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Introduction

SCOPE OF STUDY

Psychology is the study of how people think, feel and behave. It is a broad discipline which incorporates both the scientific study of human behaviour through biological, psychological and social perspectives, and the systematic application of this knowledge to personal and social circumstances in everyday life.

VCE Psychology enables students to explore complex human behaviours and thought processes through a biopsychosocial framework. The study focuses on several key interrelated aspects of the discipline that explore the connection between the brain and behaviour: the interplay between genetics and environment, individual differences and group dynamics, sensory perception and awareness, memory and learning, and mental health. Students engage in the critical and creative nature of the discipline by examining classic and contemporary research, including models, theories and the use of imaging technologies, which illustrate how knowledge in psychology evolves in response to new evidence. An understanding of the complexities and diversity of psychology leads students to appreciate the interconnectedness between different content areas both within the discipline and with other sciences.

An important feature of the VCE Psychology study design is the opportunity for students to undertake a range of inquiry tasks that may be self-designed, develop skills, extend knowledge and interrogate the links between theory and practice. Inquiry methodologies include laboratory experimentation, observational studies, self-reports, questionnaires, interviews, rating scales, simulations, animations, examination of case studies, and literature reviews. Students pose questions, formulate hypotheses, operationalise variables, and collect, analyse and critically interpret quantitative and qualitative data. They use descriptive statistics to inform their interpretation of data and explanations for their observations, and understand the use and purpose of inferential statistics in psychological research. Students evaluate methodologies and results, justify conclusions and communicate their findings to a range of audiences. Consideration of the ethical standards and guidelines that regulate psychological research is integral to the study of VCE Psychology.

As well as an increased understanding of the scientific process, students develop capacities that enable them to critically evaluate the strengths and limitations of science, respect evidence-based conclusions and gain an awareness of the ethical, social and political context of scientific endeavour.
RATIONALE

VCE Psychology provides students with a sophisticated framework for exploring the complex interactions between biological, psychological and social factors that influence thought, emotions and behaviour. In undertaking this study, students apply their learning to everyday situations including workplace and social relations. They gain insights into the mental health issues in society.

In VCE Psychology students develop a range of inquiry skills involving practical experimentation and research specific to the knowledge of the discipline, analytical skills including critical and creative thinking, and communication skills in a variety of modes and to different audiences. They work collaboratively as well as independently on a variety of tasks. Through Psychology, students engage in science as a process that involves knowledge building, developing and applying technologies, addressing societal challenges, and informing government policy. Students develop scientific and cognitive skills and understandings to analyse contemporary psychology-related issues, and communicate their own views from an informed position.

The study of Psychology leads to opportunities in a range of careers that involve working with children, adults, families and communities in a variety of settings. These include academic and research institutions, management and human resources, and government, corporate and private enterprises. Fields of applied psychology include educational, environmental, forensic, health, sport and organisational psychology. Specialist fields of psychology include counselling and clinical contexts, as well as neuropsychology, social psychology and developmental psychology.

AIMS

This study enables students to:

• understand the ways that biological, psychological and social perspectives are used to organise, analyse and extend knowledge in psychology
• understand, compare and evaluate psychological theories and concepts related to human thoughts, emotions and behaviour.

Together with the other VCE science studies, VCE Psychology enables students to:

• appreciate the cooperative, cumulative, evolutionary and interdisciplinary nature of science as a human endeavour, including its possibilities, limitations and political and sociocultural influences
• develop a range of individual and collaborative science investigation skills through experimental and inquiry tasks in the field and the laboratory
• develop a critical perspective on contemporary science-based issues of local and global significance
• apply their scientific understandings to familiar and novel situations including personal, social, environmental and technological contexts
• foster attitudes that include curiosity, open-mindedness, creativity, flexibility, integrity, attention to detail and respect for evidence-based conclusions
• understand and apply the research, ethical and safety principles that govern the study and practice of the discipline in the collection, analysis and critical evaluation and reporting of data
• communicate clearly and accurately an understanding of the discipline using appropriate terminology, conventions and formats to diverse audiences.

STRUCTURE

The study is made up of four units:

Unit 1: Are people programmed for life?
Unit 2: What makes individuals individual?
Unit 3: Does experience shape thinking?
Unit 4: All in the mind?
Each unit deals with specific content contained in 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.

The study is structured under a set of curriculum framing questions that reflects the inquiry nature of the discipline.

**ENTRY**

There are no prerequisites for entry to Units 1, 2 and 3. Students must undertake Unit 3 prior to undertaking Unit 4. Units 1 to 4 are designed to a standard equivalent to the final two years of secondary education. All VCE studies are benchmarked against comparable national and international curriculum.

**DURATION**

Each unit involves at least 50 hours of scheduled classroom instruction over the duration of a semester.

**CHANGES TO THE STUDY DESIGN**

During its period of accreditation minor changes to the study will be announced in the VCAA Bulletin. The Bulletin is the only source of changes to regulations and accredited studies. It is the responsibility of each VCE teacher to monitor changes and 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 Psychology 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 and VCAL Administrative Handbook. Schools will be notified if they are required to submit material to be audited.

**SAFETY AND WELLBEING**

This study may include potentially sensitive topics. Teachers should ensure that students have opportunities to consider topics systematically and objectively, and to become aware of the diversity of views held on such matters. Students should not be asked to disclose personal information about their own or others’ health status and behaviours nor should they feel compelled to volunteer this information.

When dealing with sensitive mental health matters, students should be specifically advised that they are not in a position to diagnose problems or offer any counselling or therapy. In addition, students should be given information about sourcing available treatment services within and outside school.

As part of this study teachers and students consider different assessments of intelligence, including standardised psychological tests which are designed to be administered only by trained psychologists. Teachers must limit access to such tests and ensure that students understand that such tests are valid only if administered by a qualified psychologist.

This study may also involve the handling of potentially hazardous substances and the use of potentially hazardous equipment. 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 EXPERIMENTAL INVESTIGATIONS

As part of this study teachers and students will be involved in teaching and learning activities that include experimental 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 for detailed advice:

- the National Statement on Ethical Conduct in Human Research (2007), issued by the National Health and Medical Research Council (NHMRC) in accordance with the NHMRC Act 1992 (Cwlth), www.nhmrc.gov.au/publications/synopses/e72syn.htm
- the Code of Ethics of the Australian Psychological Society (APS), www.psychology.org.au

EMPLOYABILITY SKILLS

This study offers a number of opportunities for students to develop employability skills. The Advice for teachers companion document provides 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 Information Privacy Act 2000 and Health Records Act 2001, and the federal Privacy Act 1988 and Copyright Act 1968, must be met.
Assessment and reporting

SATISFACTORY COMPLETION
Schools will report a result for each unit to the VCAA as S (Satisfactory) or N (Not Satisfactory). 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. The decision about satisfactory completion of a unit is distinct from the assessment of levels of achievement. Teachers must develop courses that provide appropriate opportunities for students to demonstrate satisfactory achievement of outcomes. Satisfactory completion of outcomes is determined by evidence gained through assessment in a range of learning tasks and activities.

