END OF KEY STAGE 4

GCSE Mathematics grade 4 or higher is usually required for progression onto studying for an advanced (level 3) maths qualification, such as Core Maths or A Level Mathematics. Most schools and colleges in England require at least a grade 6 for entry to an A Level Mathematics course

YEAR 12 AUTUMN

Pure:
Problem Solving
Proof
Surds and Indices
Quadratic Functions –
Equations and Inequalities
Polynomials
Trigonometry
Vectors
Graphs and transformations
The Binomial Expansion.

Statistics:
Data Collection
Data processing, presentation and Interpretation

Mechanics:
Kinematics

YEAR 12 SPRING

Pure:
Differentiation –
Integration
Coordinate Geometry
Exponentials and Logarithms

Statistics:
Probability
The Binomial distribution
Statistical hypothesis testing using the binomial distribution.

Mechanics:
Forces and Newton's Laws of motion
Variable acceleration

YEAR 12 SUMMER

Pure:
Sequences and Series
Trigonometry
Trigonometric functions
Algebra

Statistics:
Probability
Probability Distributions

YEAR 13 AUTUMN

Pure:
Functions
Proof
Trigonometric identities
Differentiation
Further Differentiation
Vectors
Numerical Methods

Mechanics:
Kinematics
Force and Motion
Friction

YEAR 13 SPRING

Pure:
Integration
Parametric equations
Differential Equations

Statistics:
Hypothesis testing

Mechanics:
Projectiles
Moments

YEAR 13 SUMMER

Revision

A-level examination

All of the skills learnt in the first year are built upon and allow us to develop the higher concepts in the second year of the A-Level course. The content of the first year allows students to sit the AS-Level maths exam at the end of year 12, if they choose.

KNOWLEDGE TRANSFER

BEYOND YEAR 13

A level Mathematics is the most popular of all A levels taken in England. Young people recognise that it's a highly desirable qualification that can help them achieve their aspirations for further study and their future career.
Studying A level Mathematics helps students develop a logical approach to problem solving, as well as developing their mathematical knowledge and skills, so it's valuable preparation for a wide range of degree courses. For many STEM and economics degree courses, A level Mathematics is an essential pre-requisite. For others, such as geography and finance, studying A level Mathematics is very useful, as it helps to keep students' mathematical skills fresh, and it prepares them for the maths they'll encounter during the course.

UNIVERSITY COLLEGIATE SCHOOL

CURRICULUM ROAD MAP

A LEVEL MATHEMATICS

UNIVERSITY COLLEGIATE SCHOOL

QUEST

EMPLOYER ENGAGEMENT LINKS

A LEVEL MATHEMATICS

Accounting technician
Actuary
Air traffic controller
Civil engineer
Commodity Trading Adviser
Criminologist
Data analyst-statistician
Electrical engineer
Financial adviser
Investment analyst
Maths Teacher
Operational Researcher
Software developer
Stockbroker
Acoustics consultant
Aerospace engineer
Bank manager
Computer Scientist
Credit controller
Cyber intelligence officer
Economist
Finance officer
Insurance underwriter
Management Consultant
Meteorologist
Research scientist
Statistician

YEAR 12 AUTUMN

Accounting technician
Actuary
Air traffic controller
Civil engineer
Commodity Trading Adviser
Criminologist
Data analyst-statistician
Electrical engineer
Financial adviser
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Maths Teacher
Operational Researcher
Software developer
Stockbroker
Acoustics consultant
Aerospace engineer
Bank manager
Computer Scientist
Credit controller
Cyber intelligence officer
Economist
Finance officer
Insurance underwriter
Management Consultant
Meteorologist
Research scientist
Statistician

YEAR 12 SPRING

Accounting technician
Actuary
Air traffic controller
Civil engineer
Commodity Trading Adviser
Criminologist
Data analyst-statistician
Electrical engineer
Financial adviser
Investment analyst
Maths Teacher
Operational Researcher
Software developer
Stockbroker
Acoustics consultant
Aerospace engineer
Bank manager
Computer Scientist
Credit controller
Cyber intelligence officer
Economist
Finance officer
Insurance underwriter
Management Consultant
Meteorologist
Research scientist
Statistician

