

VCE Psychology

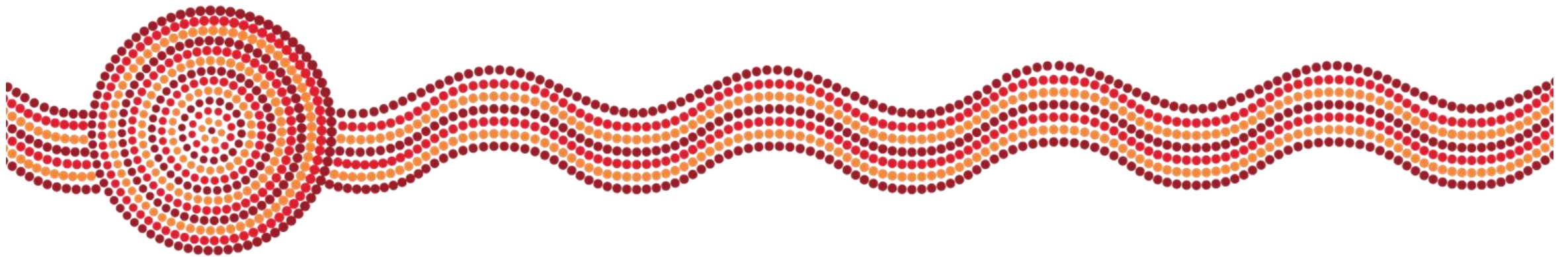
Implementation of VCE Study Design for 2023
Introduction and overview of Unit 2

2022

Acknowledgment of Country

I would like to acknowledge the traditional custodians of the many lands across Victoria on which each of you are living, learning and working. For myself, I acknowledge the Dja Dja Wurrung as the traditional custodians of the land from which I am presenting today.

I would like to pay my respects to Elders past, present and emerging, for they hold the memories, traditions, culture and hopes of all Aboriginal and Torres Strait Islander peoples across the nation.



Developing a Unit 1 and 2 curriculum and assessment program

- **Each school is different:**
 - different contexts in which students operate
 - different circumstances in which schools are situated
- **Students will have different:**
 - strengths and talents
 - available resources
- **Schools have flexibility in:**
 - designing curriculum programs that meet the needs of their cohort and the context in which they are learning
 - developing assessment programs that are aligned to the *VCE Psychology Study Design* and comply with VCE assessment principles.

Key considerations

- **Integrate the Cross-study specifications, including the key science skills listed on pages 12 & 13 of Study Design**
- **A minimum of 10 hours of practical activities across Area of Study 1 and 2**
- **Use of logbook**
- **Contextualise to fit the needs of your cohort**

Planning template



Provide details of the outcome, time period (Term/Week–Term/Week), key knowledge and key science skills <i>(from the study design)</i>	List and describe the learning activities that will be used to provide appropriate opportunity for students to demonstrate satisfactory achievement of the outcome (this includes practical activities, demonstrations and excursions/field work)	List and describe the assessment tasks that will be used to assess students level of achievement. Include an estimate of when each task will occur
Unit 1, Outcome 1: <insert outcome statement – see VCE study design>		
Anticipated teaching time allocation: <insert as appropriate; e.g. Term 1 Week 1 – Term 1 Week 6>		
Key knowledge: <ul style="list-style-type: none"> <Select as appropriate. See VCE study design> 	Psychology Units 1–4 Key science skills: <ul style="list-style-type: none"> <Select as appropriate. See VCE study design> 	<Consider a range of resources when developing appropriate learning activities; e.g. VCE Advice for Teachers located on the VCAA website: www.vcaa.vic.edu.au/curriculum/vce/vce-study-designs/psychology/advice-for-teachers/Pages/Index.aspx – ensure that any activities directly sourced from a public resource are contextualised to your school/provider’s approach>
		<Select and describe as appropriate. See the VCE study design. Include an estimate of when the task will occur>

Whilst designed specifically for schools seeking to deliver a VCE study for the first time, the [VCE Curriculum and Assessment Plans](#) are a useful tool for all teachers in planning assessment.

Unit 2, Outcome 1: How are people influenced to behave in particular ways?

Anticipated teaching time allocation: Term 1, weeks 1-8

Key knowledge	Key science skills	Learning Activities	Assessment Tasks
<ul style="list-style-type: none"> the role of person perception, attributions, attitudes and stereotypes in interpreting, analysing, remembering and using information about the social world, including decision-making and interpersonal interactions 	<ul style="list-style-type: none"> analyse and evaluate psychological issues using relevant ethical concepts and guidelines, including the influence of social, economic, legal and political factors relevant to the selected issue use clear, coherent and concise expression to communicate to specific audiences and for specific purposes 	<p>Classification: Identify and classify the usefulness and limitations of stereotypes and person perception in decision making and interpersonal interactions</p> <p>Process development: Person perception and stereotyping greatly influences recruitment for employment and can lead to biased and unfair hiring. Create a process that recruiters could use to reduce bias</p> <p>Fieldwork: Visit the Dax Collection (Kenneth Myer Building, Royal Parade) to investigate attitudes and stigma</p>	<p>S/N assessment for evidence of satisfactory completion of outcome-</p> <p>Logbook activity – Recruitment process task</p>
<ul style="list-style-type: none"> the avoidance of cognitive dissonance using cognitive biases 	<ul style="list-style-type: none"> discuss relevant psychological information, ideas, concepts, theories and models and the connections between them acknowledge sources of information and assistance, and use standard scientific referencing conventions 	<p>In terms of cognitive dissonance and cognitive biases discuss why people may believe inaccurate news reporting or internet hoaxes</p> <p>Case study: Analyse case studies of real life scams (scamwatch.gov.au/get-help/real-life-stories) in terms of cognitive biases</p> <p>Read Aesops fable of the fox and grapes and relate to cognitive dissonance</p>	<p>S/N assessment for evidence of satisfactory completion of outcome-</p> <p>Logbook activity – Case study analysis</p>