LEVELS OF ACHIEVEMENT

Units 1 and 2
Procedures for the assessment of levels of achievement in Units 1 and 2 are a matter for school decision. Assessment of levels of achievement for these units will not be reported to the VCAA. Schools may choose to report levels of achievement using grades, descriptive statements or other indicators.

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 the VCE study designs. Determination of the level of achievement is based on the student’s performance in School-assessed Coursework (SACs) and/or School-assessed Tasks (SATs) as specified in the VCE study designs. The VCAA will report the student’s level of performance on each assessment component as a grade from A+ to E or UG (ungraded). To receive a study score the student must achieve two or more graded assessments and receive S for both Units 3 and 4. The study score is reported on a scale of 0–50; it is a measure of how well the student performed in relation to all others who took the study. Teachers should refer to the current VCE and VCAL Administrative Handbook for details on graded assessment and calculation of the study score. Percentage contributions to the study score in VCE Psychology are as follows:

- Unit 3 School-assessed Coursework: 16 per cent
- Unit 4 School-assessed Coursework: 24 per cent
- End-of-year examination: 60 per cent.

Details of the assessment program are described in the sections on Units 3 and 4 in this study design.
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 and VCAL Administrative Handbook for authentication procedures.
Units 1–4: Key science skills

The development of a set of key science skills is a core component of the study of VCE Psychology and applies across Units 1 to 4 in all areas of study. In designing teaching and learning programs, and in assessing student learning for each unit, teachers should ensure that students are given the opportunity to develop, use and demonstrate skills in a variety of contexts when undertaking their own investigations and when evaluating the research of others. As the complexity of key knowledge increases from Units 1 to 4 and as opportunities are provided to undertake investigations, students should aim to demonstrate the key science skills at a progressively higher level and with greater proficiency.

The key science skills are common to all VCE science studies and have been contextualised below for VCE Psychology.

<table>
<thead>
<tr>
<th>Key science skill</th>
<th>VCE Psychology Units 1–4</th>
</tr>
</thead>
<tbody>
<tr>
<td>select questions, formulate hypotheses</td>
<td>identify and operationalise independent and dependent variables</td>
</tr>
<tr>
<td>and make predictions</td>
<td>identify extraneous and potential confounding variables including individual participant</td>
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<tr>
<td></td>
<td>differences, non-standardised instructions and procedures, order effects,</td>
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<tr>
<td></td>
<td>experimenter effect and placebo effects</td>
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<tr>
<td></td>
<td>construct testable research hypotheses</td>
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<tr>
<td>plan and undertake investigations</td>
<td>minimise confounding and extraneous variables by considering: type of sampling</td>
</tr>
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<td></td>
<td>procedures; type of experiment; counterbalancing; single and double blind procedures;</td>
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<tr>
<td></td>
<td>placebos; and standardised instructions and procedures</td>
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<tr>
<td></td>
<td>determine appropriate types of investigations: experiments (including use of control</td>
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<tr>
<td></td>
<td>and experimental groups); case studies; observational studies; self-reports;</td>
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<tr>
<td></td>
<td>questionnaires; interviews; and rating scales</td>
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<td></td>
<td>use an appropriate experimental research design: independent-groups; matched-participants;</td>
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<td></td>
<td>repeated-measures; longitudinal studies; and cross-sectional studies</td>
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<td></td>
<td>select appropriate sampling procedures in selection and allocation of participants:</td>
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<td></td>
<td>random sampling; stratified sampling; random-stratified sampling; convenience sampling;</td>
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<tr>
<td></td>
<td>and random allocation of participants to groups</td>
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<tr>
<td>take into account safety and ethical</td>
<td>understand the role of ethics committees in approving research</td>
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<tr>
<td>considerations</td>
<td>apply ethical principles and professional conduct when undertaking and reporting</td>
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<tr>
<td></td>
<td>investigations, including consideration of: the role of the experimenter; protection and</td>
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<tr>
<td></td>
<td>security of participants’ information; confidentiality; voluntary participation;</td>
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<tr>
<td></td>
<td>withdrawal rights; informed consent procedures; use of deception in research;</td>
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<td></td>
<td>debriefing; and use of animals in research</td>
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<tr>
<td></td>
<td>apply relevant Health and Occupational Safety Guidelines whilst undertaking practical</td>
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<tr>
<td></td>
<td>investigations</td>
</tr>
<tr>
<td>Key science skill</td>
<td>VCE Psychology Units 1–4</td>
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<tr>
<td>------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>conduct investigations to collect and record data</td>
<td>• collect appropriate primary and/or secondary data</td>
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<td></td>
<td>• replicate procedures to obtain reliable data</td>
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<tr>
<td>analyse and evaluate data and methods</td>
<td>• use descriptive statistics including tables, bar charts, line graphs, percentages, frequency polygons, and measures of central tendency (mean, median and mode) to organise raw data</td>
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<tr>
<td></td>
<td>• use basic principles of reliability and validity in evaluating research investigations undertaken</td>
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<tr>
<td></td>
<td>• take a qualitative approach to analysing experimental errors in research investigations undertaken in terms of accuracy, precision (reproducibility), random and systematic errors, and human error</td>
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<tr>
<td>draw evidence-based conclusions</td>
<td>• distinguish between weak and strong evidence, and scientific and non-scientific ideas</td>
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<td></td>
<td>• determine whether data from an investigation supports or refutes a hypothesis or prediction being tested, or whether it leads to a new prediction or hypothesis being formulated</td>
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<td></td>
<td>• understand that conclusions derived from analysis of descriptive statistics alone are limited to the investigation data and cannot be generalised to a wider population</td>
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<td></td>
<td>• understand the use and purpose of inferential statistics in generalising research beyond the population of research interest</td>
</tr>
<tr>
<td>communicate and explain scientific ideas</td>
<td>• use appropriate scientific language, representations and conventions</td>
</tr>
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<td></td>
<td>• use a reporting format, including American Psychological Association (APA) referencing conventions</td>
</tr>
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<td></td>
<td>• use clear, coherent and cogent expression</td>
</tr>
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Unit 1: Are people programmed for life?

