EDCU20038 *Teaching Science*

Term 1 - 2023

Profile information current as at 12/10/2024 05:25 pm

All details in this unit profile for EDCU20038 have been officially approved by CQUniversity and represent a learning partnership between the University and you (our student).The information will not be changed unless absolutely necessary and any change will be clearly indicated by an approved correction included in the profile.

General Information

Overview

In this unit you will develop an understanding of both the content and pedagogy required to teach science in early childhood education and care settings and in primary school classrooms. You are introduced to concepts on how children learn science, the importance of science education in an Australian and international context and current views regarding effective pedagogical practice. You will examine research that has informed the selection of pedagogy with children in early childhood education and care settings and in primary school classrooms. Practical application of skills related to the Australian Curriculum: Science will focus on learning and teaching across the four Understanding Substrands of Biological Sciences, Earth and Space Sciences, Chemical Sciences and Physical Sciences. There is an emphasis on science inquiry skills, in particular, identifying and posing questions; planning, conducting and reflecting on investigations; processing, analysing and interpreting evidence; and communicating findings. The unit includes an emphasis on effective student engagement within science education through the appropriate selection, application and assessment of science content knowledge.

Details

Career Level: *Postgraduate*
Unit Level: *Level 9*
Credit Points: *6*
Student Contribution Band: *7*
Fraction of Full-Time Student Load: *0.125*

Pre-requisites or Co-requisites

There are no requisites for this unit.
Important note: Students enrolled in a subsequent unit who failed their pre-requisite unit, should drop the subsequent unit before the census date or within 10 working days of Fail grade notification. Students who do not drop the unit in this timeframe cannot later drop the unit without academic and financial liability. See details in the Assessment Policy and Procedure (Higher Education Coursework).

Offerings For Term 1 - 2023

- Online

Attendance Requirements

All on-campus students are expected to attend scheduled classes – in some units, these classes are identified as a mandatory (pass/fail) component and attendance is compulsory. International students, on a student visa, must maintain a full time study load and meet both attendance and academic progress requirements in each study period (satisfactory attendance for International students is defined as maintaining at least an 80% attendance record).

Website

This unit has a website, within the Moodle system, which is available two weeks before the start of term. It is important that you visit your Moodle site throughout the term. Please visit Moodle for more information.

Class and Assessment Overview

Recommended Student Time Commitment

Each 6-credit Postgraduate unit at CQUniversity requires an overall time commitment of an average of 12.5 hours of study per week, making a total of 150 hours for the unit.

Class Timetable

Regional Campuses
Bundaberg, Cairns, Emerald, Gladstone, Mackay, Rockhampton, Townsville

Metropolitan Campuses
Adelaide, Brisbane, Melbourne, Perth, Sydney

Assessment Overview

1. **Written Assessment**
Weighting: 50%
2. **Written Assessment**
Weighting: 50%

Assessment Grading

This is a graded unit: your overall grade will be calculated from the marks or grades for each assessment task, based on the relative weightings shown in the table above. You must obtain an overall mark for the unit of at least 50%, or an overall grade of 'pass' in order to pass the unit. If any 'pass/fail' tasks are shown in the table above they must also be completed successfully ('pass' grade). You must also meet any minimum mark requirements specified for a particular assessment task, as detailed in the 'assessment task' section (note that in some instances, the minimum mark for a task may be greater than 50%). Consult the University's Grades and Results Policy for more details of interim results and final grades.

CQUniversity Policies

All University policies are available on the CQUniversity Policy site.
You may wish to view these policies:

- Grades and Results Policy
- Assessment Policy and Procedure (Higher Education Coursework)
- Review of Grade Procedure
- Student Academic Integrity Policy and Procedure
- Monitoring Academic Progress (MAP) Policy and Procedure – Domestic Students
- Monitoring Academic Progress (MAP) Policy and Procedure – International Students
- Student Refund and Credit Balance Policy and Procedure
- Student Feedback – Compliments and Complaints Policy and Procedure
- Information and Communications Technology Acceptable Use Policy and Procedure

This list is not an exhaustive list of all University policies. The full list of University policies are available on the CQUniversity Policy site.