Unit 2 Structure

Unit titles	Area of Study titles
<p>Unit 2: How do internal and external factors influence behaviour and mental processes?</p>	<p>Area of Study 1: How are people influenced to behave in particular ways?</p> <p>Area of Study 2: What influences a person's perception of the world?</p> <p>Area of Study 3: How do scientific investigations develop understanding of influences on perception and behaviour?</p>

Unit 2 Area of Study 1

On completion of this unit the student should be able to **analyse how social cognition influences individuals to behave in specific ways, and evaluate factors that influence individual and group behaviour.**

To achieve this outcome students will draw on key knowledge outlines in Area of Study 1 and relevant key science skills on pages 12 and 13 of the study design.

Unit 2, AOS 1 - Key knowledge

Social cognition

- the role of person perception, attributions, attitudes and stereotypes in interpreting, analysing, remembering and using information about the social world, including decision-making and interpersonal interactions
- the avoidance of cognitive dissonance using cognitive biases
- the positive and negative influences of heuristics as mechanisms for decision-making and problem-solving
- the influence of prejudice, discrimination and stigma within society on a person's and/or group's mental wellbeing and ways to reduce it

Factors that influence individual and group behaviour

- the influence of social groups and culture on individual behaviour
- the concepts of obedience and conformity and their relative influence on individual behaviour
- positive and negative influences of different media sources on individual and group behaviour, such as changing nature of social connections, social comparison, addictive behaviours and information access
- the development of independence and anti-conformity to empower individual decision-making when in groups

Safety and wellbeing

Given the potential sensitive nature of some content in this AOS you are encouraged to:

- **Set guidelines for discussion**
- **Have clear means for students to check in**
- **Be mindful of the examples/scenarios that you use**
- **Incorporate a range of voices and resources**
- **Keep focus on the theory and the impact on mental wellbeing**

Scientific Investigation Methodology	Unit 2 Area of Study 1 Examples
Case study	Analyse case studies of real life scams (https://www.scamwatch.gov.au/get-help/real-life-stories) in terms of cognitive biases
Classification and identification	Identify and classify the usefulness and limitations of stereotypes and person perception in decision making and interpersonal interactions
Controlled experiment	Design a controlled experiment to test the effectiveness of 3 different anti-stigma campaigns (eg. brochure, online education videos, face to face education program). Include a prediction on possible outcomes of the investigation.
Correlational study	<p>Design a correlational study looking at one of the following:</p> <ul style="list-style-type: none"> • Relationship between time spent on social media and perception of social connectedness • Time spent viewing commercial television and attitude towards sports gambling
Fieldwork	Explore the Headspace Website page Yarn Safe to consider how stigma is being challenged in different ways. Suggest ways you could use fieldwork to evaluate the effectiveness of the website in altering perceptions of mental health and seeking support.
Literature review	Carry out a literature review on the effectiveness of intergroup contact to reduce prejudice. Include the collation and analysis of at least 3 sources of secondary data OR the role of music in antisocial behaviour.
Modelling	Relate the tricomponent model of attitudes to a series of case studies
Product, process or system development	Person perception and stereotyping greatly influences recruitment for employment and can lead to biased and unfair hiring. Create a process or system that recruiters could use to reduce bias.
Simulation	Research the Empathy Simulation Training Suit designed by The University of Sydney for clinical staff training

New dot point AOS1- Cognitive dissonance and cognitive biases

- Play a game in which students have to try and make their partner smile or laugh by coming up with the most ridiculous example of cognitive dissonance
- Investigate the Festinger and Carlsmith 1959 study on cognitive dissonance and present the findings as a flow chart diagram, including an evaluation of validity
- Carry out the Wason Rule Discovery Test with the class followed by a discussion on the tendency to favour information that supports one's own hypotheses
- Websearch the article: Just an Instance of 'Wrong place at the wrong time'. Generates excellent discussion related to just world belief.

New dot point AOS1- Cognitive dissonance and cognitive biases

Present the class with the following riddle: ‘a father and son are in a horrible car crash that kills the dad. The son is rushed to the hospital; just as he’s about to go under the knife, the surgeon says, “I can’t operate—that boy is my son!”.’ Explain.

Record and graph students' initial explanation to the riddle.

