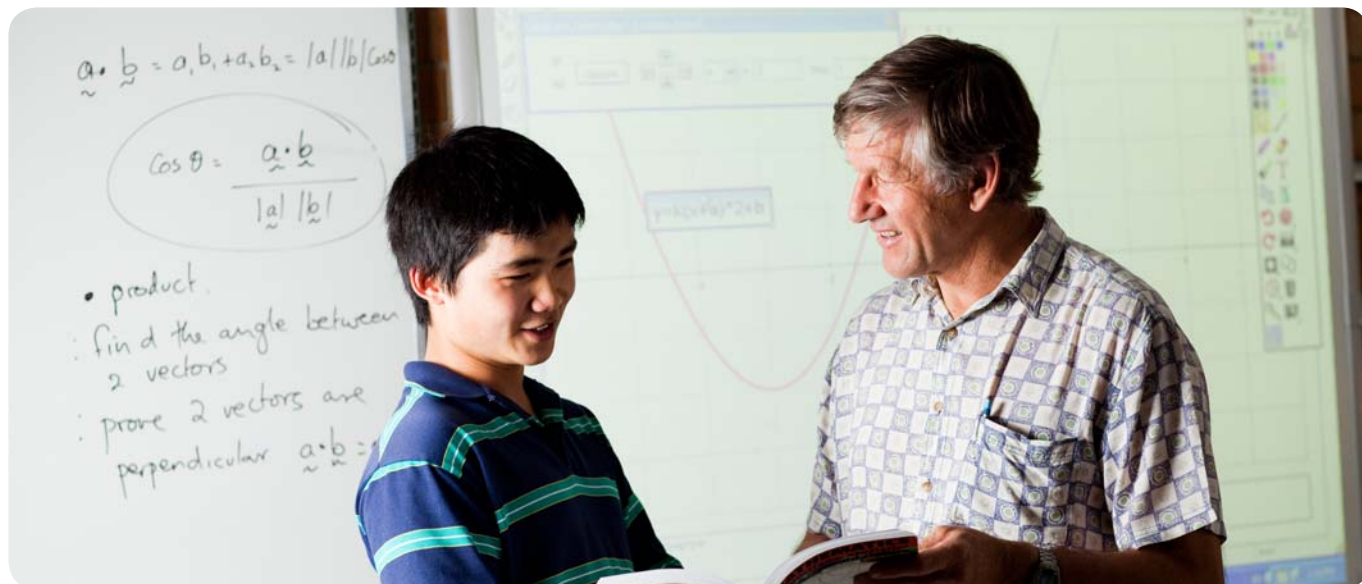


Summary of mathematics subjects from 2016



The Board has accredited the following subjects for teaching at Stage 1 from 2016:

- Mathematics
- General Mathematics
- Essential Mathematics.

The Board has accredited the following subjects for teaching at Stage 2 from 2017:

- Specialist Mathematics
- Mathematical Methods
- General Mathematics
- Essential Mathematics.

Subject descriptors

Schools may wish to use the following subject descriptors in their subject handbooks and counselling guides.

Stage 1 Mathematics

Mathematics develops an increasingly complex and sophisticated understanding of calculus, statistics, mathematical arguments, and proofs, and using mathematical models. By using functions, their derivatives, and integrals, and by mathematically modelling physical processes, students develop a deep

understanding of the physical world through a sound knowledge of relationships involving rates of change. Students use statistics to describe and analyse phenomena that involve uncertainty and variation.

Stage 1 Mathematics provides the foundation for further study in mathematics in Stage 2 Mathematical Methods and Stage 2 Specialist Mathematics.

Stage 2 Mathematical Methods

Mathematical Methods develops an increasingly complex and sophisticated understanding of calculus and statistics. By using functions and their derivatives and integrals, and by mathematically modelling physical processes, students develop a deep understanding of the physical world through a sound knowledge of relationships involving rates of change. Students use statistics to describe and analyse phenomena that involve uncertainty and variation.

Mathematical Methods provides the foundation for further study in mathematics, economics, computer sciences, and the sciences. It prepares students for courses and careers that may involve the use of statistics, such as health or social sciences. When studied together with Specialist Mathematics, this subject can be a pathway to engineering, physical science, and laser physics.

Stage 2 Specialist Mathematics

Specialist Mathematics draws on and deepens students' mathematical knowledge, skills, and understanding, and provides opportunities for students to develop their skills in using rigorous mathematical arguments and proofs, and using mathematical models. It includes the study of functions and calculus.

The subject leads to study in a range of tertiary courses such as mathematical sciences, engineering, computer science, and physical sciences. Students envisaging careers in related fields will benefit from studying this subject.

Specialist Mathematics is designed to be studied in conjunction with Mathematical Methods.

Stage 1 General Mathematics

General Mathematics extends students' mathematical skills in ways that apply to practical problem solving. Topics cover a diverse range of applications of mathematics, including personal financial management, measurement and trigonometry, the statistical investigation process, modelling using linear and non-linear functions, and networks and matrices.

Stage 2 General Mathematics

General Mathematics extends students' mathematical skills in ways that apply to practical problem solving. A problem-based approach is integral to the development of mathematical models and the associated key concepts in the topics. These topics cover a diverse range of applications of mathematics, including personal financial management, the statistical investigation process, modelling using linear and non-linear functions, and discrete modelling using networks and matrices.

Successful completion of General Mathematics at Stage 2 prepares students for entry to tertiary courses requiring a non-specialised background in mathematics.

