

Authorised and published by the Victorian Curriculum and Assessment Authority
Level 7, 2 Lonsdale Street
Melbourne VIC 3000

ISBN: 978-1-923025-78-3

© Victorian Curriculum and Assessment Authority 2024

No part of this publication may be reproduced except as specified under the *Copyright Act 1968* or by permission from the VCAA. Excepting third-party elements, schools may use this resource in accordance with the VCAA educational allowance. For more information read the VCAA copyright policy.

The VCAA provides the only official, up-to-date versions of VCAA publications. Details of updates can be found on the VCAA website.

This publication may contain copyright material belonging to a third party. Every effort has been made to contact all copyright owners. If you believe that material in this publication is an infringement of your copyright, please email the Copyright Officer.

Copyright in materials appearing at any sites linked to this document rests with the copyright owner(s) of those materials, subject to the Copyright Act. The VCAA recommends you refer to copyright statements at linked sites before using such materials.

VCE and the VCAA logo are registered trademarks of the Victorian Curriculum and Assessment Authority.

|  |
| --- |
| Contact us if you need this information in an accessible format: for example, large print or audio.Telephone (03) 9032 1635 or email vcaa.media.publications@education.vic.gov.au |

Contents

[Important information 4](#_Toc164090876)

[Introduction 5](#_Toc164090881)

[Scope of study 5](#_Toc164090882)

[Rationale 5](#_Toc164090883)

[Aims 5](#_Toc164090884)

[Structure 6](#_Toc164090885)

[Entry 6](#_Toc164090886)

[Duration 6](#_Toc164090887)

[Changes to the study design 6](#_Toc164090888)

[Monitoring for quality 6](#_Toc164090889)

[Safety and wellbeing 6](#_Toc164090890)

[Ethical conduct of investigations 6](#_Toc164090891)

[Requirements for delivery 7](#_Toc164090892)

[Employability skills 7](#_Toc164090893)

[Legislative compliance 7](#_Toc164090894)

[Child Safe Standards 7](#_Toc164090895)

[Assessment and reporting 9](#_Toc164090896)

[Satisfactory completion 9](#_Toc164090897)

[Levels of achievement 9](#_Toc164090898)

[Authentication 9](#_Toc164090899)

[Cross-study specifications 10](#_Toc164090900)

[Unit 3: Designing and conducting research 13](#_Toc164090908)

[Area of Study 1 13](#_Toc164090909)

[Area of Study 2 14](#_Toc164090910)

[Area of Study 3 15](#_Toc164090911)

[School-based assessment 16](#_Toc164090912)

[External assessment 17](#_Toc164090913)

[Unit 4: Completing and reporting research 18](#_Toc164090914)

[Area of Study 1 18](#_Toc164090915)

[Area of Study 2 19](#_Toc164090916)

[Area of Study 3 20](#_Toc164090917)

[School-based assessment 21](#_Toc164090918)

[External assessment 21](#_Toc164090919)

Important information

Accreditation period

Units 1–4: 1 January 2025 – 31 December 2029

Implementation of this study commences in 2025.

Other sources of information

The [*VCAA Bulletin*](https://www.vcaa.vic.edu.au/news-and-events/bulletins-and-updates/bulletin/Pages/index.aspx) is the only official source of changes to regulations and accredited studies. The Bulletin also regularly includes advice on VCE studies. It is the responsibility of each VCE teacher to refer to each issue of the Bulletin. The *Bulletin* is available as an e-newsletter via [free subscription](https://www.vcaa.vic.edu.au/Footer/Pages/Subscribe.aspx) on the VCAA website.

To assist teachers in developing courses, the VCAA publishes online [Support materials](https://vcaa.edugate-cms.eduweb.vic.gov.au/curriculum/vce/vce-study-designs/extendedinvestigation/Pages/Index.aspx) (incorporating the content previously supplied in the *Advice for teachers*).

The current [*VCE Administrative Handbook*](https://www.vcaa.vic.edu.au/administration/vce-vcal-handbook/Pages/index.aspx) contains essential information on assessment processes and other procedures.

VCE providers

Throughout this study design the term ‘school’ is intended to include both schools and other VCE providers.

Copyright

Schools may use this VCE study design in accordance with the VCAA educational allowance, including making copies for students and use within the school’s secure online teaching and learning environment. For details, access the full [VCAA copyright policy](https://www.vcaa.vic.edu.au/Footer/Pages/Copyright.aspx) on the VCAA website.

Introduction

Scope of study

VCE Extended Investigation enables each student to identify a research question and carry out an independent research project designed to answer it. The research question may be based on a topic already encountered in a student’s VCE program, allowing the student to explore the topic of interest at a more advanced level, or it may be completely unrelated to other VCE studies.

Students develop and apply critical thinking skills at every stage of the study, with an emphasis on learning to think as a researcher. They recognise what constitutes a good research question and develop an ethical, disciplined and reasoned approach to gathering and interpreting data. They learn to analyse and evaluate the arguments presented by other researchers as they conduct a review of the academic literature relevant to their research question. They evaluate the clarity, plausibility and validity of their own ideas and arguments.