Compare the class findings to Belle et. al 2020 and discuss the concept of reproducibility

Integration of cross study specifications

KEY SCIENCE SKILLS

- Generate and record primary data
- Discuss the implications of research findings

CRITICAL & CREATIVE THINKING

- Consider alternatives

ETHICAL UNDERSTANDING

- Recognise the importance of values and social factors in responsible science-related decision making

INDIVIDUAL & COLLABORATIVE SCIENTIFIC ENDEAVOUR

- Offer viewpoints and suggestions while respecting the perspectives of others

New dot point AOS1- Heuristics

- **Role play the use of heuristics in different decision making scenarios (eg. buying a new mobile phone, working out where to go on holiday, deciding if a website is trustworthy)**
- **Heuristics are often used to manipulate the behaviour of consumers. Prepare a pamphlet or brochure that explains 4 common heuristics in terms of consumer behaviour and provides suggestions to minimise their effects**
- **Use a PMI (pluses, minuses, interesting) chart to analyse the benefits and limitations of heuristics as mechanisms for decision making and problem solving**
- **Debate whether a hot dog is a type of sandwich and relate to the representativeness heuristic**

Overview of task

Step 1: Advise students that you will be asking them three questions. For each question they are to jot down the immediate answer that comes to mind (yes, no, don't know).

Step 2: Ask the following three questions ensuring that there is no discussion and that responses are noted quickly:

- Has the number of Australian secondary school students drinking alcohol been increasing since 1996?
- Has the number of Australian secondary school students carrying out risky drinking been increasing since 1996?
- Has the number of Australian secondary school students using cannabis been increasing since 1996?

Step 3: Collate the class data to determine what percentage of students answered yes / no / don't know to each question.

Step 4: As a class access the latest [Australian Secondary Students Alcohol and Drug \(ASSAD\) survey](#)

Step 5: Discuss the following points:

- Are the class results in line with the findings of the ASSAD survey?
- If students were more likely to believe that alcohol and cannabis use was increasing, discuss in relation to the availability heuristic.
- For those who answered yes, what were some of the reasons that immediately came to mind? This may include media reporting, stereotypes, and a limited personal sample. Relate to the availability heuristic.

Detailed example [from the VCAA Teaching and Learning activities](#)

New dot point AOS1- Influence of stigma on wellbeing

- **Create a flow chart or poster focussing on a specific type of prejudice and how this links to discrimination, stigma and mental wellbeing**
- **Design a controlled experiment to test the effectiveness of three different anti-stigma campaigns (eg. brochure, online education videos, face to face education program). Predict possible outcomes of the investigation**
- **Explore the Headspace webpage Yarn Safe to consider how stigma is being challenged in different ways. Suggest ways you could use fieldwork to evaluate the effectiveness of the website in altering perceptions of mental health and seeking support**

New dot point AOS1- Influence of social groups and culture

- **Identify whether a range of cultures would be classed as individualist or collectivist. Link to the methodology of classification**
- **Organise team work activities (eg. Lost at Sea, egg drop) as a starting point to discuss groupthink, groupshift and social loafing**
- **Create a blog that explores representations of social group influence (such as group think, groupshift, deindividuation, social loafing) in media formats such as movies, TV shows, books and music**

New dot point AOS1- Positive and negative influences of media sources

- **Use a Venn diagram to compare social connections on social media compared to face-to-face**
- **Discuss the influences of social media by creating a movable human Likert scale. Possible points of discussion include:**
 - ~ **Social media encourages bullying and anti-social behaviour**
 - ~ **Social media increases social comparison and can be harmful to health**
- **Tristan Harris, Google’s former design ethicist, has called smartphones “The Slot Machine in Your Pocket”. Carry out secondary research to understand the link between smartphones and gambling**

Unit 2 assessment

Procedures for the assessment of levels of achievement in Units 1 and 2 are a matter for school decision.

When considering whether a student has a satisfactory understanding of an outcome you may consider classwork, logbook activities, S/N tasks, assessment tasks.

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.

Always come back to the assessment principles - valid and reasonable, equitable, balanced and efficient.

Unit 2 Assessment

Outcome 1 and 2, at least one task selected from:

- analysis and evaluation of an experiment or case study
- a data analysis of generated primary and/or collated secondary data
- reflective annotations of a logbook of practical activities
- media analysis of one or more contemporary media texts
- a literature review
- response to a psychological issue or ethical dilemma
- a modelling or simulation activity
- problem-solving involving psychological concepts, skills and/or issues
- a report of a scientific investigation, including the generation, analysis and evaluation of primary data.

If multiple tasks are selected for Outcome 1 and/or Outcome 2, they must be different. The same task cannot be selected more than once across Outcomes 1 and 2.

