusions about the population.					
Assessment / Feedback Opportunities	Topic assessments	Self-assessment sheets	Homework	Formative teacher assessment - verbal	Retrieval practice		

Cultural Capital		Tolerance and respect for peers and mathematicians Democracy: allowing all to speak and voice views
SMSC / Promoting British Values **(Democracy, Liberty, Rule of Law, Tolerance & Respect)**		Tolerance and respect for peers and mathematicians Democracy: allowing all to speak and voice views
Reading opportunities		• Fermat's Last Theorem • History of computer programming • History of Florence Nightingale
Key Vocabulary		Indices,Surds,Manipulate,Rationalise,Factorise,discriminant,Population,sample,Magnitude,Forces
Digital Literacy		Demos for graphing. Geogebra.
Careers		Engineer, Statistician, Business- manager, Market research. Computer Programmer, Video game development.