Students learn and apply project management skills to ensure completion of their research within the limits of the time and resources available, and document their progress and sources.

Having completed their investigations, students prepare a substantial written report on their research and its outcomes. They observe the conventions of academic reporting, such as appropriate style and structure, and comprehensive citation and attribution. Students also deliver an oral presentation on their investigation to an educated, non-specialist audience, explaining, critically evaluating and justifying their research choices and conclusions.

Rationale

This study requires the development and application of skills that are highly transferable to further study and work contexts, and are valued in many fields of higher education and vocational training. These skills include the practice of thinking critically – analysing and understanding the arguments of others and evaluating one’s own, particularly in the context of research but also in everyday life. An ability to manage sustained projects, taking into account time, resources and required outcomes, can be applied and further developed in many contexts. The study encourages students to pursue independent and self-reliant inquiry and helps develop the skills required for extended academic writing and effective oral presentation. Beyond their immediate value for further study or work, these thinking, management and communication skills contribute to the ability of students to participate as active and informed citizens.

Aims

This study enables students to:

* apply critical thinking skills to the construction, analysis and evaluation of ideas and arguments
* identify, evaluate and explore a research question
* understand and apply appropriate research methods
* evaluate arguments in relevant academic research
* plan and implement an investigation in depth, applying effective project management skills
* collect, critically analyse and represent data
* analyse and evaluate their research findings
* demonstrate skills in extended academic writing and oral presentation
* present the outcomes to an appropriate audience, defending their research methods and conclusions.

Structure

The study is made up of one Unit 3 and 4 sequence.

* Unit 3: Designing and conducting research (XI033)
* Unit 4: Completing and reporting research (XI034)

Each unit deals with specific content organised into areas of study and is designed to enable students to achieve a set of outcomes for that unit. Each outcome is described in terms of key knowledge and key skills.

Entry

There are no prerequisites for entry to Unit 3. Students must undertake Unit 3 and Unit 4 as a sequence. Units 3 and 4 are designed for the final year of secondary education. Accordingly, the standard of research required for this study should be consistent with expectations of students in their final year of secondary education. All VCE studies are benchmarked against comparable national and international curriculums.

Duration

Units 3 and 4 each involve at least 50 hours of scheduled supervised instruction, combined with independent study monitored by the supervising teacher. It is expected that students will commit out-of-school time to undertake research and that schools will monitor this aspect of the study.

Changes to the study design

During its period of accreditation, minor changes to the study will be announced in the [*VCAA Bulletin*](https://www.vcaa.vic.edu.au/news-and-events/bulletins-and-updates/bulletin/Pages/index.aspx). The *Bulletin* is the only source of changes to regulations and accredited studies. It is the responsibility of each VCE teacher to monitor changes or advice about VCE studies published in the *Bulletin*.

Monitoring for quality

As part of ongoing monitoring and quality assurance, the VCAA will periodically undertake an audit of VCE Extended Investigation to ensure the study is being taught and assessed as accredited. The details of the audit procedures and requirements are published annually in the [*VCE Administrative Handbook*](https://www.vcaa.vic.edu.au/administration/vce-vcal-handbook/Pages/index.aspx). Schools will be notified if they are required to submit material to be audited.

Safety and wellbeing

It is the responsibility of the school to ensure that duty of care is exercised in relation to the health and safety of all students undertaking the study.

Ethical conduct of investigations

As part of this study, students and supervising teachers may be involved in teaching and learning activities that include investigations using human subjects. Teachers and schools have a legal and moral responsibility to ensure that students follow ethical principles at all times when undertaking such investigations. Teachers should refer to the following documents and websites for detailed advice, which may be updated from time to time.

* Australian Code for the Responsible Conduct of Research (2018) issued by [National Health and Medical Research Council (NHMRC)](https://www.nhmrc.gov.au/about-us/publications/australian-code-responsible-conduct-research-2018), Australian Research Council and Universities Australia.
* National Statement on Ethical Conduct in Human Research (2007, updated 2018), issued by the [National Health and Medical Research Council (NHMRC)](https://www.nhmrc.gov.au/about-us/publications/national-statement-ethical-conduct-human-research-2007-updated-2018) in accordance with the *National Health and Medical Research Council Act 1992* (Cwlth).
* [Australian Privacy Principles](https://www.legislation.gov.au/Details/C2012A00197) in the *Privacy Amendment (Enhancing Privacy Protection) Act 2012* (Cwlth).
* Ethical conduct in research with Aboriginal and Torres Strait Islander Peoples and communities: Guidelines for researchers and stakeholders, [National Health and Medical Research Council (NHMRC)](https://www.nhmrc.gov.au/about-us/resources/ethical-conduct-research-aboriginal-and-torres-strait-islander-peoples-and-communities). ‘AIATSIS Code of Ethics for Aboriginal and Torres Strait Islander Research, Australian Institute of Aboriginal and Torres Strait Islander Studies’.
* Schools are strongly advised to avoid research activities involving animals. Schools are referred to the [*Prevention of Cruelty to Animals Act 1986* and its Extension Regulations 2018 and the Australian Code of Practice for the Care and Use of Animals for Scientific Purposes 2013 (8th edition),](http://www.nhmrc.gov.au/about-us/publications/australian-code-care-and-use-animals-scientific-purposes) for information regarding legislation and licensing requirements that restrict the use of animals in research.

