

# Years 9 and 10 Mathematics

Mathematics in Years 9 and 10 is taught in compulsory year long courses, five periods each week. VCE Foundation Mathematics Unit 2 is taught as an alternative year long course at Year 10. VCE General Mathematics Unit 2 is available as an *additional* year long course and is taught before school. Selection criteria apply for entry to both VCE options. As a result of studying Mathematics each student is given the opportunity to develop skills, concepts, applications and processes that will enable them to take an active and meaningful role in society.

## Outcomes:

The Years 9 and 10 Mathematics courses are based on the Level 6 Curriculum and Standards Framework (CSF) outcomes, which are broadly grouped as:

1. **Space**
2. **Number**
3. **Measurement**
4. **Chance and data**
5. **Algebra**
6. **Reasoning and strategies**

## Areas of Study:

**Year 9:** Number Skills and Modelling, Statistics, Pythagoras' Theorem, Irrational Numbers, Probability, Algebra, Exponential Notation, Linear Equations, Graphing Linear Relations, Geometry, Trigonometry and Measurement

**Year 10:** Statistics, Factorisation, Measurement, Linear and Quadratic Functions, Linear Graphs with Modelling, Probability, Geometry, Trigonometry, Variation and Exponential Growth Modelling

## Work Requirement Tasks:

1. Skills practice and standard applications – textbook exercises and assignments
2. Problem-solving and modelling
3. Projects

## Assessment Tasks:

1. Skills practice and standard applications – topic tests and assignments
2. Problem-solving and modelling (one fully written report per semester)
3. Project (one fully written report per semester)
4. End-of semester exams (Year 10)

## Home Study:

Regular Mathematics home study of between 1 to 1½ hours per week is expected of all students, including

1. Finishing textbook exercises and assignments
2. Completing project and problem-solving assessment tasks
3. Revising – redoing exercises and additional examples a week later

## Textbook and Equipment:

All students need to have a copy of the textbook **Essential Mathematics 9/10, The CSF11 Course (Cambridge)** and drawing and measuring equipment (booklist) and to purchase a scientific calculator (available from the school).

## Information Technology and Other Tools:

Students employ a range of tools in their work as mathematicians, including scientific and graphics calculators and computer software packages. Years 9 & 10 class rooms each have multiple computer stations connected to the College intranet and classes also have access to several computer laboratories. Class sets of graphics calculators are provided.

1. **Computer software packages** – Geometer's Sketchpad & Graphmatica (Space); Excel – spreadsheets (Number, Chance and Data, Measurement and Algebra); Computer algebra systems (Algebra); Databases
2. **Computer files** – Various skills development, problem-solving and modelling activities
3. **Graphics calculators** – graphical information and summary statistics (Algebra and Chance and data)
4. **Scientific calculators** – various calculations (across all areas of study)
5. **Web research** – history of Maths, applications of Maths and the work of mathematicians

## Numeracy – Maths Assistance and Enrichment:

Maths teachers with allocated time and parent volunteers are available to assist individual students with their Maths skills development, consolidation and reinforcement both during the school day and after school. Students have the opportunity to participate in a range of co-curricular enrichment Math activities:

1. **Maths Games Days**
2. **Australian Mathematics Challenge**
3. **Australian Mathematics Competition for the Westpac Awards**
4. **Mathematics Talent Quest (MTQ)** – this is the Year 9 project assessment task during Semester One