



WANGARATTA
HIGH SCHOOL

Mathematics

Senior Subject Information for 2021
Year 11 & 12 Courses of Study

The Mathematics Learning Area



Mathematics enables students to:

- develop mathematical concepts, knowledge and skills
- apply mathematics to analyse, investigate and model a variety of contexts and solve practical and theoretical problems in situations that range from well-defined and familiar to open-ended and unfamiliar
- use technology effectively as a tool for working mathematically.

Why Study Maths?



- Just as languages provide the building blocks and rules we need to communicate, maths uses its own language, made up of numbers, symbols and formulas, to explore the rules we need to measure or identify essential problems like distance, speed, time, space, change, force and quantities.
- Studying maths helps us find patterns and structure in our lives.
- Practically, maths helps us put a price on things, create graphics , build websites, build skyscrapers and generally understand how things work or predict how they might change over time and under different conditions.

What Skills Will I Get If I Study Maths?



- Maths is one of the best subjects to develop your analytical, research and problem-solving skills.
- Not only will studying maths help give you the knowledge to tackle scientific, mechanical, coding and abstract problems, it will also help you develop logic to tackle everyday issues like planning projects, managing budgets and even debating effectively.

What Subjects Does Maths Go With?



Maths helps support the study of subjects like:

Physics

Chemistry

Biology

Engineering

IT

Economics

Business

Year 11 Subject Offerings in 2021



Foundation
Mathematics
Unit 1 & 2

General
Mathematics
Unit 1 & 2

Mathematical
Methods
Unit 1 & 2

Specialist
Mathematics
Unit 1 & 2

Year 12 Subject Offerings in 2021



Further
Mathematics
Unit 3 & 4

Mathematical
Methods
Unit 3 & 4

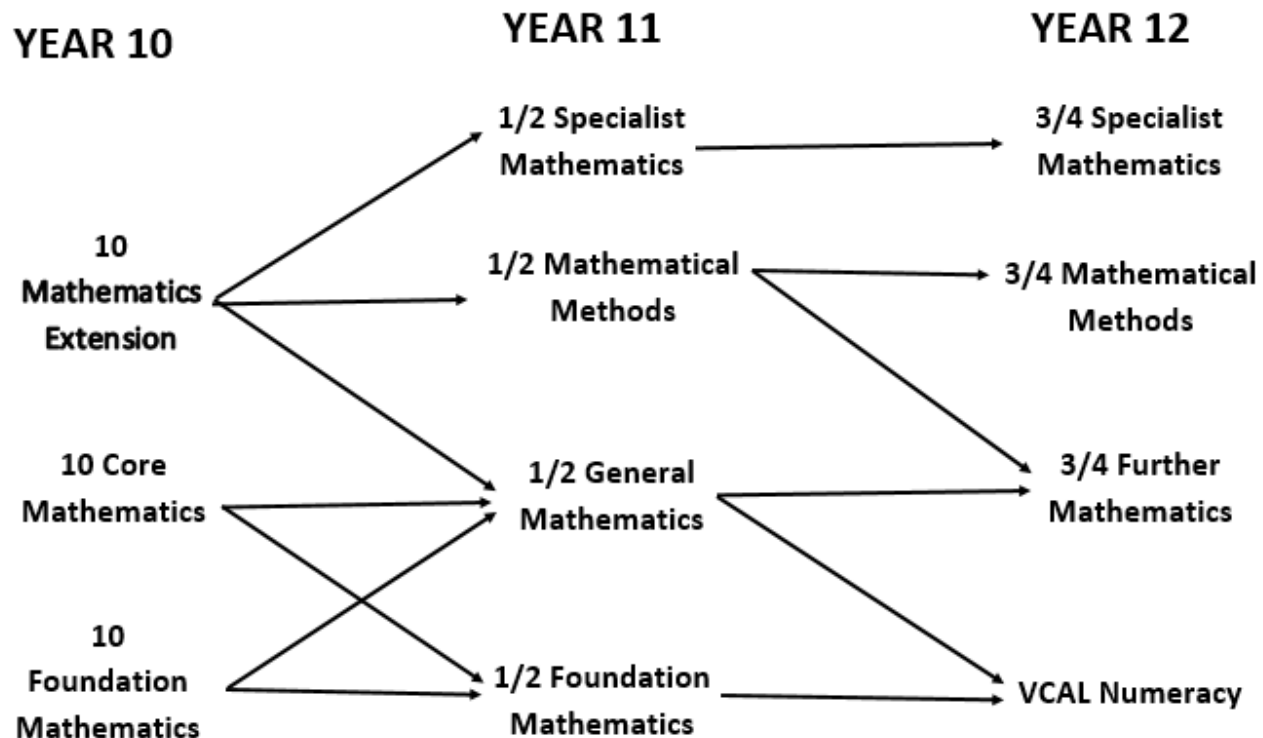
Specialist
Mathematics
Unit 3 & 4

Senior Mathematics Pathways



WANGARATTA
HIGH SCHOOL

Wangaratta High School – Senior Mathematics Pathways



Please Note: Specialist Mathematics is taken with Mathematical Methods

Foundation Mathematics Unit 1 & 2

Student requirements



Foundation Mathematics Units 1 and 2 provide for the continuing mathematical development of students entering VCE.

In general, these students would not intend to undertake Unit 3 and 4 studies in VCE Mathematics in the following year.