Stage 1 Essential Mathematics

Stage 1 Essential Mathematics is designed for a range of students, including those who are seeking to meet the SACE numeracy requirement, and students who are planning to pursue a career in a range of trades or vocational pathways. There is an emphasis on extending students' mathematical skills in ways that apply to practical problem-solving in everyday and workplace contexts, in flexible and resourceful ways.

Stage 2 Essential Mathematics

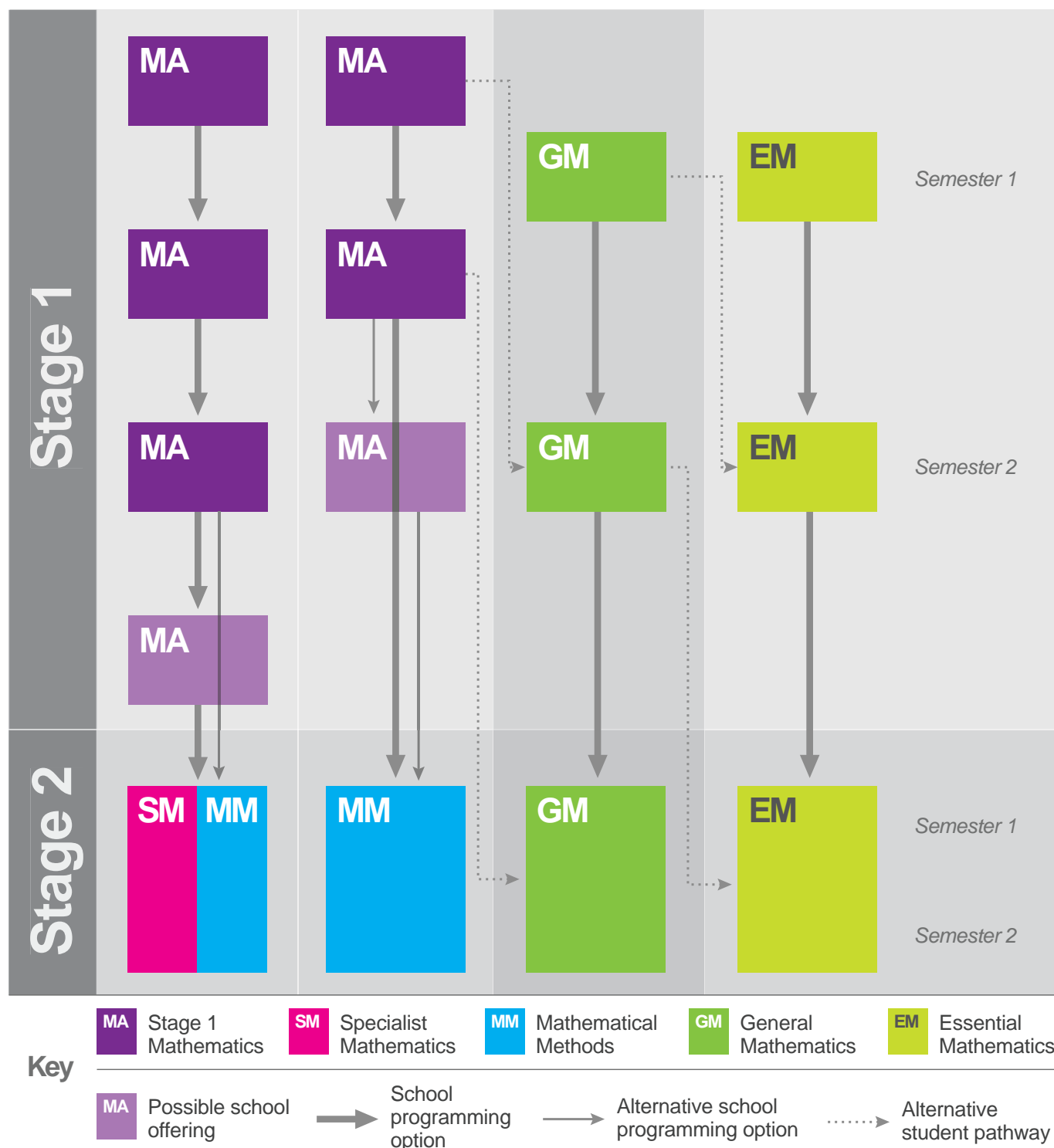
Essential Mathematics offers senior secondary students the opportunity to extend their mathematical skills in ways that apply to practical problem-solving in everyday and workplace contexts. Students apply their mathematics to diverse settings, including everyday calculations, financial management, business applications, measurement and geometry, and statistics in social contexts.

In Essential Mathematics there is an emphasis on developing students' computational skills and expanding their ability to apply their mathematical skills in flexible and resourceful ways.

This subject is intended for students planning to pursue a career in a range of trades or vocations.

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The diagram below represents possible mathematical options that students might study at Stage 1 and Stage 2.



Comparison to current SACE subjects

With the redeveloped subjects, comparisons may be made to current cohorts. The table below indicates the mathematical option that may be most relevant to a similar cohort of students.

Previous Stage 1 subject cohort	Stage 1 subject from 2016
Mathematics	Mathematics
Mathematical Applications	General Mathematics
Mathematics Pathways	Essential Mathematics
Numeracy for Work and Community Life	Essential Mathematics

Current Stage 2 subject cohort	Stage 2 subject from 2017
Specialist Mathematics + Mathematical Studies	Specialist Mathematics + Mathematical Methods
Mathematical Studies	Mathematical Methods
Mathematical Methods	Mathematical Methods, or General Mathematics
Mathematical Applications	General Mathematics, or Essential Mathematics
Mathematics Pathways	Essential Mathematics