Unit Learning Outcomes

On successful completion of this unit, you will be able to:

1. Evaluate examples of teaching and assessment practice in science education to identify how connections are made to students' prior knowledge or experience to promote learning
2. Access and apply professional literature on contemporary science education to critically evaluate or justify planning and assessment practices
3. Plan learning experiences that use appropriate research-based pedagogy and ICTs to structure content and address students' possible misconceptions in science education
4. Develop diagnostic, formative and summative assessment tools that identify students' understanding of scientific phenomena
5. Select teaching and learning and assessment strategies that draw on understandings from research of how students learn in order to support active learning, promote higher order thinking and scaffold students' understanding of core concepts in science
6. Identify strategies to support inclusive student participation and engagement in classroom activities.

Successful completion of this course provides opportunities for students to demonstrate the Australian Professional Standards for Teachers focus areas of:
1.1 Physical, social and intellectual development and characteristics of students.
1.2 Understand how learners learn
2.1 Content and teaching strategies of the teaching area
2.3 Curriculum, assessment and reporting
2.6 Information and Communication Technology (ICT)
3.2 Plan, structure and sequence learning programs
3.3 Use teaching strategies
3.4 Select and use resources
3.6 Evaluate and improve teaching programs
4.1 Support student participation
5.1 Assess student learning
5.5 Report on student achievement

Alignment of Learning Outcomes, Assessment and Graduate Attributes

— N/A Level | • Introductory Level | • Intermediate Level | • Graduate Level | ∘ Professional Level | ∘ Advanced Level

Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes					
	1	2	3	4	5	6
1 - Written Assessment - 50%		•			•	•
2 - Written Assessment - 50%	•	•	•	•	•	

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes					
	1	2	3	4	5	6
1 - Knowledge	∘	∘	∘	∘	∘	
2 - Communication	∘	∘	∘	∘	∘	
3 - Cognitive, technical and creative skills	∘	∘	∘		∘	
4 - Research		∘				∘
5 - Self-management				∘		
6 - Ethical and Professional Responsibility				∘	∘	
7 - Leadership						
8 - Aboriginal and Torres Strait Islander Cultures						

Textbooks and Resources

Textbooks

There are no required textbooks.

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)

Referencing Style

All submissions for this unit must use the referencing style: American Psychological Association 7th Edition (APA 7th edition)
For further information, see the Assessment Tasks.

Teaching Contacts

Dr Joe Ireland Unit Coordinator
j.ireland@cqu.edu.au

Schedule

Week 1 - 06 Mar 2023

Module/Topic	Chapter	Events and Submissions/Topic
Theoretical frameworks in science	Required: Skamp, K., & Preston, C. (2021). Teaching primary science constructively. Cengage. CHAPTERS 1 and 2 Recomended: Fragkiadaki, G., Fleer, M., & Rai, P. (2021). Early childhood science education from 0 to 6: A literature review. Education Sciences, 11, 178. Addey, C., & Gorur, R. (2020). Translating PISA, translating the world. Comparative Education, 56(4).	

Week 2 - 13 Mar 2023

Module/Topic	Chapter	Events and Submissions/Topic
Scientific inquiry, the curriculum, and play-based learning	Required Skamp, K., & Preston, C. (2021). Teaching primary science constructively. Cengage. CHAPTER 4 Recommended The Australian National Curriculum. - (Australian Curriculum, Assessment and Reporting Authority [ACARA], 2022. v9) https://v9.australiancurriculum.edu.au/ Department of Education and Training. (2019, March 6). Belonging, being and becoming: The early years learning framework for Australia. Department of Education. https://www.education.gov.au/download/775/belonging-being-becoming-early-years-learning-framework-australia/18161/document/pdf/e Cremin, T., Glauert, E., Craft, A., Compton, A., & Styliandou, F. (2015). Creative little scientists: Exploring pedagogical synergies between inquiry-based and creative approaches in Early Years science. Education 43(4), 404–419.	

Week 3 - 20 Mar 2023

Module/Topic	Chapter	Events and Submissions/Topic
Scientific literacy and language	Required Hintz, A., Smith, A., Glen, K., Gannon, E., & Wishart, A. (2020). Story Time STEM: Nurturing children's joy and wonder through shared reading experiences. NAEYC. Recommended Tomas, L. (2012). Writing narratives about a socioscientific issue: Engaging students and learning science. Teaching Science, 58(4), 24-28. Vardell, S., & Wong, J. (2017). Learning about trees with the 5Es: The poetry of science building literacy in playful, meaningful ways. Science and children, 55(4), 20.	

