KS5 Year 12

<table>
<tr><th>Autumn Term</th><th>Spring Term</th><th>Summer Term</th></tr>
<tr><td colspan="2">Key knowledge: Year 12 begin their A-levels.

<u>Teacher 1 (6 lessons)</u>
Polynomials
Binomial theorem
Algebraic Division
Curve sketching
Differentiation
Tangents and normals
Turning points
Integration
Area under the curve

<u>Teacher 2 (4 lessons)</u>
Arguments and proofs
Laws of indices
Surds
Quadratic functions
Equations of lines and circles
Inequalities
Trigonometric identities
Sine and cosine rules
Laws of Logarithms
Exponential functions
Curve fitting</td><td colspan="2">Key knowledge:

<u>Teacher 1 (6 lessons)</u>
Vector
i and j notation
Kinematics
graphing motion
equations of constant acceleration
motion with variable acceleration
Forces
Force system dynamics
motion under gravity
Newton’s Laws of motion

<u>Teacher 2 (4 lessons)</u>
Large data set
averages
histograms
sampling techniques
central tendency and spread
Bivariate data
Probability
Binomial distribution
hypothesis testing under the binomial distribution</td><td colspan="2">Key knowledge:

<u>Teacher 1 & 2</u>
Revision of all topics using previous and practice exam questions for AS level
If time permits then commencement of the year 13 scheme of work</td></tr>
<tr><td>Pupils will be able to:
Pupils will be able to answer AS level questions on all the topics above</td><td>Key Attributes for Success:
Perseverance. Marking answers. Correcting errors. Marking corrections. Asking your teacher for help. Seeking help outside of lessons. Seeking help on the processes. Revisiting topics independently</td><td>Pupils will be able to:
Pupils will be able to answer AS level questions on all the topics above</td><td>Key Attributes for Success:
Perseverance. Marking answers. Correcting errors. Marking corrections. Asking your teacher for help. Seeking help outside of lessons. Seeking help on the processes. Revisiting topics independently</td><td>Pupils will be able to:
Pupils will be able to answer AS level questions on all the topics from the previous year</td><td>Key Attributes for Success:
Perseverance. Marking answers. Correcting errors. Marking corrections. Asking your teacher for help. Seeking help outside of lessons. Seeking help on the processes. Revisiting topics independently</td></tr>
<tr><td colspan="2">Assessment:
There will be an assessment around Christmas. Teachers can also use discretion and inform pupils of other end of topic assessments if needed, including a prerequisite test</td><td colspan="2">Assessment:
There will be an assessment in March. Teachers can also use discretion and inform pupils of other end of topic assessments if needed, including a prerequisite test</td><td colspan="2">Assessment:
There will be an assessment around May Half term. Teachers can also use discretion and inform pupils of other end of topic assessments if needed, including a prerequisite test</td></tr>
<tr><td colspan="2">Enrichment Opportunities:
Maths Inspiration Trip
Math’s Club (Tue after school)
Thursday work club after school with Mr Jackson</td><td colspan="2">Enrichment Opportunities:
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KS5 Year 13

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<tr><td colspan="2">Key knowledge:
<u>Teacher 2 (6 lessons)</u>
Proof by contradiction
Functions
Parametric equations
Algebraic fractions
Partial Fractions
3D vectors
Differentiation of trig functions, logs and exponentials
Product and quotient rule
chain rule
inverse functions
implicit differentiation
parametric differentiation
integration of trig functions, logs and exponentials
Integration by parts and substitution
Integration of algebraic fractions
Differential equations

<u>Teacher 2 (4 lessons)</u>
Binomial series
Arithmetic sequences
Geometric sequences
Radians
Reciprocal trig
Inverse trig
compound angles
equivalence in compound angles
Simple root finding
Iterative root finding
Newton-Raphson root finding
numerical integration
Trapezium rule</td><td colspan="2">Key knowledge:
<u>Teacher 2 (6 lessons)</u>
Motion in 2 dimensions with constant acceleration
motion in 3 dimensions with constant acceleration
Motion under gravity
Motion under forces
Static systems
Dynamic systems
Moments

<u>Teacher 2 (4 lessons)</u>
Conditional Probability
Probability models
Normal distributions
Approximating the binomial distribution from the normal
Testing correlations
Testing on a normal distribution

<u>Both</u>
Revision of all topics using previous and practice exam questions for A-level including use of past papers and practice papers.</td><td colspan="2">Key knowledge:
<u>Teacher 1 & 2</u>
Revision of all topics using previous and practice exam questions for A-level including use of past papers and practice papers.</td></tr>
<tr><td>Pupils will be able to:
Answer AS and A-Level questions on all year 12 and the above topics</td><td>Key Attributes for Success:
Perseverance. Marking answers. Correcting errors. Marking corrections. Asking your teacher for help. Seeking help outside of lessons. Seeking help on the processes. Revisiting topics independently</td><td>Pupils will be able to:
Answer AS and A-Level questions on all year 12 and the above topics</td><td>Key Attributes for Success:
Perseverance. Marking answers. Correcting errors. Marking corrections. Asking your teacher for help. Seeking help outside of lessons. Seeking help on the processes. Revisiting topics independently</td><td>Pupils will be able to:
Complete past papers fully and be able to recognise common question patterns and what they can do with them.</td><td>Key Attributes for Success:
Perseverance. Marking answers. Correcting errors. Marking corrections. Asking your teacher for help. Seeking help outside of lessons. Seeking help on the processes. Revisiting topics independently</td></tr>
<tr><td colspan="2">Assessment:
There will be an assessment around half term on pure maths, focusing on the material covered this year but also including year 12 pure maths</td><td colspan="2">Assessment:
There will be an assessment around March Covering all of the topics from both years.</td><td colspan="2">Assessment:
Pupils will sit their A-levels. Good luck</td></tr>
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