Schools must comply with the appropriate sectoral policy and advice on the conduct of student research within their own or neighbouring schools.

Requirements for delivery

The Principal must make sure that students have access to adequate facilities and resources to complete any VCE study they are offered. To ensure the ICT assessment requirements are met for Critical Thinking Test for this study, students should have access to appropriate ICT resources as stated in the [Statement of School Readiness](https://www.vcaa.vic.edu.au/curriculum/vce/vce-study-designs/extendedinvestigation/Pages/Index.aspx). There are no requirements for specialist facilities and [teacher qualifications](https://www2.education.vic.gov.au/pal/recruitment-schools/policy-and-guidelines/qualifications#teacher-class) specified for this study.

Employability skills

This study offers a number of opportunities for students to develop employability skills. The [Support materials](https://vcaa.edugate-cms.eduweb.vic.gov.au/curriculum/vce/vce-study-designs/extendedinvestigation/Pages/Index.aspx) provide specific examples of how students can develop employability skills during learning activities and assessment tasks.

Legislative compliance

When collecting and using information, the provisions of privacy and copyright legislation, such as the Victorian *Privacy and Data Protection Act 2014* and *Health Records Act 2001*, and the federal *Privacy Act 1988* and *Copyright Act 1968*, must be met.

Child Safe Standards

Schools and education and training providers are required to comply with the Child Safe Standards made under the Victorian *Child Wellbeing and Safety Act 2005*. Registered schools are required to comply with *Ministerial Order No. 1359 Implementing the Child Safe Standards – Managing the Risk of Child Abuse in Schools and School Boarding Premises*. For further information, consult the websites of the [Victorian Registration and Qualifications Authority](https://www.vrqa.vic.gov.au/Pages/default.aspx), the [Commission for Children and Young People](https://ccyp.vic.gov.au/) and the [Department of Education](https://www.vic.gov.au/child-safe-standards-education-providers).

Assessment and reporting

Satisfactory completion

The award of satisfactory completion for a unit is based on the teacher’s decision that the student has demonstrated achievement of the set of outcomes specified for the unit. Demonstration of achievement of outcomes and satisfactory completion of a unit are determined by evidence gained through the assessment of a range of learning activities and tasks.

Teachers must develop courses that provide appropriate opportunities for students to demonstrate satisfactory achievement of outcomes.

The decision about satisfactory completion of a unit is distinct from the assessment of levels of achievement. Schools will report a student’s result for each unit to the VCAA as S (satisfactory) or N (not satisfactory).

Levels of achievement

Units 3 and 4

The VCAA specifies the assessment procedures for students undertaking scored assessment in Units 3 and 4. Designated assessment tasks are provided in the details for each unit in VCE study designs.

The student’s level of achievement in VCE Extended Investigation Units 3 and 4 will be determined by School-assessed Coursework (SAC), a Critical Thinking Test and an Externally-assessed Task.

The VCAA will report the student’s level of achievement on each assessment component as a grade from A+ to E or UG (ungraded). To receive a study score, the student must undertake two or more graded assessments in the study and receive S for each of Units 3 and 4. The study score is reported on a scale of 0–50. Teachers should refer to the current [*VCE Administrative Handbook*](https://www.vcaa.vic.edu.au/administration/vce-vcal-handbook/Pages/index.aspx) for details on graded assessment and calculation of the study score.

Percentage contributions to the study score in VCE Extended Investigation are:

* Unit 3 School-assessed Coursework: 30 per cent
* Unit 4 Externally-assessed Task: 60 per cent
* Units 3 and 4 Critical Thinking Test: 10 per cent

Authentication

Work related to the outcomes of each unit will be accepted only if the teacher can attest that, to the best of their knowledge, all unacknowledged work is the student’s own. Teachers need to refer to the current [*VCE Administrative Handbook*](https://www.vcaa.vic.edu.au/administration/vce-vcal-handbook/Pages/index.aspx) for authentication rules and strategies.

Because of the nature of the study, which may include considerable independent and self-directed work by the student, work must be monitored and authenticated through specific procedures and requirements, as indicated in the Cross-study specifications ([pages 9–10](#CSS)). Further advice regarding authentication procedures for VCE Extended Investigation is available on the [VCE Extended Investigation study page](https://www.vcaa.vic.edu.au/curriculum/vce/vce-study-designs/extendedinvestigation/Pages/Index.aspx).