Week 4 - 27 Mar 2023

Module/Topic	Chapter	Events and Submissions/Topic

Science as a Human Endeavour	Required Skamp, K., & Preston, C. (2021). Teaching primary science constructively. Cengage. CHAPTER 3 Recommended Gomes, J., & Fleer, M. (2020). Is science really everywhere? Teachers' perspectives on science learning possibilities in the preschool environment. Research in Science Education, 50, 1961–1989. Hackling, M., Peers, S., & Prain, V. (2007). Primary Connections: reforming science teaching in Australian primary schools. Teaching science, 53(3).	

Week 5 - 03 Apr 2023

Module/Topic	Chapter	Events and Submissions/Topic
STEM - Science, Technology, Engineering and Mathematics	Required Simoncini, K.,& Lasen, M. (2021). Popup loose parts playgrounds: learning opportunities for early childhood preservice teachers. International journal of play, 10(1). Recommended Bucher, E., & Pindra, S. (2020). Infant and Toddler STEAM: Supporting Interdisciplinary Experiences with Our Youngest Learners. NAEYC, 75(2). Erduran, S. (2020). Nature of "STEM"? Epistemic Underpinnings of Integrated Science, Technology, Engineering, and Mathematics in Education. Science & Education, 29(4).	

Vacation Week - 10 Apr 2023

Module/Topic	Chapter	Events and Submissions/Topic
Vacation Week		

Week 6 - 17 Apr 2023

Module/Topic	Chapter	Events and Submissions/Topic
Digital Literacies & Inclusivity	Required Pigott, C. (2013). Embedding Indigenous perspectives in science. Educating Young Children Learning and Teaching in the Early Childhood Years, 19(1), 8-9. Ng, Wan. (2011). Why digital literacy is important for science teaching and learning? Teaching Science, 57(4), 26-32. Recommended Mantilla, A., & Edwards, S. (2019). Digital technology use by and with young children : A systematic review for the statement on young children and digital technologies. Australasian journal of early childhood, 44(2).	**Written planning for scientific inquiry skills** Due: Week 6 Thursday (20 Apr 2023) 11:50 pm AEST

Week 7 - 24 Apr 2023

Module/Topic	Chapter	Events and Submissions/Topic

The Australian Curriculum (revisited), and Scientific Misconceptions	Required Kambouri, M. (2016). Investigating early years teachers' understanding and response to children's preconceptions. European Early Childhood Education Research Journal, 24(6), 907-927. Elliott, K., & Pillman, A. (2016). Making science misconceptions work for us. Teaching Science, 62(1), 38-41. Recommended Bonus, J., & Mares, M. (2018) When the Sun Sings Science, Are Children Left in the Dark? Representations of Science in Children's Television and Their Effects on Children's Learning. Human Communications Research, 44(4).	

Week 8 - 01 May 2023

Module/Topic	Chapter	Events and Submissions/Topic
Assessment in Science	Required Gregson and Doidge (), "Connecting with Science Education", (Ed.2) has an entire chapter decided to assessment strategies (ch. 8) Recommended Agboola, O., & Awogbindin, O. (2017). Assessment of science process skills inherent in the play activities of primary school pupils in Osun state, Nigeria. International Journal of Arts & Sciences, 10(2), 125-135. Hondrich, A., Hertel, S., Adl-Amini, K., & Klieme, E. (2016). Implementing curriculum-embedded formative assessment in primary school science classrooms. Assessment in Education: Principles, Policy & Practice, 23(3), 353-376. Saeed, M., Tahir, H., & Latif, I. (2018). Teachers' Perceptions about the Use of Classroom Assessment Techniques in Elementary and Secondary Schools. Bulletin of education and research, 40(1).	

Week 9 - 08 May 2023

Module/Topic	Chapter	Events and Submissions/Topic
Chemical Sciences	Required. Skamp, K., & Preston, C. (2021). Teaching primary science constructively. Cengage. CHAPTERS 10 and 11. Recommended Ashbrook, P. (2008). Exploring the properties of a mixture (The Early Years: Resources and conversations on PreK to 2 science). Science and Children, 45(5). Chemical Sciences Taylor, N., Taylor, S., Rizk, N., & Cooper, G. (2017). Suggestions for teaching floating, sinking and density. Teaching science, 64(4).	