Thoughts, feelings and behaviours vary not only between different people, but also within individuals as they develop. In this unit, students investigate the structure and functioning of the human brain and the role the brain plays in perception, cognition and behaviour. They examine how heredity and the environment influence psychological development and consider factors that influence psychological development from biological, psychological and social perspectives. Students explore the influence that damage to the brain may have on a person’s psychological functioning and situations where psychological development may not occur as expected. They examine the contribution that classical and contemporary studies have made to an understanding of the human brain and its functions, and in the development of different psychological theories used to predict and explain thoughts, feelings and behaviours over the lifespan.

A research investigation related to brain function and/or development is to be undertaken in this unit. The investigation will draw on content from Area of Study 1 and/or Area of Study 2.

AREA OF STUDY 1
How does the brain work?
Advances in brain research methods have led to new ways of understanding the relationship between the mind, brain and behaviour. In this area of study, students examine how our understanding of brain structure and function has changed over time and how the brain enables us to interact with the external world around us. They consider the roles of specific areas of the brain and the interactions between different areas of the brain that enable complex cognitive and physical tasks to be performed. Students also consider how brain damage can impact on a person’s functioning from biological, psychological and social perspectives.

Outcome 1
On completion of this unit the student should be able to explain how understanding of brain structure and function has changed over time, compare how different areas of the brain coordinate different functions, and discuss the psychological and social effects of specific types of brain damage.

To achieve this outcome the student will draw on key knowledge outlined below and the related key science skills on pages 9 and 10 of the study design.

Key knowledge
Role of brain
- the brain as the most complex organ and master regulator of the body’s activities
- influence of different research approaches over time on the understanding of the brain as the source of behaviour, including brain vs heart debate, mind-body problem, phrenology, first brain experiments
- influence of animal studies and neuroimaging techniques on the understanding of the neuron as the primary functional unit of brain structure, and the role of glial cells (astrocytes, microglia, oligodendroglia, satellite cells and Schwann cells) in supporting neuronal function.
Areas of the brain
- human nervous system (central and peripheral nervous systems) as a communication system between the body’s internal cells and organs and external world
- role of the cerebral cortex in the processing of complex sensory information, initiation of voluntary movements and symbolic thinking
- localisation of function within the cerebral cortex, including motor, somatosensory, visual and auditory processing
- interaction between different areas of the brain to produce complex functions, including voluntary movement and language
- symmetrical and asymmetrical lateralisation of function within the cerebral cortex.

Brain damage and brain function
- psychological and social dysfunction (including frontal lobe damage, Korsakoff’s syndrome and aphasia) as a result of damage to the cerebrum including the cerebral cortex
- development of models of human neurological disorders through non-human animal studies and neuroimaging, including Parkinson’s disease.

AREA OF STUDY 2
Is everyone’s psychological development the same?
The psychological development of an individual across the lifespan involves complex interactions between biological, psychological and social factors. This area of study explores each of these factors and their importance in a person’s psychological development. Students consider the varying influence of nature and nurture during a person’s psychological development and explore how thinking and behaviour changes across the lifespan. They analyse the relevant biological, psychological and social factors that contribute to developmental difficulties or delays which may lead to atypical development in individuals.

Outcome 2
On completion of this unit the student should be able to discuss the varying influence of nature and nurture on a person’s psychological development across the lifespan, and discuss different factors that may lead to atypical psychological development.

To achieve this outcome the student will draw on key knowledge outlined below and the related key science skills on pages 9 and 10 of the study design.

Key knowledge
Nature and nurture
- free will and determinism as two approaches to explaining human behaviour
- varying influence of hereditary factors (including genes and hormones) and environmental factors (including social support and social stressors) on behaviour and mental processes
- role of critical and sensitive periods in a person’s psychological development, including language development
- role of emotional attachment in psychological development, as described by theorists including Bowlby & Ainsworth and Harlow.

Thoughts and behaviours
- infancy and adolescence as periods of rapid development and changes in brain structure and function, including synaptic pruning and frontal lobe development
- cognitive development as a relatively stable and predictable sequence of experiences, as described by theorists including Piaget
- emergence and change in a person’s understanding of morality from infancy to adulthood, as described by theorists including Kohlberg
- personality as a set of distinctive and enduring traits that can be influenced by biological, psychological and social factors
- concept of intelligence and factors that influence intelligence, including the interaction of genetic and environmental factors.
Development and abnormality

- sociocultural, functional, historical, situational, medical and statistical approaches to normality and abnormality
- role of nervous system malfunction during foetal development in the occurrence of acute and chronic psychological problems, including foetal alcohol syndrome and Down’s syndrome
- the ‘two-hit’ hypothesis as an explanation for the later onset of particular psychological disorders, including schizophrenia
- influence of deprivation of biological, psychological and social environments on a person’s psychological development, including disorganised attachment.

AREA OF STUDY 3
Research investigation

Neuroscience is an expanding field of human endeavor that aims to find out how the brain functions and develops. In this area of study students apply and extend their knowledge and skills developed in Areas of Study 1 and 2 to investigate a question related to brain function and/or development. They communicate the findings of their investigation to a selected audience and explain the psychological concepts, outline contemporary research, and analyse the scientific evidence which underpins the relevant research in response to a question of interest.

Students undertake an investigation relevant to one of the following six options. A question for the investigation is to be selected from the list under each option. For the selected question, students should refer to at least two contemporary psychological studies.

Option 1: Biopsychology
Questions that may be explored in this investigation include:
- Are different sexes psychologically, as well as biologically, different?
- Why is the blood-brain barrier important when considering behaviour?
- How do brain structures in other animals compare with those in humans?
- How robust is left/right brain dominance theory?
- How can brain trauma in sporting injuries affect cognitive function?
- Do people use all of their brain capacity?
- How ‘plastic’ is our brain?

Option 2: Brain and use of technology
Questions that may be explored in this investigation include:
- Are ‘brain training programs’ effective?
- How does the use of technology impact on brain functioning?
- Is the use of digital devices suitable for young children?
- Is the internet changing the way we think and behave?
- How has neuroimaging changed our understanding of brain structure and function?
- How can technology be used to help people recover from brain trauma or injury?