General Mathematics Unit 1 & 2

Student requirements



- General Mathematics Units 1 and 2 provide for a range of courses of study involving non-calculus based topics for a broad range of students.
- They incorporate topics that provide preparation for various combinations of studies at Units 3 and 4 and cover assumed knowledge and skills for those units.

Mathematical Methods Unit 1 & 2

Student requirements



- Mathematical Methods Units 1 and 2 provide an introductory study of simple elementary functions, algebra, calculus, probability and statistics and their applications in a variety of practical and theoretical contexts.
- They are designed as preparation for Mathematical Methods Units 3 and 4 and cover assumed knowledge and skills for those units.

Specialist Mathematics Unit 1 & 2

Student requirements



- Specialist Mathematics Units 1 and 2 comprise a combination of prescribed and selected non-calculus based topics and provide courses of study for students interested in advanced study of mathematics, with a focus on mathematical structure and reasoning.
- They incorporate topics that, in conjunction with Mathematical Methods Units 1 and 2, provide preparation for Specialist Mathematics Units 3 and 4 and cover assumed knowledge and skills for those units.

Further Mathematics Unit 3 & 4

Student prerequisites



- Further Mathematics Units 3 and 4 are designed to be widely accessible and comprise a combination of non-calculus based content from a prescribed core and a selection of two modules from four possible modules across a range of application contexts.
- They provide general preparation for employment or further study, in particular where data analysis, recursion and number patterns are important. The assumed knowledge and skills for the Further Mathematics Units 3 and 4 prescribed core are covered in specified topics from General Mathematics Units 1 and 2.
- Students who have done only Mathematical Methods Units 1 and 2 will also have had access to assumed knowledge and skills to undertake Further Mathematics.

Mathematical Methods Unit 3 & 4

Student prerequisites



- Mathematical Methods Units 3 and 4 extend the study of simple elementary functions to include combinations of these functions, algebra, calculus, probability and statistics, and their applications in a variety of practical and theoretical contexts.
- They also provide background for further study in, for example, science, humanities, economics and medicine.