Week 10 - 15 May 2023

Module/Topic	Chapter	Events and Submissions/Topic

Physical Sciences	Required Skamp, K., & Preston, C. (2021). Teaching primary science constructively. Cengage. CHAPTERS 5, 6 and 7. Recommended Fridberg, M., Jonsson, A., Redfors, A., & Thulin, S. (2020). The Role of Intermediary Objects of Learning in Early Years Chemistry and Physics. Early Childhood Education Journal, 48(5), 585-595. Johnson, C., Walton, J., & PetersBurton, E. (2019). Physics in Motion, Kindergarten. Arlington, VA: National Science Teachers Association.	

Week 11 - 22 May 2023

Module/Topic	Chapter	Events and Submissions/Topic
Biological Sciences	Required Skamp, K., & Preston, C. (2021). Teaching primary science constructively. Cengage. CHAPTERS 8 and 9. Recommended Connor, C., Watkins, M., Walte, B., & Harper, J. (2020). Food for thought: Bringing primary school microbiology to life. Teaching Science, 66(1). Gurholt, K., & Sanderud, J. (2016). Curious play: children's exploration of nature. Journal of adventure education and outdoor learning, 16(4).	

Week 12 - 29 May 2023

Module/Topic	Chapter	Events and Submissions/Topic
Earth and Space Sciences	Required Skamp, K., & Preston, C. (2021). Teaching primary science constructively. Cengage. CHAPTERS 12, 13 and 14. Recommended Melis, C., Wold, P., Billing, A., Bjørgen, K., & Børge M. (2020). Kindergarten Children’s Perception about the Ecological Roles of Living Organisms. Sustainability (Basel, Switzerland), 12(9565), 9565. Spiteri, J . (2021). Can you hear me? Young children's understanding of environmental issues. International studies in sociology of education, 30(1-2).	**Scientific concepts, diagnostic assessments and misconceptions** Due: Week 12 Thursday (1 June 2023) 11:50 pm AEST

Review/Exam Week - 05 Jun 2023

Module/Topic	Chapter	Events and Submissions/Topic

Exam Week - 12 Jun 2023

Module/Topic	Chapter	Events and Submissions/Topic

Assessment Tasks

1 Written planning for scientific inquiry skills

Assessment Type
Written Assessment

Task Description
Assessment 1 - Written planning for scientific inquiry skills
Weighting: 50%
Due: Week 6
Task Description
Inquiry is foundational for children's learning in science and begins with young children as they play and interact with others within their everyday environment. From a very early age and as part of everyday experiences such as playing in the sandpit, pouring water into a cup or poking things with a stick, children engage in experiences that build scientific understandings. While children are naturally interested in phenomena in their world, adults support this inquiry as they pose questions and support children to make predictions (DEEWR, 2009).
As articulated in The Australian Curriculum (AC): Science (v8), science inquiry is "identifying and posing questions; planning, conducting and reflecting on investigations; processing, analysing and interpreting evidence; and communicating findings. The choice of the approach taken will depend on the context (science as a human endeavour) and subject of the investigation (science understanding)". In AC v.9; "Science investigations are activities in which ideas, predictions or hypotheses are tested and conclusions are drawn in response to a question or problem. They can involve a range of activities including experimental testing, field work, locating and using information sources, conducting surveys, and using modelling and simulations. The choice of the approach taken will depend on the context and aims of the investigation."
As articulated in the Early years Learning Framework (EYLF) outcome 4; children are confident and involved learners which is evident when children: are curious and enthusiastic participants in their learning; and use play to investigate, imagine and explore ideas.
In this assessment task, you will design **one** inquiry activity for children. It is expected that this activity will be at a standard suitable for use on placement.

For early childhood students:
You will do **one** for either babies, toddlers, or pre-kindergarten, or Grade F – 2.
Primary students:
You will do **one** for either Grade F-2, Grades 3-4 **or** Grades 5-6.