YEAR 12 SUMMER

A level Mathematics is a requirement for certain degree courses, such as Engineering, Physics, Statistics, and often Economics. Although not a requirement, A level Mathematics is a typical subject taken by students on courses as wide ranging as Architecture, Law and Psychology.
A level Mathematics is useful for those interested in apprenticeships in Accounting, Engineering, Teaching and Technology.

YEAR 13 SUMMER

Accounting technician
Actuary
Air traffic controller
Civil engineer
Commodity Trading Adviser
Criminologist
Data analyst-statistician
Electrical engineer
Financial adviser
Investment analyst
Maths Teacher
Operational Researcher
Software developer
Stockbroker
Acoustics consultant
Aerospace engineer
Bank manager
Computer Scientist
Credit controller
Cyber intelligence officer
Economist
Finance officer
Insurance underwriter
Management Consultant
Meteorologist
Research scientist
Statistician

YEAR 13 SPRING

Accounting technician
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Air traffic controller
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Acoustics consultant
Aerospace engineer
Bank manager
Computer Scientist
Credit controller
Cyber intelligence officer
Economist
Finance officer
Insurance underwriter
Management Consultant
Meteorologist
Research scientist
Statistician

YEAR 13 AUTUMN

Q. What are the industry application(s) for this knowledge/concept(s)?

UNIVERSITY COLLEGIATE SCHOOL

QUEST

DIGITAL ACTIVITY LINKS

A LEVEL MATHEMATICS

YEAR 12 AUTUMN

- Integral Maths
- AMSP
- MEI
- Underground Maths
- Geogebra
- Desmos
- Dr. Frost Maths
- TL Maths
- Nrich
- e16plus Newsletter
- Plus Magazine
- Classwiz Calculator
- YouTube "The Calculator Guide"
- YouTube

YEAR 12 SPRING

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YEAR 13 AUTUMN

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UNIVERSITY COLLEGIATE SCHOOL

QUEST

SPECIFICATION REFENCES

A LEVEL MATHEMATICS

OCR (B) MEI H630

Pure
OT1.1 to OT3.5
Mp1 to Mp2
Ma1 to Ma14
Mf1 to Mf2
Mt1 to Mt7
Mv1 to Mv6
MC1 to MC7
Ms1 to Ms2

Statistics
MD1 to MD14

Mechanics
Mk1 to Mk4 and part Mk7 to Mk 8

YEAR 12 AUTUMN

OCR (B) MEI H630

Pure
Mc1 to Mc 9
Mc19 to Mc23
Mg1 to Mg11
ME1 to ME11

Statistics
Mu1 to Mu3
MR1 to MR7
MH1 to MH6

Mechanics
MF1 to MF5 and Mn1 to Mn6
Mk5 to Mk6 and part Mk7 and Mk8

YEAR 12 SPRING

OCR (B) MEI H640

Pure
Ms6 toMs17
Mt8 to Mt15
Ma 15 to Ma16

Statistics
Mu4 to Mu7
MR8 to MR13

Mechanics

YEAR 12 SUMMER

OCR (B) MEI H640

Pure

Statistics

Mechanics

YEAR 13 SUMMER

OCR (B) MEI H640

Pure
M24 to Mc30
Mg12 to Mg16
Mc31 to Mc33

Statistics
MH7 to MH11

Mechanics
My1 to My5
MF13 to MF16

YEAR 13 SPRING

OCR (B) MEI H640

Pure
Mf3 to Mf8
MC8 to MC9
Mp3
Mt16 to Mt21
Mc10 to Mc18
Mv7
Me1 to Me6

Statistics

Mechanics
Mk9 to Mk12
Mf6 to Mf9 and Mn7
MF10 to MF12

YEAR 13 AUTUMN