Assessment possibilities for AOS1

Task type	Possible contexts
analysis and evaluation of an experiment or case study	Investigate the Festinger and Carlsmith 1959 study on cognitive dissonance and present the findings as a flow chart diagram, including an evaluation of validity
a data analysis of generated primary and/or collated secondary data	Students design and run a two-part survey (cognition and behaviour) to measure people's levels of cognitive dissonance on a current topic (eg. fast fashion, minimising food waste, saving money, animal welfare, time on social media, being sun smart, eating fresh fruit and vegetables, regular study).
reflective annotations of a logbook of practical activities	Reflective questions on class activities including: Highwayman story (just world belief), implicit bias riddle, Wason's rule (confirmation bias), individual vs small group activity (social loafing)
media analysis of one or more contemporary media texts	Analysis of the SBS series What Does Australia Really Think About... (Disability, Old People, Obesity).
Literature review	Carry out a literature review on the effectiveness of intergroup contact to reduce prejudice. Include the collation and analysis of at least three sources of secondary data
response to a psychological issue or ethical dilemma	Using the Discussion Paper " Has Gambling Gatecrashed our Teens? " by the Victorian Responsible Gambling Foundation students respond to a series of prompts including the positive and negative influences of different media sources, the application of ethical concepts and their own point of view with justifications.
a modelling or simulation activity	Conduct secondary research to answer the question: How effective is the use of simulations to improve empathy for people with a disability?
problem-solving involving psychological concepts, skills and/or issues	Produce a poster or mind map that provides an example illustrating how cognitive biases interact with heuristics stereotypes, prejudice and discrimination
a report of a scientific investigation, including the generation, analysis and evaluation of primary data.	Carry out a class experiment to test the impact of social loafing. Students are randomly allocated to work individually or in a group of four to five students. They are given a task for a set time period and the productivity of each condition is compared. Tasks could include making paper planes or listing things you would find in a city that begin with the letter T

Detail of one assessment option

Task type: Reflective annotations of a logbook of practical activities

Please bookmark and visit the VCAA Psychology Assessment page for detailed information and advice on each task type

Reflective annotations of a logbook of practical activities

Students should undertake the practical activities relevant to the outcome prior to beginning the assessment task as part of the regular teaching and learning program.

Teachers should determine:

- which activities are undertaken for the outcome
- how many of these should be annotated for the assessment task
- whether the activities annotated for the assessment task will be student-selected or teacher-selected
- whether to provide a set of guiding questions to assist student annotations or whether to allow students to make their own annotations based on a general overall question related to a specific aspect of the relevant area of study
- when annotations will be completed; for example, immediately after each practical activity, after a series of activities, or in a block at the end of the area of study.

Although activities may be conducted individually, in small groups or as a class, the annotations must be completed and assessed individually. Annotations should show evidence of critical, analytical reflection. The selected practical activities may be compared in terms of the aim, methodology and method, data generated and findings of each practical activity, or students could be asked to compare the psychological information, ideas, concepts, theories and models contained within each practical activity.

Detail of one assessment option

Task type: Reflective annotations of a logbook of practical activities

Carry out a range of classroom activities, such as: highwayman story (just world belief), implicit bias riddle, Wason's rule (confirmation bias), individual vs small group controlled experiment (social loafing).

Options for assessable task:

After each activity students write a response to a prompt or a set of structured questions in their logbook (eg. 15 minutes for each activity carried out over a period of time)

OR

After each activity students use their logbook to note down results, reflections and observations. The assessable task is then a set of structured questions completed in a designated session.

Detail of another assessment option

Task type: Media analysis of one or more contemporary media texts

Media analysis of one or more contemporary media texts

Teachers should access and select one or more contemporary (i.e. published in the last calendar year) media texts in order to reflect current understanding and research in the discipline and to assist with assessment authentication. Students may be presented with previously unsighted stimulus material or, depending on the media texts chosen, be provided with time to read and understand the stimulus material prior to undertaking the assessment task. Media texts may include print articles, social media posts, advertisements, interview excerpts, audiovisual programs, artworks or performance items. Students may be asked to respond to selected psychological principles, concepts,

Detail of another assessment option

Task type: Media analysis of one or more contemporary media texts

Ideas:

Compare a media post or cartoon on working in a group with an excerpt from a study on social loafing

Analyse a range of advertisements in terms of the heuristics being used to manipulate attitudes and consumer buying behaviour

Consider media texts regarding the prevalence of gambling ads and their impact, as well as campaigns to remove them from sport/change warning labels

Unit 2 Area of Study 2

On completion of this unit the student should be able to explain the **roles of attention and perception**, compare gustatory and visual perception and analyse factors that may lead to perceptual distortions.

To achieve this outcome students will draw on key knowledge outlines in Area of Study 2 and relevant key science skills on pages 12 and 14 of the study design.

Unit 2, AOS 2 - Key knowledge

Perception

- the role of attention (sustained, divided, selective) in making sense of the world around us
- the role of perception in the processing and interpretation of sensory information, as demonstrated through top-down and bottom-up processing
- the influence of biological, psychological and social factors on visual perception and gustatory perception

Distortions of perception

- the fallibility of visual perceptual systems, for example, visual illusions and agnosia
- the fallibility of gustatory perception, for example, supertasters, exposure to miraculin and the judgment of flavours
- distortions of perception of taste and vision in healthy individuals, such as synaesthesia and spatial neglect