Option 3: Psychological development
Questions that may be explored in this investigation include:
- How does learning to play a musical instrument affect brain development?
- How is pre-natal development affected by environmental factors?
- Is Piaget right?
- How do different parenting styles affect the psychological development of children?
- What are the advantages and disadvantages of play-based learning for pre-school aged children?
- What can twin studies tell us about the influence of genes and environment on development?
Option 4: Intelligence and IQ testing
Questions that may be explored in this investigation include:
- Does intelligence exist?
- Is intelligence inherited or does environment have an influence?
- Is intelligence a single ability or does it involve multiple abilities?
- Is it possible to create artificial intelligence?
- Are intelligence tests biased?
- Is emotional intelligence more important than intelligence quotient in the workplace?

Option 5: Personality
Questions that may be explored in this investigation include:
- Does personality exist?
- Are personality disorders inherited?
- How relevant is Freud to modern psychological debates on personality?
- Is the person or the situation more influential in determining a person’s behaviour?
- Is vocational testing really an assessment of personality?
- Is it possible to ‘change’ a person?

Option 6: Cognition
Questions that may be explored in this investigation include:
- What happens in the brain when we feel different emotions?
- Why are humans able to create art and invent things?
- Can creativity and imagination be fostered?
- How does the brain solve problems?
- Does extra-sensory perception exist?
- How is the brain involved in ‘self-actualisation’?
- Is critical thinking different from creative thinking?

Outcome 3
On completion of this unit, the student should be able to investigate and communicate a response to a question related to brain function and/or development.

To achieve this outcome the student will draw on key knowledge below and the related key science skills on pages 9 and 10 of the study design.

Key knowledge
- characteristics of effective science communication: accuracy of scientific information; clarity of explanation of scientific concepts, ideas and models; appropriateness for purpose and audience; contextual clarity in terms of importance, authorisation and implications of findings; conciseness
- concepts specific to the investigation: definitions of key terms; use of appropriate scientific language, conventions and representations
- use of models in organising and understanding observed phenomena and psychological concepts, and their limitations
- nature of evidence: distinction between weak and strong evidence, and scientific and non-scientific ideas; consideration of the validity and reliability of data including sources of possible errors or bias
- ethical factors relevant to the selected question.

ASSESSMENT
The award of satisfactory completion for a unit is based on whether the student has demonstrated the set of outcomes specified for the unit. Assessment tasks must be a part of the regular teaching and learning program and should be completed mainly in class and within a limited timeframe.

Teachers should use a variety of assessment tasks that 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 and assessment activities.
All assessments at Units 1 and 2 are school-based. Procedures for assessment of levels of achievement in Units 1 and 2 are a matter for school decision.

Practical work is a central component of learning and assessment. As a guide, between 3½ and 5 hours of class time should be devoted to student practical work for each of Areas of Study 1 and 2. An investigation into a question related to brain function and/or development, and communication of findings, is to be planned and conducted in Area of Study 3. The investigation will draw on content from Area of Study 1 and/or Area of Study 2. Between 6 and 8 hours of class time should be devoted to undertaking the investigation and communicating findings.

For this unit students are required to demonstrate three outcomes. As a set these outcomes encompass the areas of study in the unit.

Assessment tasks for this unit are:
For Outcomes 1 and 2:
A selection from the following:
- report of a practical activity involving the collection of primary data
- research investigation involving the collection of secondary data
- brain structure modelling activity
- logbook of practical activities
- analysis of data/results including generalisations/conclusions
- media analysis/response
- problem solving involving psychological concepts, skills and/or issues
- test comprising multiple choice and/or short answer and/or extended response
- reflective learning journal/blog related to selected activities or in response to an issue

The assessment tasks may be written, oral or multi-modal.

and

For Outcome 3:
- a report of an investigation into brain function and/or development that can be presented in various formats, for example, digital presentation, oral presentation, or written report.

Where teachers allow students to choose between tasks they must ensure that the tasks they set are of comparable scope and demand.
Unit 2: What makes individuals individual?

A person’s perception, thoughts, cognition and behaviour are influenced by a variety of biological, psychological and social factors. In this unit, students investigate how perception of stimuli enables a person to interact with the world around them and how their perception can be distorted. They evaluate the role social cognition plays in a person’s perception of themselves and the way they relate to others. Students compare theories related to moral development and recognise that a person’s psychosocial development can be influenced by peers and others during adolescence, which may influence the way individuals perceive themselves and others. They examine how behaviours of some individuals and groups can become antisocial. Students examine the contribution that classical and contemporary research has made to the understanding of human perception and to the ability to predict and explain why individuals and groups behave in specific ways.

A practical investigation related to internal and external influences on behaviour is to be undertaken in this unit. The investigation will draw on content from Area of Study 1 and/or Area of Study 2.

AREA OF STUDY 1
Do individuals perceive the world differently?
Perception is influenced by a variety of factors. In this area of study, students investigate aspects of human perception, understanding the difference between sensation and perception of stimuli. They consider how biological, psychological and social factors can influence a person’s perception of stimuli, and explore circumstances where perceptual distortions occur.

Outcome 1
On completion of this unit the student should be able to compare sensation and perception for vision, touch and taste, and explain the factors which may lead to perceptual distortion.

To achieve this outcome the student will draw on key knowledge outlined below and the related key science skills on pages 9 and 10 of the study design.

Key knowledge
Sensation and perception
- sensation and perception as two complimentary but distinct roles in the reception, processing and interpretation of sensory information
- taste and vision as examples of human sensory systems, including the roles of sensory receptors and receptive fields, transmission to the brain, and representation and sensitivity in the cerebral cortex.
- influence of biological, psychological and social factors on visual perception, including depth cues, visual perception principles and perceptual set
- influence of biological, psychological and social factors on gustatory perception, including age, genetics, culture and extrinsic cues such as food packaging and appearance.
Distortion of perception
- fallibility of the visual and gustatory perception systems as demonstrated through visual illusions and in the judgment of flavours through the influence of perceptual set, colour intensity and texture
- distortion of perception of taste and vision in healthy, intact brains as providing insight into brain function related to perception, including synaesthesia.

AREA OF STUDY 2
What influences behaviour?
A person’s social cognition, attitudes and behaviour affect the way they view themselves and the way they relate to others. In this area of study, students consider the interplay of biological, psychological and social factors that shape the behaviour of individuals and groups and how these factors can be used to explain the cause and dynamics of pro-social and anti-social behaviours. They also consider the findings of classic and contemporary research as a means to explaining individual and group behaviour.

Outcome 2
On completion of this unit the student should be able to explain factors that influence individuals to behave in specific ways, and analyse ways in which others can influence individuals to behave differently.

To achieve this outcome the student will draw on key knowledge outlined below and the related key science skills on pages 9 and 10 of the study design.