Cross-study specifications

An investigation over two units

The study provides the scope for each student to identify a research question and then design a systematic and in-depth project using appropriate research methods to collect data and draw conclusions. The investigation is completed over two units. Each student conducts their investigation on an individual basis; collects, analyses and prepares a report on their data; and then presents their findings in detail in a formal written report and an oral presentation.

Thinking as a researcher

Critical thinking skills are practised and applied at each stage of the study, with particular emphasis on the thinking skills required to develop and evaluate research. These skills are applied in the process of formulating and developing a question and determining how it might best be answered. Students evaluate the arguments of other researchers, and critically examine their own reasoning in formulating questions, collecting data and evidence and drawing conclusions. Sound arguments are needed when presenting the research and its findings to an audience and responding cogently to any questions or challenges.

Developing a suitable research question

The student should develop a suitable research question. Teachers and students must use the following criteria in determining the suitability of a proposed research question.

The research question must be:

* substantial and significant
* focused and contained in scope
* clearly and precisely worded
* impartial in stance
* amenable to systematic and sound research
* consistent with ethical research guidelines
* in an area for which appropriate and relevant primary and secondary sources are available
* practical, realistic and manageable with the available time and resources
* likely to yield a useful answer
* capable of sustaining extended inquiry
* likely to enable the student to achieve all outcomes in the study.

Selecting research methods

The term ‘methodology’ is variously used in research in different fields. For the purposes of the study design, the term ‘methods’ is used to refer to both the broad methodological approach taken in an investigation and the specific procedures undertaken to gather and evaluate evidence.

Consideration of how a question can be investigated is an important part of the process of developing and refining the question. Students need to identify one or more methods for collecting the data they will need, subjecting their initial ideas to critical scrutiny and adjusting their selection as they learn more from their review of existing research. The selected methods must be both practicable and likely to generate useful knowledge about the issue under investigation. They must also be consistent with ethical research guidelines. Students may identify several approaches before determining which will be preferable for their purpose. Where they have difficulty identifying or justifying effective methods, the research question may require refinement or reconsideration. As part of each student’s presentation of the outcomes of their investigation, the student reflects on any issues in the design of their research, including the effectiveness of their selection and application of research methods.

Avoiding duplication

To guard against possible duplication of content in existing VCE studies and to help ensure that topics are suitable, the student’s selected research question is formally lodged with the VCAA in Term 1. The lodgement date is published annually.

A number of VCE studies now include research projects. As part of the management of the study, supervising teachers should communicate with other teachers in the school to verify that the research question will not involve duplication of work being undertaken or already completed in another study. Where the VCAA identifies potential duplication of content, the school will be notified. It is the school’s responsibility to guide the student in further refinement of the question and proposed research methods. If students are found to have used the same work for more than one assessment, this will be investigated as a possible breach of rules. Refer to the [*VCE Administrative Handbook*](https://www.vcaa.vic.edu.au/administration/vce-vcal-handbook/Pages/index.aspx) for further information.

Supervising teachers should ensure that students are fully aware of the requirement to avoid duplication of content for assessment.

Monitoring and authentication

At every stage of the study, each student is responsible for ensuring that the work is their own. Teacher supervision is required to ensure that all work is authenticated throughout the course of the study. The study may involve significant self-directed work by students, and it is essential that teachers are able to attest, to the best of their knowledge, that all work is the student’s own.

Design of the investigation

The research area of interest must be selected by the student, and the research question must be developed by the student. Teachers and mentors must not provide the research question, nor can it be shared or replicated across a class. While some students may choose areas of investigation that share some similarity in direction or propose using similar research methods, development of the question and selection of proposed methods is the responsibility of each individual student. Teachers may help students in the refinement of a question if any potential duplication is identified.

Documentation of all work

Each student is required to keep an Extended Investigation Journal. This is a formal record maintained over the duration of the study, to help supervising teachers ensure that all work is authenticated as the student’s own.

The Extended Investigation Journal contains essential documentation to help students to demonstrate their achievement of unit outcomes as they progress through the study. On a regular basis, they review their proposed investigation in light of their growing awareness of the purpose and nature of the research and the elements of its design. The Journal must include details of the student’s increasing understanding of the research area and question; the research tools and data collection methods to be used; notes on academic literature and sources; exercises in critical thinking; and notes on data analysis and emerging findings. Discussions with teachers and mentors are recorded, along with the student’s notes indicating critical evaluation of their own developing work. All items must be clearly recorded and dated.

Students also use the Extended Investigation Journal as an important tool in project management. It allows them to review and refine the focus of their investigation, and to track their progress in terms of timelines, resources and achievement of key milestones.

Supervising teachers must sight and monitor the use of the student’s Extended Investigation Journal at each stage of the design and conduct of the investigation in order to authenticate the developing body of work.

Consultation and feedback

Students need to undertake independent work for this study, often without direct supervision, so there are specific requirements for consulting others and receiving feedback. A student may discuss their research with their supervising teacher, fellow students, mentors and others, such as relatives. Such discussions should only assist the student to analyse and reflect critically on their research and their project management, and to identify possible problem-solving strategies should issues arise. All such consultations and feedback must be recorded.