Scientific Investigation Methodology	Unit 2 Area of Study 2 Examples
Case study	Explore people's experience with spatial neglect
Classification and identification	Provide students with a variety of agnosia descriptions to identify the type of agnosia Ask students to classify a variety of activities according to the type of attention they require
Controlled experiment	Conduct an experiment to investigate the effect of descriptions of food on gustatory perception in a blind taste test of edible insects (e.g. 'mini twisties' vs 'mealworms')
Correlational study	Design and conduct a survey to investigate whether preference for sweet vs savory foods changes with age.
Fieldwork	Visit a shopping centre food court and observe and record which food outlets are the most popular
Literature review	Research three theories to explain the cause of synaesthesia and rank each in order of the strength of the evidence
Modelling	Use modelling clay to demonstrate the difference in sensory receptors of the eyes and tongue
Product, process or system development	Create a process or system that people with a form of agnosia could use to help identify unknown stimuli more easily
Simulation	Ask students to solve a small jigsaw puzzle without seeing the final image to simulate the brain's top down and bottom up processing. Simulate vision impairment using https://lighthousefw.org/vision-simulator/

New dot point AOS2- The role of attention

- **Simulate the difficulty of sustained attention on driving while using a phone by having students text and play a video game**
- **Carry out a controlled classroom experiment to test the effect of divided vs selective attention on a listening comprehension task. The control group hears a story and then answers a set of questions. The experimental group hears the same story while playing a game (eg. Connect 4 or Uno) and answer a set of questions**
- **Investigate the role of video games in improving selective and sustained attention**

Integration of cross study specifications

KEY SCIENCE SKILLS

- Distinguish between opinion, anecdote and evidence, and scientific and non-scientific ideas
- discuss the implications of research findings and proposals

CRITICAL & CREATIVE THINKING

- consider how critical and creative thinking has been applied by others in the development of knowledge

INDIVIDUAL & COLLABORATIVE SCIENTIFIC ENDEAVOUR

- active participation
- sharing ideas

New dot point AOS2- Top down and bottom up processing

- **Place items in a box and have students guess what they are by touch alone. Create a flowchart explaining the guessing in terms of top down and bottom up processing. Alternatively carry out a blindfolded taste test**
- **Analyse the B/13, ratman and jumbled letter sentences in terms of the role of top down and bottom up processing**
- **Consider a media article such as My Life With Face Blindness**

New dot point AOS2- Agnosia

- Investigate artworks involving visual illusion, for example Escher's tessellations
- Provide students with a visual illusion and discuss in line with the statement "It's really important to understand we're not seeing reality. We're seeing a story that's being created for us" (neuroscientist Patrick Cavanagh)
- Create a process or system that people with visual agnosia could use to help identify unknown stimuli more easily

New dot point AOS2- supertasters and exposure to miraculin

- Carry out a supertaster test by dyeing a section of the tongue blue and counting papillae in a defined space (such as a hole punch in a piece of paper or a reinforcement ring for hole punched paper). Discuss the test in relation to the concepts of validity, true value, objectivity, and quantitative vs qualitative data
- Using modelling clay, plasticine or playdough create a 3D model of miraculin and its binding effects on taste receptors

Detailed example [from the VCAA](#) [Teaching and](#) [Learning activities](#)

Exploring factors influencing gustatory perception towards eating insects

Aims

To explore the factors influencing gustatory perception of eating edible insects.

To develop secondary data skills through analysis of a contemporary Australian study.

To develop primary data generation and analysis skills.

Background

Eating insects as a protein source is likely to increase in the future. These activities explore the social factors that may influence Australians' willingness to try and incorporate insects as a food source.

Step 1: Tuning in

Brainstorm and discuss the reasons that eating insects as a protein source is likely to increase in the future. Identify and discuss students' reactions to the thought of eating insects. Classify these reactions as social or psychological.

Step 2: Accessing a secondary source of information

Access a secondary source of information on Australia's willingness towards consuming edible insects. For example, the journal article by Hopkins et al (2021) [Australians' experience, barriers and willingness towards consuming edible insects as an emerging protein source](#). Note: this is an open source journal article so all sections are freely available. Note: while the article is quite long it is written in a fairly accessible manner.

Assessment possibilities for AOS2

Task type	Possible contexts
analysis and evaluation of an experiment or case study	Provide a case study on a type of agnosia for which students explain the perceptual distortion and respond to a structured set of questions about the value of case studies
a data analysis of generated primary and/or collated secondary data	Use the results from a class experiment on attention or taste perception and provide students with a sequence of questions to analyse and evaluate the method and findings
reflective annotations of a logbook of practical activities	A folio assessment task where students respond to each practical activity guided by a set of prompts
media analysis of one or more contemporary media texts	Key science skills applied to a series of contemporary news articles related to either gustatory or visual perception
Literature review	Students create a folio of contemporary articles related to visual or gustatory perception and respond to a standard set of questions about each.
response to a psychological issue or ethical dilemma	Students apply their key science skills to the dilemma presented by bionic vision or facial recognition technology
a modelling or simulation activity	Students create a model of miraculin and show its binding effects on taste receptors. The model is accompanied by an explanation of the process of perception and how it can be fallible
problem-solving involving psychological concepts, skills and/or issues	Students are provided with a description of a visual or gustatory perceptual distortion and are asked to provide an explanation in terms of biological, psychological and social contributing factors.
a report of a scientific investigation, including the generation, analysis and evaluation of primary data.	After gaining informed consent from parents/guardians conduct an in class study using PTC strips to demonstrate the genetic component of bitter taste perception. Graph the class results and compare to broader population findings

Detail of one assessment option

A response to a psychological issue or ethical dilemma

Teachers may access and select a classic or contemporary (i.e. arisen within the last calendar year) psychological issue or ethical dilemma to which students can develop a response. The selected issue or ethical dilemma could also be developed from identified local issues and fictional case studies. Responses may take a variety of formats but students should be required to identify and discuss psychological concepts, ethical concepts and guidelines relevant to the selected issue or ethical dilemma. Problem-based learning may be used to support students to develop a response or teachers may provide students with a suitable graphic organiser or structured questions to support students to construct their response.