This task includes a number of steps:
1. Select a concept for investigation (you will draw on the Australian Curriculum and / or the EYLF as appropriate for advice on suitable scientific concepts).
2. Research this concept so that you build your personal understanding of this concept. This understanding will help to inform the design of your inquiry. You will be required to synthesise this research and submit it as part of the assignment task. This will be used as a preface for your documentation (background research). It is a component that another person could read to inform the teaching of that particular concept.
3. Drawing on your understanding of children, including their interests, design an inquiry for children that uses inquiry methods to help students engage with the selected scientific concept. It is anticipated that the inquiry will comprise a number of learning experiences (minimum of 3) and will address the process in the Australian Curriculum and / or EYLF. The first experience is often an engagement in the concept, the second one could be a scientific investigation (a fair test) or observations, and the third one may be an application and discussing their understanding of the new concept with others. It is important that student teachers make use of the stages of Inquiry as described by the Australian Curriculum;
a) **Questioning and predicting**: Consider how to introduce the inquiry – So, what will be the stimulus? How will you get children interested? Given the importance of generating questions to support children's inquiry, as part of your planning, you need to generate questions that might support the inquiry process. Plan to use student questions to guide student explanations and hypothesis - i.e., theories. Students may use those theories to make predictions about the world.
b) **Planning**: Identify how you could plan for the children's inquiry and how to conduct this inquiry. Will you provide stimulus such as objects? You will need to ensure that this aligns with how this is explained in the sequence of the Australian Curriculum and / or EYLF. Plan to test student predictions about the world, as based on their current explanations.
c) **Processing and analysing data and information**: Consider how the children will process and analyse any data. For example, will they record the data in a simple table? How will you collect their observations? What guiding questions might you ask? Prepare to have students make evidence-based conclusions on the results of their experiments.
d) **Comparing**: Consider how children might compare their data with others. Consider how to scaffold students in making their scientific research a point of comparison and consideration among themselves, much like real scientists must do.
e) **Communicating**: Consider how children will communicate their findings, to each other, yourself, their parents, and

perhaps the wider community.
4. Explicitly consider strategies to support inclusive student participation and engagement, for example physical disability or impairment, learning difficulties, learning styles, culture, gender, and gifted and talented students.
5. Provide a conclusion and reflection on how this inquiry activity will help children develop sound scientific inquiry skills.

There is a 1500 word limit maximum for this assignment, not including cover page, references, bibliography, footnotes, or appendixes

Assessment Due Date
Week 6 Thursday (20 Apr 2023) 11:50 pm AEST

Return Date to Students

Weighting
50%

Assessment Criteria
● Synthesis of selected concept drawn from evidence-based research and application of knowledge of the concept to the design of the inquiry.
● Evidence of knowledge of ways children learn in the design of the inquiry.
● Design of learning experiences explicitly linked to the Australian Curriculum and /or EYLF process of inquiry.
● Explicit engagement techniques employed for introducing the inquiry.
● Clear and coherent learning experiences presented, including application of the scientific content.
● Effective use of the essential practices of scientific inquiry used, including; Questioning and predicting, Planning and conducting, Processing and analysing data and information, Evaluating and Communicating results.
● Clear plans for encouraging, and employing, student lead questions as part of the inquiry teaching plan.
● Evidence of awareness of Science as a Human Endeavour, and pedagogical practices that support student development of this key strand.
● Identification of strategies to support inclusive student participation.
● As part of a critical appraisal, provide a conclusion and justification on how this approach to learning and teaching could make a positive impact on the learners
● Effective, scholarly and professional communication in accordance with accepted academic conventions APA 7th.

Referencing Style

- American Psychological Association 7th Edition (APA 7th edition)

Submission
Online

assessmentOutcome

- Access and apply professional literature on contemporary science education to critically evaluate or justify planning and assessment practices
- Select teaching and learning and assessment strategies that draw on understandings from research of how students learn in order to support active learning, promote higher order thinking and scaffold students' understanding of core concepts in science
- Identify strategies to support inclusive student participation and engagement in classroom activities.

assessmentGradAttribute

2 Scientific concepts, diagnostic assessments and misconceptions

Assessment Type
Written Assessment

Task Description
Children have alternate conceptions or misconceptions about the scientific world. As children think about what they do and see, they build understandings of how objects and events work. Also contributing to the development of understandings about the scientific world are the interactions that children have with others, including other children and adults. The building of these ideas can often result in misconceptions about how the world works, including about scientific concepts.
Part A: Through research, select a scientific concept taught in one of the Understanding strands of the Australian Curriculum. This cannot be the same concept chosen in Assessment Task 1 and must be from a different Science Understanding strand than selected in Assessment Task 1 if applicable. Unfortunately, science concepts are often misunderstood or poorly understood. You will receive support to identify common misconceptions. Misconceptions can often be found in the media or during conversations with children.
Identify a learner context you will be working within: Either Foundation to Year 2 or Year 3 to Year 6. Note: early