Supervising teachers may read parts of a student’s written report during development and provide general feedback to assist the student to reflect critically on their work. This is part of the teacher’s role in monitoring each student’s progress. The Extended Investigation Externally-assessed Task Authentication form available from the [VCE Extended Investigation study page](https://www.vcaa.vic.edu.au/curriculum/vce/vce-study-designs/extendedinvestigation/Pages/Index.aspx), or an equivalent, should be used to record any such consultation and feedback. This form should be retained as part of the Extended Investigation Journal.

If additional evidence is required by the VCAA to establish the authenticity of a student’s work, the student may be required to provide their Extended Investigation Journal.

Presenting to an audience

Students are required to present the findings of their investigation in the form of an oral presentation and a written report. Both must be suitable for an educated, non-specialist audience, and the language and content used to explain the nature and significance of the investigation must be accessible to such an audience. In the context of this study, ‘educated’ is defined as having achieved a tertiary-level qualification. ‘Non-specialist’ indicates that the audience may not necessarily have specialist knowledge in the student’s area of investigation. These considerations should be taken into account in the design and conduct of the investigation.

Unit 3: Designing and conducting research

In this unit, students develop and practise critical thinking skills, increasing their understanding of different modes of thinking, the elements of argument and the qualities of valid reasoning. Students learn to evaluate the arguments of others and apply the same critical approach to their own developing ideas. They consider sources of possible distortion and bias in the design and conduct of research.

As they consider possible questions for investigation, students explore the scope, nature and purpose of research, the value of various research methods and the principles of ethical conduct. They conduct a review of relevant research literature and identify a specific question. They identify appropriate sources of data and methods of data collection. Details of the proposed research question and methods for collecting data are formally lodged with the VCAA during Term 1 on a date published annually.

Students begin to undertake their investigation, conducting initial research and refining their understanding of likely challenges in managing their project to a conclusion. They may make adjustments in scope and focus in response to a better understanding of issues related to the question.

Throughout the unit, students use an Extended Investigation Journal to complete exercises in thinking critically, and to document their work in developing a question, reviewing research and receiving feedback and input from others. They learn and apply the skills of project management, tracking their progress towards key milestones.

Area of Study 1

Thinking about arguments

This area of study focuses on the skills of thinking critically, with particular emphasis on evaluating arguments.

Students learn to identify the elements of argument. They use mapping techniques to practise analysing the arguments of others and review the construction of their own arguments. They consider how various cognitive biases may influence thinking.

Students practise evaluating arguments found in everyday texts and begin to identify and evaluate arguments presented in research material. They apply these techniques to their own thinking. They complete exercises in the development of these skills in their Extended Investigation Journal, which must be available to the supervising teacher for periodic review.

Outcome 1

On completion of this unit the student should be able to analyse and evaluate arguments.

To achieve this outcome the student will draw on key knowledge and key skills outlined in Area of Study 1.

Key knowledge

* terms for modes of thinking and argumentation, including analysis, inference, categorisation, generalisation and evaluation
* elements of arguments, including claims, evidence and conclusions, and the reasoning used to
connect them
* characteristics of valid arguments
* techniques for analysing and evaluating arguments
* strengths and weaknesses of different types of evidence
* the influence of cognitive biases on reasoning and investigation.

Key skills

* identify the elements of arguments and their functions in structuring arguments
* assess the validity of arguments
* analyse and evaluate arguments
* evaluate evidence
* assess the potential for cognitive bias in thinking about research questions and methods, and sources of data.

Area of Study 2

Developing a research question

In this area of study, students develop a research question that will become the focus of their investigation. They consider the qualities of good research questions and examine a range of research methods. Students and teachers must use the criteria on [page 9](#CSS) to guide the development of the research question.

Students explore ethical issues in the conduct of research, the importance of protecting research subjects from any harm, and the relationship between ethical research and potential benefit. They apply their critical thinking skills in evaluating questions, considering their proposed methods and data sources, and assessing the potential for bias or flawed reasoning.

Students conduct a literature review to learn more about their area of investigation, and to identify previous relevant research that may help to refine their question and inform their investigation. Consideration of these materials can extend students’ understanding of the significance or scope of the question. Students are introduced to the conventions of academic report writing, including acknowledgement of sources and the use of standard referencing systems. They record their work in progress in the Extended Investigation Journal, which must be available to the supervising teacher for periodic review.

Students explain their question and proposed research methods in the form of a written rationale.

Outcome 2

On completion of this unit the student should be able to propose and justify a research question and methods of investigation.

To achieve this outcome the student will draw on key knowledge and key skills outlined in Area of Study 2.