Key knowledge
Social cognition
- role of person perception, attributions, attitudes and stereotypes in interpreting, analysing, remembering and using information about the social world.
- applications and limitations of the tri-component model of attitudes.

External influences on behaviour
- influence of peers and role models during adolescence, as described by theorists including Erickson
- characteristics of, and factors influencing, pro-social behaviour and anti-social behaviour
- influence of status and social power within groups, obedience and conformity on individual behavior, as described by theorists including Zimbardo, Milgram and Asch
- positive and negative influence of media on individual and group behaviour, including advertising, television, video games and social media.

Anti-social behaviour
- explanations of aggression from ethological, biological, psychodynamic and social learning perspectives
- factors that influence bullying behavior and the effects of bullying behavior, including cyberbullying
- influences of biological, social and psychological factors on criminal offending and/or reoffending including genetics, a person’s social environment and upbringing, and acquired brain injury or underlying mental illness as precipitating and/or perpetuating factors.
AREA OF STUDY 3

Practical investigation
In this area of study students design and conduct a practical investigation related to internal and/or external influences on behaviour. The investigation should relate to ideas and skills developed in Areas of Study 1 and/or 2 and may be investigated directly by the student though laboratory work, surveys, questionnaires, observational studies and/or the use of rating scales.

The investigation requires the student to ask a question, plan a course of action that attempts to answer the question, undertake an investigation to collect the appropriate primary qualitative and/or quantitative data, organise and interpret the data and reach a conclusion in response to the question.

Outcome 3
On completion of this unit, students will be able to undertake an investigation related to internal and external influences on behaviour.

To achieve this outcome the student will draw on knowledge outlined below and the related key science skills on pages 9 and 10 of the study design.

Key knowledge
- prediction arising from the identification of an investigation question
- psychological concepts specific to the investigation, including definitions of key terms, and representations
- characteristics of scientific research methodologies and techniques of primary qualitative and quantitative data collection relevant to the investigation: laboratory work (tests of sensory perception); surveys, questionnaires, observational studies, the use of rating scales
- ethics and issues of research: identification and application of relevant health, safety and bioethical guidelines; use of human subjects; repeatability, reproducibility, reliability and validity of data; minimisation of experimental bias
- methods of organising, analysing and evaluating primary data: descriptive statistics; limitations of data and methodologies
- key findings of the selected investigation and their relationship to psychological concepts and theories
- nature of evidence that supports or refutes a hypothesis
- conventions of scientific report writing: psychological language, representations, conventions, standard abbreviations and referencing.

ASSESSMENT
The award of satisfactory completion for a unit is based on whether the student has demonstrated the set of outcomes specified for the unit. Assessment tasks must be a part of the regular teaching and learning program and should be completed mainly in class and within a limited timeframe.

Teachers should use a variety of assessment tasks that 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 and assessment activities.

All assessments at Units 1 and 2 are school-based. Procedures for assessment of levels of achievement in Units 1 and 2 are a matter for school decision.

Practical work is a central component of learning and assessment. As a guide, between 3½ and 5 hours of class time should be devoted to student practical work for each of Areas of Study 1 and 2. A practical investigation into internal and/or external influences on behaviour is to be undertaken in Area of Study 3. The investigation will draw on content from Area of Study 1 and/or Area of Study 2. Between 6 and 8 hours of class time should be devoted to undertaking the investigation and communicating findings.

For this unit students are required to demonstrate three outcomes. As a set these outcomes encompass all areas of study in the unit.
Assessment tasks for this unit are:
For Outcomes 1 and 2:
A selection from the following:
- report of a practical activity involving the collection of primary data
- research investigation involving the collection of secondary data
- logbook of practical activities
- analysis of data/results including generalisations/conclusions
- media analysis/response
- problem solving involving psychological concepts, skills and/or issues
- test comprising multiple choice and/or short answer and/or extended response
- reflective learning journal/blog related to selected activities or in response to an issue

The assessment tasks may be written, oral or multi-modal. and

For Outcome 3:
- a report of an investigation into internal and/or external influences on behaviour that can be presented in various formats, for example, digital presentation, oral presentation, scientific poster or written report.

Where teachers allow students to choose between tasks they must ensure that the tasks they set are of comparable scope and demand.
Unit 3: Does experience change thinking?

The nervous system influences behaviour and experience. In this unit, students explore both macro-level and micro-level functioning of the nervous system in order to understand how the human nervous system enables a person to interact with the world around them. They explain how damage to the nervous system may impact on a person's psychological functioning and consider the causes and management of stress. Students investigate how mechanisms of memory and learning lead to the acquisition of knowledge, the development of new capacities and changed behaviours. They consider the limitations and fallibility of memory, and how memory can be improved. Students examine the contribution that classical and contemporary research has made to the understanding of the structure and function of the nervous system and the understanding of biological, psychological and social factors that influence learning and memory.

A practical investigation related to mental processes and psychological functioning is to be undertaken in Unit 3, in Unit 4 or across both Units 3 and 4, and will be assessed in Unit 4 as Outcome 3.

AREA OF STUDY 1
What does the nervous system do?
The complexity of the nervous system enables the thinking, feeling and behaviour that are unique to humans as a species. In this area of study, students understand the role of different branches of the nervous system in enabling a person to integrate, coordinate and respond to internal and external sensory stimuli. They explore the specialised structures of the neuron that allow the nervous system to transmit neural information. Biological, psychological and social perspectives are used to evaluate how damage to a person's nervous system can impact on functioning. Students consider the ways in which stress can impact on the mind and body, the role that the nervous system plays in these processes and how stress can be managed.

Outcome 1
On completion of this unit the student should be able to explain how the structure and function of the human nervous system enables a person to interact with the external world, describe the effects of damage to the nervous system, and discuss the causes, effects and management of stress.

To achieve this outcome the student will draw on key knowledge outlined below and the related key science skills on page xx

Key knowledge
Nervous system
- roles of different divisions of the nervous system (central and peripheral nervous system and their associated divisions) in integrating, coordinating and responding to sensory information received by the body
- the neuron (dendrites, axon, myelin and axon terminals) as the primary cell that is involved in the reception and transmission of information at the synapse
• role of neurotransmitters in the transmission of neural information between neurons (lock and key process) to produce excitatory effects (as with glutamate or dopamine) or inhibitory effects (as with gamma amino butyric acid [GABA] or serotonin).