Detail of one assessment option

Task: response to a psychological issue or ethical dilemma

- **Investigate an issue related to**
 - the development of technology to improve visual perception, or
 - technology based on visual perception
- **Analyse and discuss in class, prepare for a structured, mini essay.**

Detail of another assessment option

Modelling or simulation activity

This task involves students constructing a physical model and / or analysing a conceptual model and / or using a simulation to model a real or theoretical psychological system. Students may complete the model or simulation as part of the regular teaching and learning program, prior to completing the assessment task, or as part of the assessment task. As part of the assessment task, students may be asked to analyse and evaluate how the model or simulation organises and explains observed psychological concepts and phenomena, including limitations of the selected model or simulation. Students could also be asked to complete an oral or multimodal presentation where they explain, analyse and / or evaluate the model or simulation they have completed.

Detail of another assessment option

Task: Modelling or simulation

- **Create a physical or technology based model showing the effect of miraculin on gustatory perception**
- **Write a supporting explanation of perception and fallibility of the perceptual system**

Linking to types of controlled experiments

There is updated terminology regarding the types of controlled experiments:

- ~ Between subjects (participants in one group only)**
- ~ Within subjects (participants in both conditions)**
- ~ Mixed design (includes aspects of both between and within subjects)**

The perception topic provides strong opportunities to explore the features, benefits and limitations of each type.

Controlled experiment examples

You could run a teacher led class based activity investigating the impact of the colour of lemonade (eg. coloured red or green with food dye) on taste perception.

You could choose to do this using:

Between subjects - students taste one drink only (red, green or control)

Within subjects - students taste all three drinks

Mixed design - you have 2 IV's (colour of lemonade and size of cup). Students taste one drink only (between subjects) but taste this drink in both a small and large cup (within subjects)

After data collection, students can be asked to identify the type of experiment used followed by a discussion on the benefits and limitations of this choice

Controlled experiment examples

The class could design and run an experiment on the influence of perceptual set (using the ratman or B-13 ambiguous images).

- Create a document with the main headings for the method design (eg. aim, subjects, ethical considerations, type of study, step by step instructions, data collection sheet)
- Share this with the class (ie. on overhead projector/shared doc) and lead a discussion to decide exactly how the study will be carried out. Each student then receives/makes a copy of the document
- Students carry out study with friends and family and data is collated
- Students complete a practice scientific poster

An important part of this discussion is deciding on the controlled experiment type. In this case discussing why between participants is the best option.

Process and present quantitative data

Based on the needs of your cohort, these two activities also provide the option for explicitly teaching and assessing ways to process quantitative data and graphic conventions.

This may include reinforcing:

- How to calculate measures of central tendency (mean, median, mode)
- Calculating percentages
- The type of data and best corresponding graph
- Graphing conventions - title, labelling axis, stating unit of measurement

Unit 2 Area of Study 3

On completion of this unit the student should be able to adapt or design and then conduct a scientific investigation related to internal and external influences on perception and/or behaviour and draw an evidence-based conclusion from generated primary data.

To achieve this outcome students will draw on key knowledge outlined in Area of Study 3 and relevant key science skills on pages 12 and 13 of the study design.

Unit 2, AOS 3 - Key knowledge

Investigation design

- the role of scientific investigations in reducing uncertainty
- psychological science concepts specific to the selected scientific investigation and their significance, including the definition of key terms
- scientific methodology relevant to the selected scientific investigation, **selected from classification and identification; controlled experiment; correlational study; fieldwork; modelling; or simulation**
- techniques of primary qualitative and quantitative data generation relevant to the investigation
- accuracy, precision, repeatability, reproducibility and validity of measurements in relation to the investigation
- health, safety and ethical guidelines relevant to the selected scientific investigation

Unit 2, AOS 3 - Key knowledge

Scientific evidence

- the distinction between an aim, a hypothesis, a model and a theory
- observations and investigations that are consistent with, or challenge, current scientific models or theories
- the characteristics of primary data
- ways of organising, analysing and evaluating generated primary data to identify patterns and relationships, including sources of error and remaining uncertainty
- use of a logbook to authenticate generated primary data
- the limitations of investigation methodologies and methods, and of data generation and/or analysis

Unit 2, AOS 3 - Key knowledge

Science communication

- the conventions of scientific report writing, including scientific terminology and representations, standard abbreviations and units of measurement
- ways of presenting key findings and implications of the selected scientific investigation

Task type: a report of a student-adapted or student-designed scientific investigation using a selected format, such as a scientific poster, an article for a scientific publication, a practical report, an oral presentation, a multimedia presentation or a visual representation

Managing student investigations

‘Guided’, ‘Coupled’ or ‘Open’ inquiry

- A range of inquiry types are appropriate for the student-adapted or -designed investigation
- Student skills in inquiry types should be scaffolded

Guided	Teacher	Student	Student
Coupled (linked to an earlier inquiry)	Initial: Teacher Coupled: Student	Student	Student
Open	Student	Student	Student

Refer to the ‘[Scientific Investigations](#)’ section in the Psychology Support materials for more information about guided, coupled and open inquiry types.