Key knowledge

* the purpose and role of research
* qualities of a good research question
* strengths and weaknesses of methods for gathering qualitative and quantitative data
* approaches to identifying appropriate sources of data
* ethical issues in research design, including participant rights to consent, confidentiality and privacy
* approaches to identifying and searching relevant research literature and other resources
* conventions of academic reporting, including citations and bibliographic referencing of sources
* unethical use of sources, such as plagiarism or failure to attribute accurately
* ways of summarising and recording information.
* Key skills
* compare and evaluate research questions
* assess the potential for cognitive bias in proposed research questions, methods and data sources
* compare and evaluate research methods in relation to research questions
* consider ethical issues relevant to the question and the proposed methods
* identify the scope of the planned investigation
* review research literature and other resources, as relevant
* analyse arguments relevant to the research area
* critically evaluate the research methods proposed
* document progress, ideas, information and sources
* propose and justify the research question and proposed methods of investigation
* use standard conventions of citation, referencing and acknowledgement of all sources.

Area of Study 3

Planning and commencing the investigation

In this area of study, students learn about the practical project management aspects of planning and conducting research; using appropriate methods of research; establishing timelines; allocating resources; and setting milestones for completion of each major activity required. They may use project management tools or software for recording and monitoring their progress and achievements, and may incorporate periodic reports in the Extended Investigation Journal.

Students continue to think critically about their research question, the quality of the data to be gathered and the value of the research outcome they intend to achieve.

Students develop a written plan for their investigation, outlining the research methods they intend to use, and indicating how the planned approach relates to information drawn from their literature review and other sources. They must take into account any ethical issues in the planned research, in addition to issues of practical manageability. In preparing a plan, they apply their knowledge of the conventions of academic reporting, including correct citation and referencing of sources.

Students explain their investigation through an oral report. They detail the types of evidence explored in their research to date, articulate the central issue of their investigation and make predictions about the outcomes. They draw on the relevant research they have reviewed and explain their selected sources in relation to their research question.

All aspects of the developing project must be documented in the Extended Investigation Journal, which must be available to the supervising teacher for periodic review.

Outcome 3

On completion of this unit the student should be able to write a detailed research plan, commence their investigation, explain their investigation and justify the selected research methods to an educated, non-specialist audience.

To achieve this outcome the student will draw on key knowledge and key skills outlined in Area of Study 3.

Key knowledge

* techniques and tools of research project management
* ethical considerations relevant to the selected research question and methods
* techniques for analysing and evaluating arguments in the research material reviewed
* techniques for evaluating the evidence offered in support of findings in the research material
* ways of summarising and recording arguments and findings from relevant research, and organising and categorising them for later use.

Key skills

* write a detailed research plan, applying sound project management techniques
* explain and justify the planned research methods, including strategies to address ethical issues
* select and evaluate existing research and other resources to inform the investigation
* summarise arguments in the material reviewed, organising and categorising information
* critically evaluate the developing investigation, the selected methods of research, and the data and evidence gathered.

School-based assessment

Satisfactory completion

The award of satisfactory completion for a unit is based on whether the student has achieved the outcomes specified for the unit.

The areas of study and key knowledge and key skills specified for the outcomes should be used for course design and the development of suitable learning activities and assessment tasks. Teachers should develop a variety of learning activities and assessment tasks to provide opportunities for students to demonstrate the key knowledge and key skills.

Satisfactory completion of this unit is also subject to submission of the Extended Investigation Journal for authentication purposes.

Assessment of levels of achievement

The student’s level of achievement will be determined by School-assessed Coursework. School-assessed Coursework tasks must be a part of the regular teaching and learning program and must not unduly add to the workload associated with that program. They must be completed mainly in class and within a limited time frame.

Where teachers provide a range of options for the same School-assessed Coursework task, they should ensure that the options are of comparable scope and demand.

The types and range of forms of School-assessed Coursework for the outcomes are prescribed within the study design. The VCAA publishes [Support materials](https://vcaa.edugate-cms.eduweb.vic.gov.au/curriculum/vce/vce-study-designs/extendedinvestigation/Pages/Index.aspx) for this study, which include advice on the design of assessment tasks and the assessment of student work for a level of achievement.

Teachers will provide the VCAA with a numerical score representing an assessment of the student’s level of achievement. The score must be based on the teacher’s assessment of the performance of each student on the tasks set out in the following table. The performance descriptors for these criteria are available on the [VCE Extended Investigation study page](https://www.vcaa.vic.edu.au/curriculum/vce/vce-study-designs/extendedinvestigation/Pages/Index.aspx).

Conditions for the oral report:

* a time frame of 12–16 minutes applies
* an educated, non-specialist panel must comprise at least two members, including the supervising teacher
* students must present individually to the panel
* no audience other than the panel may be present
* all panel members participate in the question and answer segment of the presentation
* assessors on the panel will mark individually and then confer to reach an agreed mark
* oral reports must be recorded.

Contribution to final assessment

School-assessed Coursework for Unit 3 will contribute 30 per cent to the study score.

|  |  |  |
| --- | --- | --- |
| **Outcomes** | **Marks allocated** | **Assessment tasks** |
| **Outcome 2**Propose and justify a research question and methods of investigation. | **20** | Written rationale (1000 words) |
| **Outcome 3** Write a detailed research planandCommence their investigation, explain their investigation and justify their selected research methods to an educated, non-specialist audience. | **30****30** | Written research plan (1000 words)andOral report (12–16 minutes: 6–8 minutes for presentation, 6–8 minutes for questions and answers) |
| **Total marks** | **80** |  |

External assessment

The level of achievement in Units 3 and 4 is also assessed by a Critical Thinking Test that will contribute 10 per cent to the study score. Details of the test are provided on [pages 20 and 21](#CTT).