Malfunction of the nervous system
• effects of acute and/or chronic changes to the nervous system due to interference to neurotransmitter function, specifically the therapeutic use of Botox and the role of dopamine in Parkinson’s disease
• effects of permanent changes (in utero or later in life) on the functioning of the nervous system, specifically Tourette’s syndrome and Huntington’s disease.

Stress
• stress (including eustress and distress) as a pattern of physiological states and psychological responses based on subjective appraisal and perceived ability to cope
• activation of the “fight-flight” response by the sympathetic nervous system as a survival response
• activation of the hypothamic-pituitary-adrenal (HPA) axis as an adaptive response
• role of HPA axis in the neurobiology of mental illnesses including generalised anxiety disorders
• impact of chronic stressors on the functioning of the immune system
• psychological explanations of stress management techniques.

AREA OF STUDY 2
How do people learn and remember?
Memory and learning are a core component of human identity: they connect past experiences to the present and shape futures by enabling adaption to daily changes in the environment. In this area of study, students study the neural basis of memory and learning and examine factors that influence the learning of new behaviours and the storage and retention of information in memory. They also consider the fallibility of memory from biological, psychological and social perspectives.

Outcome 2
On completion of this unit the student should be able to apply both neural and psychological perspectives to explain how new information can be learnt and stored in memory, and outline biological and psychological factors that explain a person’s inability to remember information.

To achieve this outcome the student will draw on key knowledge outlined below and the related key science skills on page xx

Key knowledge

Neural basis of learning and memory
• neural plasticity and changes to connections between neurons, including long-term potentiation and long-term depression, as the fundamental mechanisms of memory formation that leads to learning
• roles of different neurotransmitters in the neural basis of memory and learning, including the role of adrenaline in long-term memory and the role of glutamate in synaptic plasticity.

Models to explain learning
• classical conditioning as a three-phase process (before conditioning, during conditioning and after conditioning) that results in the association between a neutral stimulus and unconditioned stimulus to produce a conditioned response
• operant conditioning as a three-phase model (antecedent, behaviour, consequence) involving rewards and punishments that can be used to change voluntary behaviours
• observational learning as a method of social learning, particularly in children, involving attention, retention, reproduction, motivation and reinforcement.
Models to explain memory
- differences in the storage of information in memory based on the type of information to be stored, as explained by the multi-store model of memory (Atkinson-Shriffin) in terms of the function, capacity and duration of sensory, short-term and long-term memory
- interaction between specific regions of the brain (cerebral cortex, hippocampus, amygdala and cerebellum) in the storage of long-term memories, including implicit and explicit memories.

Reliability of memory
- methods to retrieve information from memory or demonstrate the existence of information in memory, including recall, recognition, relearning and reconstruction
- effects of brain trauma to areas of the brain associated with memory and neurodegenerative diseases, including amnesia and dementia (specifically Alzheimer’s disease)
- psychological factors influencing a person’s ability and inability to remember information, including context and state dependent cues, maintenance and elaborative rehearsal and serial position effect
- reconstruction of memories as evidence for the fallibility of memory, as described by Loftus’ research into the effect of leading questions on eye-witness testimonies.

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 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 and assessment activities.

Practical work and assessment
Practical work is a central component of learning and assessment. As a guide, between 3½ and 5 hours of class time should be devoted to student practical work for each of Areas of Study 1 and 2. A practical investigation related to mental process and psychological functioning is to be undertaken in Unit 3, in Unit 4 or across both Unit 3 and Unit 4, and will be assessed in Unit 4 as Outcome 3. The outcomes of the investigation will be presented in a scientific poster format. Between 7 and 10 hours of class time should be devoted to the investigation, including writing of the sections of the scientific poster.

Assessment of levels of achievement
The student’s level of achievement in Unit 3 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 timeframe.
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 Advice for teachers for this study, which includes advice on the design of assessment tasks and the assessment of student work for a level of achievement.
Teachers will provide to the VCAA 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.

Contribution to final assessment
School-assessed Coursework for Unit 3 will contribute 16 per cent to the study score.
### Outcomes

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Marks allocated*</th>
<th>Assessment tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome 1</strong>&lt;br&gt;Explain how the structure and function of the human nervous system enables a person to interact with the external world, describe the effects of damage to the nervous system, and discuss the causes, effects and management of stress.</td>
<td>30</td>
<td>At least one task selected from:&lt;br&gt;• annotations of at least two practical activities from a practical logbook&lt;br&gt;• evaluation of research&lt;br&gt;• report of a student investigation&lt;br&gt;• analysis of data including generalisations and conclusions&lt;br&gt;• media analysis/response&lt;br&gt;• extended response questions&lt;br&gt;• reflective blog related to the function of the nervous systems and/or the management of stress (approximately 50 minutes)</td>
</tr>
<tr>
<td><strong>Outcome 2</strong>&lt;br&gt;Apply both neural and psychological factors to explain how new information can be learnt and stored in memory, and outline biological and psychological perspectives that can explain a person’s inability to remember information.</td>
<td>30</td>
<td>Reflection related to at least two practical activities from a practical logbook on the significance of biological and psychological factors on learning and memory (approximately 50 minutes)</td>
</tr>
</tbody>
</table>

**Total marks** 60

*School-assessed Coursework for Unit 3 contributes 16 per cent.*
Unit 4: All in the mind?

Consciousness and mental health are psychological states that can be explored by studying the relationship between the mind, brain and behavior. In this unit, students analyse the nature of consciousness and altered states of consciousness including sleep. They consider the role of sleep and the impact that sleep disturbances may have on a person’s functioning. Students study the interaction between biological, psychological and social factors that contribute to the vulnerability of an individual to mental illness. They apply a biopsychosocial framework to understand possible contributing and management factors in the study of an affective/mood disorder (major depressive disorder) and a psychotic disorder (schizophrenia).

Students examine the contribution that classical and contemporary research has made to the understanding of consciousness, including sleep, and the development of an individual’s mental functioning and wellbeing.

A practical investigation related to mental processes and psychological functioning is to be undertaken in Unit 3, in Unit 4 or across both Units 3 and 4, and will be assessed in Unit 4 as Outcome 3.

AREA OF STUDY 1
What are the effects of different levels of consciousness?
Differences in levels of awareness of sensations, thoughts and surroundings influence individuals’ interactions with their environment and others. In this area of study, students focus on states of consciousness and the relationship between consciousness and thoughts, feelings and behaviours. They understand the different ways in which consciousness can be studied from a psychological perspective and how states of consciousness can be altered. They consider the nature and importance of sleep and apply biological, psychological and social perspectives to understand the effect of sleep disturbances on psychological functioning.

