

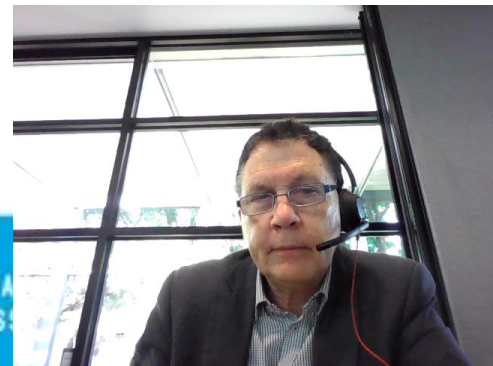
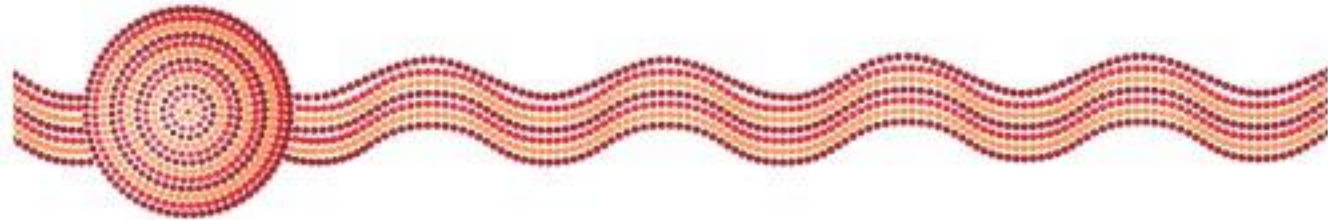
# VCE Foundation Mathematics 2023-2027

Mathematical Investigations



# Acknowledgement of Country

**The VCAA respectfully acknowledges the Traditional Owners of Country throughout Victoria and pays respect to the ongoing living cultures of First Peoples.**



# VCE Mathematics On-demand Videos

To support the implementation of the 2023-2027 study design for Mathematics, we have developed a series of short on-demand videos outlining approaches that teachers may wish to utilise in the classroom.

The information presented in these on-demand videos has been developed by current VCE teachers, in conjunction with the VCAA, and offer suggestions for ways schools could approach the implementation of the 2023-2027 VCE Mathematics study design.



# General Outline

Briefly outline the revised material discussed in this on demand presentation

1. Assessment
2. Mathematical Investigations
3. VCAA Support material and contact



# Topic 1 – Assessment

In Unit 3&4, a greater weighting is assigned to the School-assessed Coursework than the Examination in a 60:40 split.  
(p. 11 in 2023-2027 study design)

## Foundation Mathematics Assessment

Unit 3 School-assessed Coursework: 40 per cent (Two investigation tasks)

Unit 4 School-assessed Coursework: 20 per cent (One investigation task)

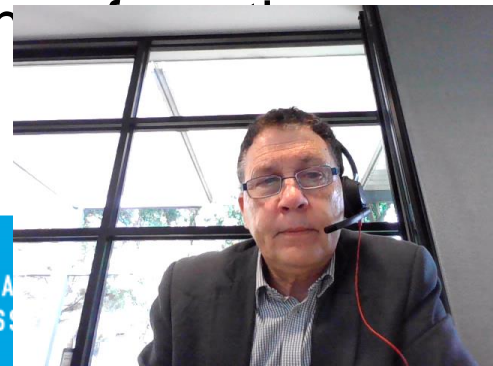
Units 3 and 4 Examination (2 hours): 40 per cent. (multiple choice and written



# Mathematical Investigation Units 1 & 2

There are **three components** to mathematical investigation:

- **Formulation:** overview of the context or scenario, and related background, including historical or contemporary background as applicable, and the mathematisation of questions, conjectures, hypotheses, issues or problems of interest.
- **Exploration:** investigation and analysis of the context or scenario with respect to the questions of interest, conjectures or hypotheses, using mathematical concepts, skills and processes, including the use of technology and application of computational thinking.
- **Communication:** summary, presentation and interpretation of the findings of the mathematical investigation and related applications.



# Mathematical Investigation Units 1 & 2

- Can be implemented in a variety of ways to meet requirements:
  - as an investigative **learning activity** or activities
  - as an **assessment task** or tasks
  - a **combination** of the above
- Time range **1 to 2 weeks**:
- **Minimum** one longer activity/task, or two shorter activities/tasks over the equivalent of **1 week** duration
- **Up to 2 weeks**, a suitable combination, for example, two longer activities/tasks, one longer and two shorter activities tasks, three medium activities/tasks, four shorter activities/tasks



# Mathematical Investigations

- provides a **natural and effective context** for addressing Outcome 2 and Outcome 3
- can be used to support **computational thinking** and **experimentation**
- is one of the **assessment task types** listed for Units 1 and 2
- Three investigation tasks are required as **assessment task types** in Foundation Mathematics Units 3 and 4.

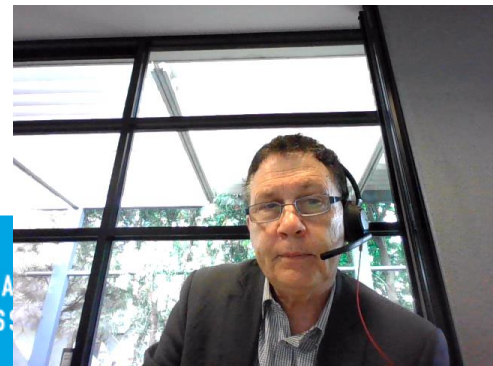




# Sample Investigation topic Unit 1 & 2

Planning and comparing house rental options.

- **Formulation:**
  - involves finding and selecting several rental house options from the internet, and deciding how to best compare the properties using, for example, the weekly and monthly payments. This could include, for example, deciding to use spreadsheets to compare options.
- **Exploration:**
  - includes entering relevant data and information into the spreadsheets and undertaking any calculations in order to compare the properties. This could also incorporate doing a budget to see what rentals could be afforded.
- **Communication:**
  - Findings communicated in a client report.



# Sample Investigation topic Units 3 & 4

## Context:

- Every summer there are news reports about babies or young children being left in cars in the hot weather, with often dire consequences. In Australia, there can be in excess of 5000 reports of children needing to be rescued after being left unattended in a car.
- Leaving children unattended in a car – even for a short period of time – can be fatal. Children are particularly at risk because they can lose fluid quickly, become dehydrated and suffer from heatstroke.

## Formulation:

- Why do babies dehydrate faster than adults in summer?
- What is the mathematics sitting behind this?
- How can you begin to investigate this issue?



# SAC work in Units 3 & 4 – Investigations

Outcomes	Marks allocated
<b>Outcome 1</b> Define and explain key concepts as specified in the content from the areas of study, and apply a range of related mathematical routines and procedures to solve practical problems from a range of everyday and real-life contexts.	7 or 8
<b>Outcome 2</b> Apply mathematical processes in non-routine practical contexts, including situations with some open-ended aspects requiring investigative, modelling or problem-solving techniques or approaches, and analyse and discuss these applications of mathematics.	15
<b>Outcome 3</b> Apply computational thinking and use numerical, graphical, symbolic and statistical functionalities of technology to develop mathematical ideas, produce results and carry out analysis in practical situations requiring investigative, modelling or problem-solving techniques or approaches.	8 or 7
	<b>Total marks</b>



# Contact

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