Unit 4: Completing and reporting research

In this unit, students further develop their thinking skills by interpreting, analysing and evaluating arguments. They apply these skills to the research reported by others and to the conduct of their own investigation and the presentation of its outcomes.

Students are supported and monitored as they undertake and complete their investigation, managing its scope and meeting the milestones established in their research plan.

Students recognise the key features of sound and well-presented argument in research reports, such as clarity, precision and coherence, and aim for these qualities in their own reporting. They prepare a substantial written report that presents the details of their investigation and its methods and findings in response to the research question. They adhere to the conventions of academic writing and incorporate correct and complete citations, attributions and bibliographic referencing. Their report includes critical evaluation of the investigation, the research methods used and the quality and range of evidence gathered. Information is provided about the resolution of any ethical issues that arose in the course of the investigation.

Students prepare and deliver an oral presentation that explains their investigation and its findings to an educated, non-specialist audience. They show the relationship between their conclusions and the research question, and explain and evaluate their selection of methods. They respond to questions and challenges, reflecting critically on their findings and justifying them where required.

The Extended Investigation Journal continues to be used to complete exercises in thinking critically, to document the progress and completion of the investigation, and to record assistance received from consultation with supervising teachers, mentors and others.

Area of Study 1

Thinking about research

This area of study further develops skills in thinking critically, with particular emphasis on evaluating arguments in research material.

Students apply the tools of argument analysis and evaluation to the arguments they encounter in research material and to their own reasoning in reporting and presenting on their investigation; its methods; the evidence gathered and the conclusions drawn; and its presentation.

Students identify the features of sound and well-presented argument in research, such as clarity, precision and coherence, and learn techniques to assess the soundness and presentation of argument in research. They recognise possible cognitive bias and reasoning errors in the work of others, and apply the same rigour to the organisation of their own ideas.

They complete exercises in the development of these skills in their Extended Investigation Journal, which must be available to the supervising teacher for periodic review.

Outcome 1

On completion of this unit the student should be able to evaluate evidence and reasoning in the research of others and in their own investigation.

To achieve this outcome the student will draw on key knowledge and key skills outlined in Area of Study 1.

Key knowledge

* terms for modes of thinking and argumentation, particularly inference, inductive and deductive reasoning, explanation, evaluation, synthesis and justification
* elements of arguments presented in research literature, including claims, evidence and conclusions, and the reasoning used to connect them
* sources of cognitive bias in the conduct of research and the presentation of findings
* techniques for assessing the soundness and presentation of arguments in research
* techniques for evaluating methods used and the quality of evidence in relation to a research question.

Key skills

* analyse and evaluate arguments in research literature and other texts
* recognise strengths and weaknesses in features of research reporting and presentation, such as clarity, precision and coherence
* detect possible cognitive bias in research design and reporting
* evaluate the methods used and the evidence, conclusions and reasoning in one’s own investigation
* determine whether the investigation has yielded a useful answer to the research question.

Area of Study 2

Completing a written report

In this area of study, students complete their investigation and write their final report, documenting their research and the evidence it has generated. They analyse and evaluate their response to the research question and the conclusions they have drawn.

The Extended Investigation Journal is used to monitor and record the development of the written report. All aspects of the developing project must be documented in the Extended Investigation Journal, which must be available to the supervising teacher for periodic review.

Outcome 2

On completion of this unit the student should be able to complete a report written for an educated, non-specialist audience that presents and evaluates the results of their extended investigation.

To achieve this outcome the student will draw on key knowledge and key skills outlined in Area of Study 2.

Key knowledge

* the body of relevant literature specific to the area of investigation and the research question
* good practice in monitoring and recording progress in the conduct of research
* techniques for selecting and presenting quantitative and/or qualitative data
* approaches to synthesising research findings
* techniques for evaluating the completed investigation
* appropriate reporting structures for academic research
* appropriate research concepts and terms
* conventions of citing, referencing and acknowledging sources
* appropriate style and terminology in writing for an educated, non-specialist audience.

Key skills

* manage the research project to conclusion
* apply skills of data analysis to identify research findings
* organise and synthesise research findings
* use and analyse relevant literature and/or data to support the analysis and draw conclusions
* evaluate the investigation
* develop an appropriate report structure
* use key research concepts and terms in developing the written report
* provide comprehensive citations, references and acknowledgement of the contribution of others
* use appropriate style and terminology in writing for an educated, non-specialist audience.

Area of Study 3

Presenting and defending findings

In this area of study, students develop a presentation of their investigation and findings. They present the investigation and its results to an educated, non-specialist audience, and respond to questions and challenges. They comment critically on the existing literature in the relevant field, the research methods used in their own investigation, the quality of evidence gathered, and the value of their conclusions.