Investigation approval

- Not all student-designed investigations can be allowed to proceed
- Investigations must be managed in terms of resources, safety and authenticity.

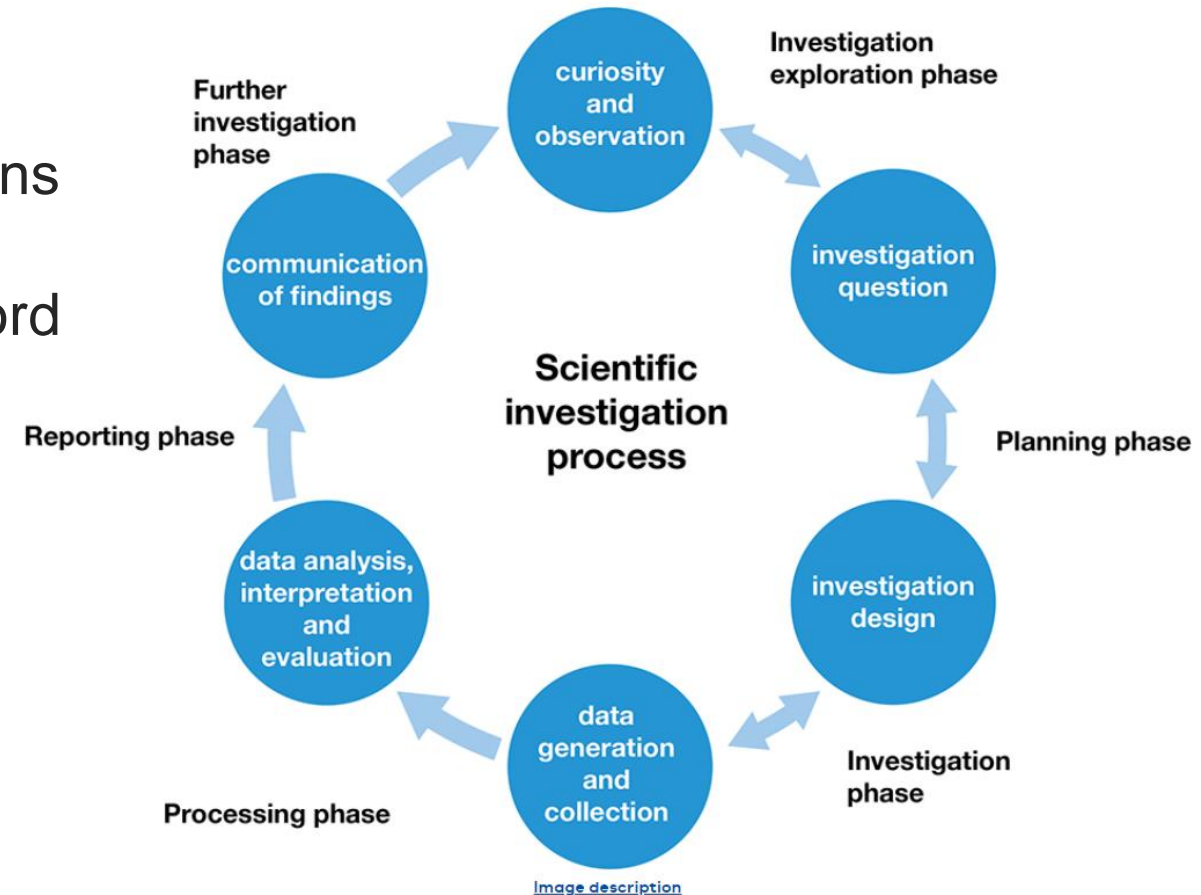
Scaffolding key science skills

Adapting or designing practical investigations requires that teachers:

- explicitly teach required key knowledge and skills
- ‘unpack’ students’ misconceptions/ uncertainties/ errors etc
- provide all students with adequate time to develop and practise the relevant key science skills before being asked to apply and demonstrate them as part of Unit 2 Outcome 3.

Scaffolding student learning

- Provide opportunities to develop skills in ‘adapting’ or ‘designing’ scientific investigations and use of logbooks to appropriately plan and conduct investigations; generate, collate record data; analyse and evaluate data and investigation methods and how to effectively communicate scientific ideas.
- Assessment task may be delivered and assessed in parts depending on nature of scientific investigation/cohort and student needs



Sample approach 1: Teacher-provided list of topics

- Teacher provides a list of possible research topics/questions relating to Area of Study 1 and/or 2
- Students submit a proposed timeline and design a scientific investigation related to a selected research question of interest
- A negotiated scientific investigation is undertaken by the student and monitored by the teacher.

Sample approach 2: Flipped classroom

Students:

- have open choice of topic
- undertake own research out of class
- submit adapted or proposed scientific investigation.

