

Year 11 and 12 ATAR Mathematics



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Options?

Applied:

- Essential Mathematics

General:

- General Mathematics
- Mathematical Methods
- Specialist Mathematics



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How do the new subjects align with the old?

**Prevocational
Maths**



Essential Maths

Maths A



General Maths

Maths B



Maths Methods

Maths C



Specialist Maths

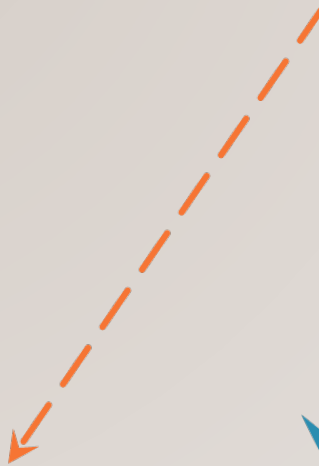


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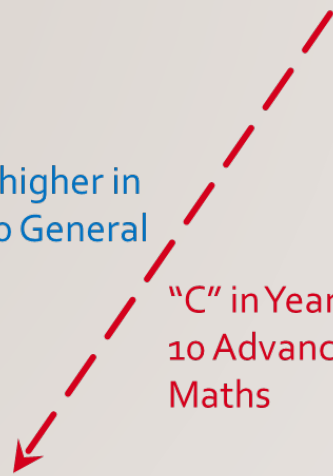
**Foundation
Mathematics**

**General
Mathematics**

**Advanced
Mathematics**



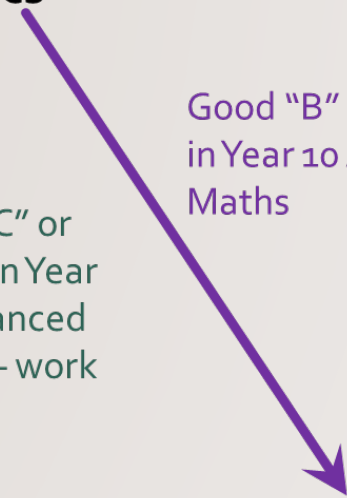
"C" or higher in
Year 10 General
Maths



"C" in Year
10 Advanced
Maths



Good "C" or
higher in Year
10 Advanced
Maths – work
ethic!



Good "B" or higher
in Year 10 Advanced
Maths

Essential Maths

General Maths

Maths Methods

Specialist Maths

Must select ONE of these

YEAR LONG SUBJECTS!!!

**Elective – must
select Maths
Methods**



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Essential Mathematics – Applied subject

Practical and real life context. Strengthens on concepts learnt up to Year 10.

- **Number** – ratios, rates, percentages
- **Data** – classification, collection methods, bias, data presentation and interpretation, summarising and comparing data
- **Graphs** – reading, drawing and interpreting graphs
- **Managing Money** – earning money, superannuation, tax, budgeting
- **Time and Motion** – time, distance, speed
- **Measurement** – geometry, unit conversion, perimeter, area, volume, mass
- **Scales, plans and models** – scale drawings, Pythagoras' Theorem, simple trigonometry
- **Bivariate graphs** – Cartesian plane, scatterplots, line of best fit
- **Probability and relative frequencies** – simulations, simple probabilities
- **Loans and interest** – compound interest, reducing balance loans



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General Mathematics

Life-related mathematics. Develop skills which affect your everyday life.

- **Consumer arithmetic** – wages and payments, budgets, bank interest, investments, exchange rates
- **Shape and measurement** – perimeter, area and volume and scale
- **Linear equations and their graphs** – solving equations, graphing
- **Applications of trigonometry** – applications using trig ratios and sine and cosine rules
- **Algebra and Matrices** – substitution and rearrangement, simple matrix calculations
- **Univariate data analysis** – graphing, measures of centrality and spread
- **Bivariate data analysis** – two-way tables, graphing
- **Time series analysis** – graphs involving time
- **Growth and decay in sequences** – arithmetic and geometric sequences
- **Earth geometry and time zones** – latitude and longitude, distance and angle between two places on the Earth, time zones
- **Loans, investments and annuities** – bank loan calculations
- **Graphs and networks** – construct networks and adjacency graphs, optimisation
- **Networks and decision mathematics** – project networks and trees, optimisation



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Mathematical Methods

Life-related and abstract mathematics. Raise mathematical competency and build the basis for further study in careers requiring mathematics.

- **Arithmetic and geometric sequences and series** - growth and decay
- **Functions and Graphs** –functions, polynomials, relations and inverse proportions
- **Counting and probability** – probability notation, conditional probability and binomial expansion
- **Exponential functions** – index laws, solve exponential functions
- **Logarithmic functions** –solve logarithmic functions, solve problems using logarithmic laws
- **Trigonometric functions** –radians, solve trigonometric functions, sine and cosine rules
- **Differential calculus** –differentiation of exponential, logarithmic and trigonometric functions
- **Integration** –solve integral problems, trapezoidal rule, area under the curve, applications
- **Discrete random variables** – use discrete random variables to solve practical problems, Bernoulli distributions, binomial distributions
- **Continuous random variables and the normal distribution** – probabilities, compare samples, normal distributions
- **Interval estimates for proportions** – bias, distribution types, sample proportions, confidence intervals



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Specialist Mathematics

Life-related and abstract mathematics. Raise mathematical competency and build on the concepts learnt in Mathematical Methods. Students learn to appreciate the power of mathematics and understand the role it plays in modelling the world's environment

- **Combinatorics**
- **Vectors**
- **Proof**
- **Complex numbers**
- **Trigonometry and functions**
- **Matrices**
- **Integration and applications**
- **Rates of Change and differential equations**
- **Statistical Inference**



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Assessment

Year 11: Units 1 and 2

Essential Maths – two problem solving tasks, two exams – one for each unit. All items equally weighted.

General subjects – one problem solving task (20%), one exam on Unit 1 (30%), one exam on Units 1 & 2 (50%)

Year 12: Units 3 and 4

Essential Maths – two problem solving tasks, two exams – one for each Unit, Unit 3 exam is the same for all schools. All items equally weighted.

General subjects – one problem solving task (20%), one exam on Unit 3 (15%), one exam on Unit 4 (15%), one external exam on Units 3 & 4 (50%)



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Where do I go for help choosing a Maths subject?

- Coursing book
- Senior Mathematics Subjects Summary
- Mrs Cook
- Your Maths teacher



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