Outcome 3

On completion of this unit the student should be able to explain their investigation to an educated, non-specialist audience, critically evaluating their research process and defending their findings.

To achieve this outcome the student will draw on key knowledge and key skills outlined in Area of Study 3.

Key knowledge

* the body of relevant literature specific to the area of investigation
* techniques for organising the content of a written report for oral presentation
* adaptations of language and key ideas for effective presentation to an educated, non-specialist audience
* techniques for the defence and justification of research choices and findings
* strategies for responding to questions and challenges

Key skills

* organise and analyse ideas, data and findings to explain conclusions
* explain the investigation in the context of the existing body of relevant research
* evaluate research methods and the evidence gathered
* critically evaluate and comment on outcomes of the investigation
* demonstrate valid reasoning to support conclusions
* adapt language and key ideas for a presentation to an educated, non-specialist audience
* respond to questions and challenges

School-based assessment

Satisfactory completion

The award of satisfactory completion for a unit is based on whether the student has demonstrated the set of outcomes specified for the unit. Teachers should use a variety of learning activities and assessment tasks to provide a range of opportunities for students to demonstrate the key knowledge and key skills in the outcomes.

The areas of study and key knowledge and key skills listed for the outcomes should be used for course design and the development of learning activities and assessment tasks.

Satisfactory completion of this unit is also subject to submission of the Extended Investigation Journal for authentication purposes.

External assessment

The student’s level of achievement in Unit 4 will be determined by an Externally-assessed Task in two parts: a final written report and an oral presentation.

The student’s level of achievement in Units 3 and 4 will also be assessed by a Critical Thinking Test.

Externally-assessed Task

The Externally-assessed Task will contribute 60 per cent to the study score.

|  |  |  |
| --- | --- | --- |
| **Outcomes** | **Marks allocated** | **Assessment tasks** |
| **Outcome 2**Complete a report written for an educated, non-specialist audience that presents and evaluates the results of their extended investigation. | **60** | Written report, including evaluation (4000 words) |
| **Outcome 3**Explain their investigation to an educated, non-specialist audience, critically evaluating their research process and defending their findings. | **40** | Oral presentation, including response to panel questions (15–20 minutes) |
| **Total marks** | **100** |  |

Description and conditions

Written report

The written report will draw on key knowledge and key skills from Unit 3 Outcomes 1, 2 and 3, and Unit 4 Outcomes 1, 2 and 3.

The written report should not exceed 4000 words in length, with a 10 per cent tolerance. The written report must comply with the specifications for the VCE Extended Investigation Externally-assessed Task: Written report published on the [VCE Extended Investigation external assessment webpage](https://www.vcaa.vic.edu.au/assessment/vce-assessment/past-examinations/Pages/Extended-Investigation.aspx).

The Externally-assessed Task: Written report is assessed using criteria and performance descriptors published by the VCAA and available on the [VCE Extended Investigation study page](https://www.vcaa.vic.edu.au/curriculum/vce/vce-study-designs/extendedinvestigation/Pages/Index.aspx). The written report will be assessed by assessors appointed by the VCAA.

Oral presentation

The oral presentation will draw on the key knowledge and skills from Unit 3 Outcomes 1, 2 and 3, and Unit 4 Outcomes 1, 2 and 3.

The oral presentation will take place before a panel of assessors appointed by the VCAA and be 15–20 minutes in duration. Further conditions, the format and any other essential information are described in the VCE Extended Investigation: Oral presentation specifications published on the [VCE Extended Investigation external assessment webpage](https://www.vcaa.vic.edu.au/assessment/vce-assessment/past-examinations/Pages/Extended-Investigation.aspx). VCAA performance and oral examination rules apply. Details of these rules are published annually in the [*VCE Administrative Handbook*](https://www.vcaa.vic.edu.au/administration/vce-vcal-handbook/Pages/index.aspx).

The Externally-assessed Task: Oral presentation is assessed using criteria and performance descriptors published by the VCAA and available on the [VCE Extended Investigation study page](https://www.vcaa.vic.edu.au/curriculum/vce/vce-study-designs/extendedinvestigation/Pages/Index.aspx).

Critical Thinking Test

The Critical Thinking Test will contribute 10 per cent to the study score.

Description and conditions

The Critical Thinking Test will be an online test.

The test will be undertaken on a date published annually by the VCAA.

VCAA examination rules apply. Details of these rules are published annually in the [*VCE Administrative Handbook*](https://www.vcaa.vic.edu.au/administration/vce-vcal-handbook/Pages/index.aspx).

The Critical Thinking Test will be assessed by assessors appointed by the VCAA.

Further advice

The VCAA publishes specifications for the Critical Thinking Test on the VCAA [website](https://www.vcaa.vic.edu.au/assessment/vce-assessment/past-examinations/Pages/Extended-Investigation.aspx). The specifications are published in the first year of implementation of the revised study, together with any sample material.