Outcome 1
On completion of this unit the student should be able to compare different states of consciousness, explain the purpose and nature of sleep, and discuss the effects of sleep disruption on a person’s functioning.

To achieve this outcome the student will draw on key knowledge outlined below and the related key science skills on pages 9 and 10 of the study design.

Key knowledge
Consciousness
- consciousness as a construct in terms of the awareness of self, objects and events in the external world
- measurement of physiological responses to indicate different states of consciousness, including electroencephalograph (EEG), electromyograph (EMG), electro-oculargraph (EOG), heart rate, body temperature and galvanic skin response (GSR)
levels of human conscious awareness as a continuum that may be categorised into normal waking consciousness and altered states of consciousness.

**Altered states of consciousness**
- altered states of consciousness as either naturally occurring (with specific reference to sleep), or induced (with specific reference to meditation)
- changes in a person’s psychological state due to altered states of consciousness, including level of awareness, content limitations, perceptual and cognitive distortions, emotional awareness, self-control and time orientation
- changes in brain functioning due to drug-induced altered states of consciousness (stimulants and depressants).

**Sleep**
- sleep as a regularly and naturally occurring altered state of consciousness that follows a circadian rhythm and involves the ultradian rhythms of REM and NREM sleep
- theories of the purpose and function of sleep, including restoration theory, memory consolidation theory and evolutionary theory
- purpose and function of REM and NREM sleep
- influence of circadian rhythms on human sleep patterns including effects of local environmental cues including daylight
- variation in the total amount of sleep and a person’s typical pattern of sleep (proportion of REM and NREM) across the lifespan.

**Sleep disturbances**
- influence of biological, psychological and social factors (sleep-wake cycles shift in adolescence, shift work and jet lag) on a person’s sleep-wake cycle and susceptibility to experiencing a sleep disorder
- effects of partial sleep deprivation (inadequate sleep, either in quantity or quality) on a person’s psychological functioning and wellbeing
- different types of sleep disorders, including hypersomnias (trouble staying awake including narcolepsy), insomnias (trouble maintaining sleep) or parasomnias (abnormal sensations or behaviours during sleep including night terrors and sleep apnea).

**AREA OF STUDY 2**

**What is mental health?**
In this area of study, students examine the concepts of mental health and mental wellbeing and how mental illnesses are classified. They consider biological, psychological and social factors that may result in some people being more vulnerable to mental illness than others and apply a biopsychosocial framework to the study of major depressive disorder and schizophrenia. Students explore the concept of mental health and critically examine strategies that are used to maintain mental health.

**Outcome 2**
On completion of this unit the student should be able to explain the concepts of mental health and mental illness, apply a biopsychosocial framework to explain the causes and management of major depressive disorder and schizophrenia, and critically examine strategies proposed to maintain mental health.

To achieve this outcome the student will draw on key knowledge outlined below and the related key science skills on pages 9 and 10 of the study design.
Key knowledge

Mental health

- psychological health as a continuum commonly differentiated into mental health and mental illness
- characteristics of mental health, including high levels of functioning, social and emotional well-being, and absence or effective treatment of mental disorders
- uses of systems of classification (discrete, categorical and dimensional) to differentiate between health, illness and times of stress, and the limits of such systems including reliability (with specific reference to perceived pathologising of normal states including grief); validity (with specific reference to no identifiable links to the biology of a disorder).

Mental illness

- predisposing factors that increase susceptibility to mental illness, including genetic risk (biological), personality (psychological) and disorganised attachment (social)
- precipitating factors that increase susceptibility as well as contributing to the occurrence of mental illness, including substance use/abuse (biological), stress (psychological) and socioeconomic status (social)
- perpetuating factors that inhibit recovery from a mental illness, including ongoing substance use and poor response to medication due to genetic factors (biological), poor self-esteem (psychological), and stigma and isolation/marginalisation from peer group (social)
- protective factors that prevent or reduce susceptibility to mental illness, including physical exercise and medication (biological), cognitive behaviour therapy (CBT) and meditation (psychological), and family support and social skills training (social)
- use of a biopsychosocial framework to understanding the etiology and management of major depressive disorder (illuminative of an affective/mood disorder) including the relative influences of contributing factors (dysregulation of serotonin and effect of brain derived neurotropic factor (BDNF)) and management factors (antidepressant medications, cognitive behaviour therapy (CBT), and family support and social skills training (social)
- use of a biopsychosocial framework to understanding the etiology of schizophrenia (illuminative of a psychotic disorder) including the relative influences of contributing factors (drug-induced onset, impaired reasoning and memory and social disadvantage) and management factors (neurotransmitter agonist and antagonist medications, cognitive behaviour therapy (CBT) and social skills training).

Maintenance of mental health

- psychological explanations for strategies that promote mental health, including importance of adequate sleep and development of positive relationships
- distinction between appraisal-focused, problem-focused and emotion-focused coping strategies in reducing impacts of stressors.

AREA OF STUDY 3

Practical investigation

An investigation related to mental processes and psychological functioning is to be undertaken in Unit 3, in Unit 4 or across Units 3 and 4. The investigation should relate to ideas and skills developed in Unit 3, Unit 4, or across Units 3 and 4, and may be investigated directly by the student through an appropriate experimental research design involving independent-groups, matched-participants, repeated measures or a cross-sectional study.

The investigation requires the student to ask a question, formulate a research hypothesis including operationalised variables, plan a course of action that attempts to answer the question and that takes into account safety and ethical considerations, undertake an experiment which involves the collection of primary qualitative and/or quantitative data, analyse and evaluate the data, identify limitations of data and methods, link experimental results to science ideas, reach a conclusion in response to the question and suggest further investigations which may be undertaken. Results should be communicated in a scientific poster format according to a provided template which is included below and elaborated in the the Advice for teachers. A practical work folio should be maintained by the student for record, authentication and assessment purposes.
Outcome 3

On the completion of this unit the student should be able to design and undertake an investigation related to mental processes and psychological functioning, and present their methodologies, findings and conclusions as a scientific poster.

To achieve this outcome the student will draw on key knowledge below and the related key science skills on pages 9 and 10 of the study design.

Key knowledge

- body of knowledge specific to the investigation and its significance, including definitions of key terms and concepts
- characteristics of scientific research methodologies and techniques of primary qualitative and quantitative data collection relevant to the selected investigation
- independent, dependent and controlled variables and operationalisation of variables
- ethics and issues of research: identification and application of relevant ethical, health and safety guidelines; repeatability, reproducibility, reliability and validity of data; minimisation of experimental bias and confounding and extraneous variables
- methods of organising, analysing and evaluating primary data: descriptive statistics; limitations of data and methodologies; limitations of descriptive statistics
- key findings of the selected investigation and their relationship to key psychological concepts
- conventions of scientific report writing: psychological language, conventions, and correct acknowledgement of references using APA guidelines.