Specialist Mathematics Unit 3 & 4

Student prerequisites



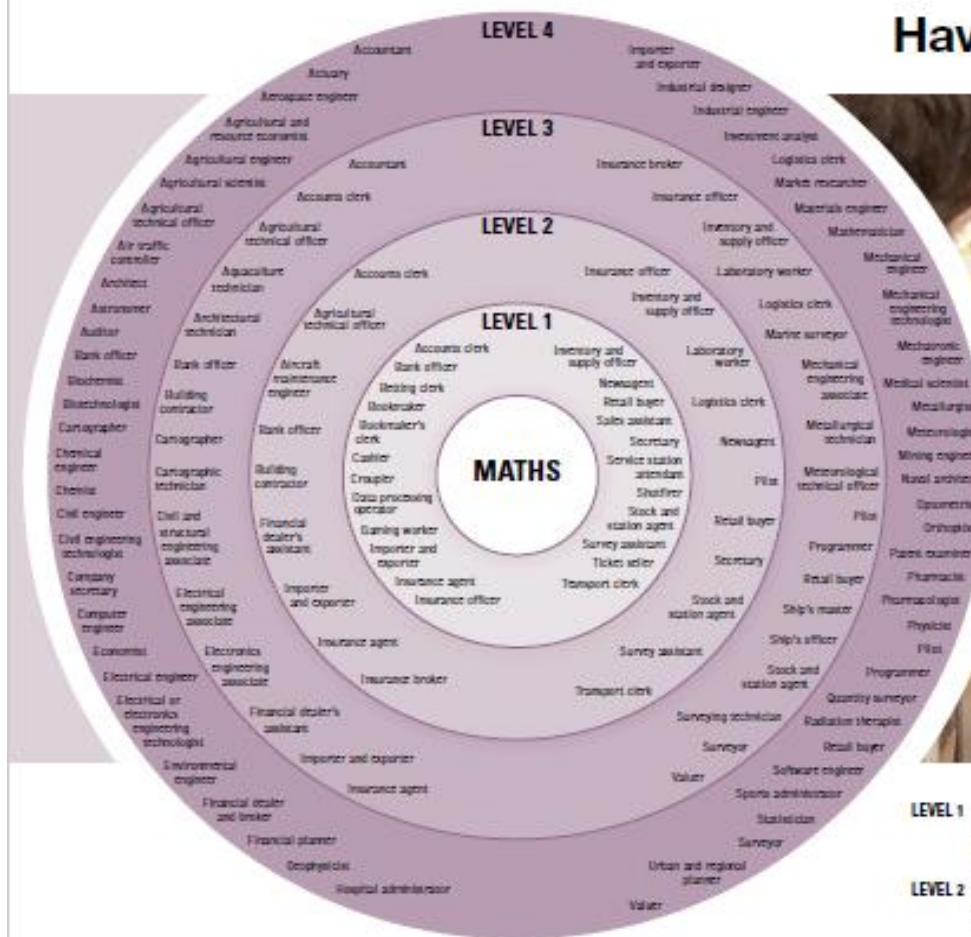
- Specialist Mathematics Units 3 and 4 are designed to be taken in conjunction with Mathematical Methods Units 3 and 4, or following previous completion of Mathematical Methods Units 3 and 4.
- The areas of study extend content from Mathematical Methods Units 3 and 4 to include rational and other quotient functions as well as other advanced mathematics topics such as complex numbers, vectors, differential equations, and mechanics and statistical inference.
- Study of Specialist Mathematics Units 3 and 4 assumes concurrent study or previous completion of Mathematical Methods Units 3 and 4.

Where Mathematics might lead you?



WANGARATTA
HIGH SCHOOL

Have you considered the occupations below?



NYSSA - Quantity surveyor

A career in the building and construction industry has always appealed to me, due to the versatility of the industry, and opportunities to work overseas. While completing my Diploma of Building, I realised my major strength was mathematics, so I decided to pursue a career as a quantity surveyor where I would best be able to utilise this strength. I really enjoy the flexibility my job offers. One day I might be estimating the necessary materials and costs of a new hospital, knowing only the number of beds, the next I could be at a construction site assessing work completed by the builder.

SHAAN - Accountant

I studied a business unit in Year 10, and had a great teacher who gave the class a really good idea about all the different career opportunities that could stem from this subject. I enjoyed mathematics and working with numbers, and thought that accounting would be an area where I could balance this with opportunities to work in a more social environment. I began exploring my options by visiting career fairs and university open days. It was at one such day that I found out about a corporate trainee program for accountancy students. The opportunity to put the theory I had learned in class, straight into practice in a real work setting was an invaluable learning tool.

LEVEL 1 Completion of Year 10, Senior Secondary Certificate of Education, Certificate I or II. Australian Apprenticeships may be offered at this level.

LEVEL 2 Certificate III or IV or at least three years relevant experience. Australian Apprenticeships may be offered at this level.

LEVEL 3 Diploma or Advanced Diploma. Study is often undertaken through TAFE's or Registered Training Organisations. Some universities offer studies at this level.

LEVEL 4 Usually requires the completion of a Bachelor Degree or higher qualification. Study is often undertaken at university.

For further information visit www.jobguide.education.gov.au and www.myfuture.edu.au



Where Mathematics might lead you?



People with maths degrees and other qualifications can go into: accounting, medicine, engineering, forensic pathology, finance, business, consultancy, teaching, IT, games development, scientific research, programming, the civil service, design, construction and astrophysics to name a few.

Specific job roles include actuary, business analyst, software engineer, technology analyst, information engineer, speech technology researcher, and maths teacher.

Further Questions



Contact Lisa.McLean@education.vic.gov.au for more guidance in this learning area.

Other resources:

VCAA Mathematics Study Design

<https://www.vcaa.vic.edu.au/Documents/vce/adjustedSD2020/2020MathematicsSD.pdf>

VTAC Guides

Year 11 - <http://vtac.edu.au/y11guide.html>

Year 12 - <http://vtac.edu.au/y12guide.html>