Teachers:

- approve/provide feedback re appropriate modifications to methodology and method
- monitor undertaking of investigation
- assess student capacity to design further investigations following completion of investigation.

Sample approach 3: Building on prior research

- Teachers or students identify a prior class investigation or research snippet, found in scientific publications and/or the media, as a stimulus for an investigation
- Students propose a research question, methodology and method that is prompted by the research snippet
- Teachers approve/modify the student proposed investigation so that the investigation is safe, ethical and manageable.

Sample approach: Specific Methodology

- The teacher provides a set of research questions/topics that have a specific methodology theme e.g Case study; Fieldwork; Product, process or system development
- Students work individually or in groups to adapt/design possible methods that match the selected methodology and intended research question/topic
- Teachers approve/provide feedback re appropriate modifications to method, students generate data

Developing hypotheses

Any of the scientific methodologies that enable primary data to be generated are appropriate for Unit 2 Outcome 3.

A controlled experiment may not be the most appropriate scientific investigation methodology to answer the selected research question.

A suitable hypothesis should contain an IV, DV and a predicted effect of the IV on the DV.

Variables do not need to be operationalised as part of the hypothesis. However as part of the method for a controlled experiment, students should be able to detail how they will manipulate and measure (operationalise) the IV and DV.

Drawing an evidence-based conclusion

- **In processing, evaluating and discussing their own data, students may be required to:**
 - presenting data in both tabular and graphical formats
 - distinguish between quantitative and qualitative data
 - consider the accuracy, precision, repeatability, reproducibility and validity of their measurements
 - identify patterns and relationships, including sources of error and uncertainty
 - identify assumptions and limitations of the selected methodology, data generation and/or data analysis
 - consider sources of bias and the appropriateness and application of data to different cultural groups

Sample timeline

(minimum 7 hours of class time)

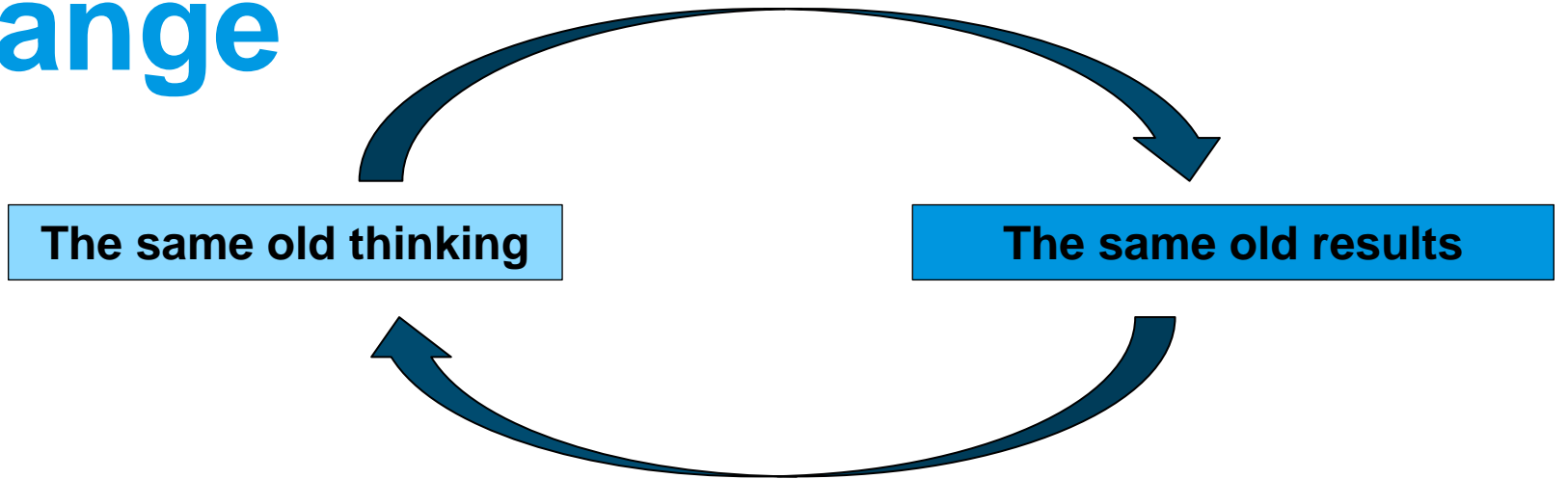
- **2-3 hours:** Students/groups/class identify research question, research possible methodologies and methods, confirm investigation with teacher.
- **2-3 hours:** Commence data generation. Students maintain logbook records. Teacher checks and signs off logbook entries.
- **3 hours:** Data processing and data analysis. Students complete individual report in the designated format (may be completed outside of class with appropriate authentication).

Note: Does not need to be completed as a single block of time in Unit 2.

Different students may undertake different investigations involving different methodologies

Same assessment tool should be used if students are going to be assessed on levels of achievement as well as satisfactory completion.

Managing change



Reflection:

- What worked well last year?
- What did not work well last year?
- Where are the new opportunities in the Study Design?
- How will the student-adapted or –designed investigation be managed?
- How will the logbook be assessed?
- At what stages will students receive feedback?
- How is practical work and the student investigations managed across the science faculty?

Questions?

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