VCE Mathematics Frequently Asked Questions

Foundation Mathematics

**Do all four areas of study have to be covered in each of Unit 1 and Unit 2?**

No, content equivalent to two areas of study should be covered in each unit. How this relates to coverage of content from a particular area of study within or across units will depend on the contexts chosen, and the approach taken to implementation.

**Can a student proceed from Foundation Mathematics Unit 1 and Unit 2 to Further Mathematics Units 3 and 4?**

Students intending to study Further Mathematics Units 3 and 4 should prepare for this by completing General Mathematics Units 1 and 2 designed for this purpose. Foundation Mathematics Units 1 and 2 are not designed as a preparation for Further Mathematics Units 3 and 4.

However, students who have done well in Foundation Mathematics Units 1 and 2, and undertake supplementary study of selected topics that cover assumed knowledge and skills for the Core area of study in Further Mathematics Unit 3, could then proceed to subsequent study of Further Mathematics Units 3 and 4.

**How can the VCE Foundation Mathematics *Advice for teachers* be accessed?**

The [VCE Foundation Mathematics *Advice for teachers*](https://www.vcaa.vic.edu.au/curriculum/vce/vce-study-designs/foundationmathematics/Pages/Index.aspx) is a digital publication.

General Mathematics

**Do students need to study the topic ‘Financial arithmetic’ as preparation for the Further Mathematics Unit 3 Core recursion and financial modelling?**

No. The financial mathematics studied in the F – 10 mathematics curriculum provides appropriate background.

**How can the VCE General Mathematics *Advice for teachers* be accessed?**

The [VCE General Mathematics *Advice for teachers*](https://www.vcaa.vic.edu.au/curriculum/vce/vce-study-designs/generalmathematics/Pages/Index.aspx) is a digital publication.

Further Mathematics

**Are the application task and the modelling or problem solving tasks to be implemented over a continuous period of time?**

Yes, 4 – 6 hours over a period of 1 – 2 weeks for applications tasks, and 2 – 3 hours over a period of 1 week for modelling or problem solving tasks.

**Are data sets in Further Mathematics to be regarded as samples of some population?**

Yes. The relevant summary statistics obtained for data analysis using technology are those for a sample, not a population.

**Is the three median graphical method for fitting a straight line to a scatterplot still part of the Core Data analysis content?**

No.

**How can the VCE Further Mathematics *Advice for teachers* be accessed?**

The [VCE Mathematics *Advice for teachers*](https://www.vcaa.vic.edu.au/curriculum/vce/vce-study-designs/furthermathematics/Pages/Index.aspx) is a digital publication.

**How can the Further Mathematics exam specifications, sample examination materials and formula sheet be accessed?**

The VCE Further Mathematics exam specifications, sample examination materials and formula sheet can be accessed at: <http://www.vcaa.vic.edu.au/Documents/exams/mathematics/furmath-specs-sample-w.pdf>

Mathematical Methods

**Are the application task and the modelling or problem solving tasks to be implemented over a continuous period of time?**

Yes, 4 – 6 hours over a period of 1 – 2 weeks for applications tasks, and 2 – 3 hours over a period of 1 week for modelling or problem solving tasks.

**Are matrices required for solution of systems of simultaneous linear equations?**

No, however they may be used as applicable if desired. Matrices are required for transformations of the plane.

**Can determinants be used to analyse solutions of 2 × 2 systems of simultaneous linear equations where a parameter is involved in one or more coefficients?**

Determinants are not required but may be used as applicable if desired. However students should be able to tackle such problems by consideration of ratios of coefficients, gradients and the like.

**When is a function strictly increasing or strictly decreasing over an interval?**

 A function *f* is said to be strictly increasing over an interval when *a* < *b* implies *f*(*a*) < *f*(*b*) for all *a* and *b* in that interval. Similarly, a function *f* is said to be strictly decreasing over an interval when *a* < *b* implies *f*(*a*) > *f*(*b*) for all *a* and *b* in that interval.

**How can the VCE Mathematical Methods *Advice for teachers* be accessed?**

The [VCE Mathematical Methods *Advice for teachers*](https://www.vcaa.vic.edu.au/curriculum/vce/vce-study-designs/mathematicalmethods/Pages/Index.aspx) is a digital publication.

**How can the Mathematical Methods exam specifications, sample examination materials and formula sheet be accessed?**

The VCE Mathematical Methods exam specifications, sample examination materials and formula sheet can be accessed at: <http://www.vcaa.vic.edu.au/Documents/exams/mathematics/mathmethods-specs-sample-w.pdf>

Specialist Mathematics

**Are the application task and the modelling or problem solving tasks to be implemented over a continuous period of time?**

Yes, 4 – 6 hours over a period of 1 – 2 weeks for applications tasks, and 2 – 3 hours over a period of 1 week for modelling or problem solving tasks.

**Is vector calculus now restricted to modelling motion in a plane?**

Yes.

**Do students need to know both cartesian and parametric forms of definite integral for the length of an arc of a curve in the plane?**

Yes. They should be familiar with both of the forms:

 and 

**Are the constant acceleration formulas for kinematics a required part of the Unit 3 and 4 study?**

No. Students should be able to solve problems involving constant acceleration by integration, however they can use the constant acceleration formulas as applicable if they wish.

**What are students expected to know with respect to error in hypothesis testing?**

Students should be able to identify the nature of error indicated in a hypothesis test context. That is, whether there is an incorrect rejection of a true null hypothesis, leading to a conclusion that an effect or relationship exists when it does not (commonly called a type 1 error); or whether a false null hypothesis is incorrectly not rejected, leading to a conclusion that an effect or relationship does not exist when it does (commonly called a type 2 error). Students should be able to interpret type 1 and type 2 errors in context. They will not be required to calculate the probability of error directly.

**How can the VCE Specialist Mathematics *Advice for teachers* be accessed?**

The [VCE Specialist Mathematics *Advice for teachers*](https://www.vcaa.vic.edu.au/curriculum/vce/vce-study-designs/specialistmathematics/Pages/Index.aspx) is a digital publication.

**How can the Specialist Mathematics exam specifications, sample examination materials and formula sheet be accessed?**

The VCE Specialist Mathematics exam specifications, sample examination materials and formula sheet can be accessed at: <http://www.vcaa.vic.edu.au/Documents/exams/mathematics/specmath1and2-samp-w.pdf>