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 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 and assessment activities.

Practical work and assessment

Practical work is a central component of learning and assessment. As a guide, between 3½ and 5 hours of class time should be devoted to student practical work for each of Areas of Study 1 and 2. A practical investigation related to mental processes and psychological functioning is to be undertaken in Unit 3, in Unit 4 or across both Unit 3 and Unit 4, and will be assessed in Unit 4 as Outcome 3. The outcomes of the investigation will be presented in a scientific poster format. Between 7 and 10 hours of class time should be devoted to the investigation, including writing of the sections of the scientific poster.

Assessment of levels of achievement

The student’s level of achievement in Unit 4 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 timeframe.

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 Advice for teachers for this study, which includes advice on the design of assessment tasks and the assessment of student work for a level of achievement.

Teachers will provide to the VCAA 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.
**Contribution to final assessment**

School-assessed Coursework for Unit 4 will contribute 24 per cent to the study score.

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Marks allocated*</th>
<th>Assessment tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome 1</strong>&lt;br&gt;Compare different states of consciousness, explain the purpose and nature of sleep, and discuss the effects of sleep disruption on a person’s functioning.</td>
<td>30</td>
<td>At least one task selected from:&lt;br&gt;- annotations of at least two practical activities from a practical work folio&lt;br&gt;- report of a student investigation&lt;br&gt;- analysis of data including generalisations and conclusions&lt;br&gt;- media analysis/response&lt;br&gt;- extended response questions&lt;br&gt;- reflective learning journal/blog related to consciousness and/or sleep&lt;br&gt;(approximately 50 minutes)</td>
</tr>
<tr>
<td><strong>Outcome 2</strong>&lt;br&gt;Explain the concepts of mental health and mental illness, apply a biopsychosocial framework to explain the causes and management of major depressive disorder and schizophrenia, and critically examine strategies proposed to maintain mental health.</td>
<td>30</td>
<td>At least one task (which is different from the task/s for Outcome 1) selected from:&lt;br&gt;- annotations of at least two practical activities from a practical work folio&lt;br&gt;- report of a student investigation&lt;br&gt;- analysis of data including generalisations and conclusions&lt;br&gt;- media analysis/response&lt;br&gt;- extended response questions&lt;br&gt;- reflective learning journal/blog related to mental health and/or mental illness&lt;br&gt;(approximately 50 minutes)</td>
</tr>
<tr>
<td><strong>Outcome 3</strong>&lt;br&gt;Design and undertake an investigation related to mental processes and psychological functioning, and present their methodologies, findings and conclusions as a scientific poster.</td>
<td>30</td>
<td>Structured scientific poster according to VCAA template&lt;br&gt;(maximum 1000 words)</td>
</tr>
<tr>
<td><strong>Total marks</strong></td>
<td><strong>90</strong></td>
<td></td>
</tr>
</tbody>
</table>

*School-assessed Coursework for Unit 4 contributes 24 per cent.
Unit 4 Outcome 3 – Investigation presented as a scientific poster

Unit 4 Outcome 3 requires that students communicate investigation findings as a scientific poster. The poster may be produced electronically or in hard copy format, and should not exceed 1000 words. Students must select information carefully so that they meet the word limit. The production quality of the poster will not form part of the assessment.

The template below provides details about construction of the poster by students and assessment of the poster by teachers.

<table>
<thead>
<tr>
<th>Poster section</th>
<th>Key science skill from pages 9 and 10 of the study design.</th>
<th>Poster section content</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>select questions, formulate hypotheses and make predictions</td>
<td>Question under investigation is the title</td>
<td>required</td>
</tr>
<tr>
<td>Introduction</td>
<td></td>
<td>Explanation of reason for undertaking the investigation, including relevant background psychological concepts</td>
<td>10</td>
</tr>
<tr>
<td>Hypothesis</td>
<td></td>
<td>Stated in “If…then…” or other recognised format</td>
<td>5</td>
</tr>
<tr>
<td>Methodology</td>
<td>plan and undertake investigations</td>
<td>Clear methodology</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>take into account safety and ethical considerations</td>
<td>Identification and management of risks: consideration of relevant health, safety and ethical guidelines</td>
<td>5</td>
</tr>
<tr>
<td>Results</td>
<td>conduct investigations to collect and record data</td>
<td>Data collection and recording in practical logbook</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Presentation of data in appropriate format to illustrate trends, patterns or relationships</td>
<td>10</td>
</tr>
<tr>
<td>Discussion</td>
<td>analyse and evaluate data, methods and opinions</td>
<td>Analysis and evaluation of data</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Identification of outliers and their subsequent treatment</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Identification of limitations in data and methods, and suggested improvements</td>
<td></td>
</tr>
<tr>
<td></td>
<td>connect scientific ideas</td>
<td>Linking of results to relevant psychological concepts</td>
<td>10</td>
</tr>
<tr>
<td>Conclusion</td>
<td>draw evidence-based conclusions</td>
<td>Conclusion that provides a response to the question</td>
<td>5</td>
</tr>
<tr>
<td>Throughout the poster</td>
<td>communicate scientific ideas</td>
<td>Correct use of scientific language, units, symbols and representations</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clear, coherent, cogent expression</td>
<td>5</td>
</tr>
</tbody>
</table>
EXTERNAL ASSESSMENT
The level of achievement for Units 3 and 4 is also assessed by an end-of-year examination, which will contribute 60 per cent.

End-of-year examination
Description
The examination will be set by a panel appointed by the VCAA. All the key knowledge and key skills that underpin the outcomes in Units 3 and 4 are examinable.

Conditions
The examination will be completed under the following conditions:
• Duration: 2.5 hours.
• Date: end-of-year, on a date to be published annually by the VCAA.
• VCAA examination rules will apply. Details of these rules are published annually in the VCE and VCAL Administrative Handbook.
• The examination will be marked by assessors appointed by the VCAA.

Contribution to final assessment
The examination will contribute 60 per cent.

Further advice
The VCAA publishes specifications for all VCE examinations on the VCAA website. Examination specifications include details about the sections of the examination, their weighting, the question format/s and any other essential information. The specifications are published in the first year of implementation of the revised Units 3 and 4 sequence together with any sample material.