childhood students MUST select F-2, primary students can choose either F-2 OR 3-6. Identify the Year level and the science concept from the appropriate curriculum.
Identify previous interactions that may have contributed to the possible misconception. This might include explanations to questions or sayings that we commonly use. For example, adults may tell children that the sun has gone to bed. Using the Australian Curriculum (and where appropriate, the Early Years Learning Framework), identify the prior knowledge of the two years prior that children have developed or should have developed. The table below explains this in more detail.
Chosen Curriculum Selection of previous years to investigate prior knowledge
Foundation EYLF
Year 1 You would examine the EYLF and Foundation
Year 2 Foundation and Year 1
Year 3 Years 1 and 2
Year 4 Years 2 and 3
Year 5 Years 3 and 4
Year 6 Years 4 and 5
Design a diagnostic tool to critically analyse the understanding that these learners have about your selected concept. Included in your tool will be questions that enable you to find out about children's understanding. As part of developing the questions, you will need to consider the concept.
This concept needs to be researched and this research submitted as part of your assessment task. What does the concept mean? Where might the children use this concept? How will children show you what they understand about the concept?
The diagnostic tool simply means 'how will you find out' about children's understanding of the particular concept. While you are asked to use questions as part of your investigation, it may involve observing children engage with a particular concept insitu. Therefore, as part of your planning consider what children might be doing to show you that they understand the concept. Additionally, it may involve the collection of drawing, classwork or even overhearing children's discussions. Think carefully about the artefacts that might be used to obtain information about the knowledge children have about the concept.
Part B Challenging Misconception: Drawing on the Australian Curriculum, develop a learning sequence that works to correct the possible misconception that you have examined in Part A.
The pedagogy used in your learning sequence must be linked to current research on effective teaching and learning practice. Additionally, the way you approach your planning needs to align with what you know about the cognitive and language characteristics of the learners in the chosen age group. You need to articulate how the sequence of learning evidences knowledge of research on how children learn in order to demonstrate knowledge and understanding of physical, social and intellectual development and characteristics of students and how these may affect learning.
As part of the learning sequence, use ICTs to support children's concept development. You need to include a range of teaching strategies that reflect the pedagogical approach to support concept development in science.
Part C: Communicating what you have identified about the misconceptions. This section of the assignment requires that you outline how you would report your findings to children/students and parents/carers.

There is a 1500 word limit maximum for this assignment, not including cover page, references, bibliography, footnotes, or appendixes.

Assessment Due Date
Week 12 Thursday (1 June 2023) 11:50 pm AEST

Return Date to Students

Weighting
50%

Assessment Criteria

- Explicit identification and thorough research of a scientific concept.
- Explicit identification and thorough research of learner context and curriculum level.
- Comprehensive diagnostic assessment tool developed to analyse the understandings that learners may have about the selected concept.
- Deep knowledge and understanding of the correct scientific concept.
- Explicit connections between the misconception and the current scientific concept, and how the misconception can be helpful in empowering students to create more developed understandings
- Development of a learning sequence based on contemporary research on effective learning and teaching practice including appropriate use of ICTs to support the development of the accepted scientific concept.
- Articulation of how the learning sequence demonstrates knowledge and understanding of research into how students learn.
- Discussion on the physical, social, and intellectual development and characteristics of students, and the implications for learning and teaching.
- Articulation about how learning outcomes might be communicated with stakeholders.

- Effective, scholarly and professional communication in accordance with accepted academic conventions APA 7th.

Referencing Style

- American Psychological Association 7th Edition (APA 7th edition)

Submission
Online

assessmentOutcome

- Evaluate examples of teaching and assessment practice in science education to identify how connections are made to students' prior knowledge or experience to promote learning
- Access and apply professional literature on contemporary science education to critically evaluate or justify planning and assessment practices
- Plan learning experiences that use appropriate research-based pedagogy and ICTs to structure content and address students' possible misconceptions in science education
- Develop diagnostic, formative and summative assessment tools that identify students' understanding of scientific phenomena
- Select teaching and learning and assessment strategies that draw on understandings from research of how students learn in order to support active learning, promote higher order thinking and scaffold students' understanding of core concepts in science

assessmentGradAttribute

Academic Integrity Statement

As a CQUniversity student you are expected to act honestly in all aspects of your academic work.

Any assessable work undertaken or submitted for review or assessment must be your own work. Assessable work is any type of work you do to meet the assessment requirements in the unit, including draft work submitted for review and feedback and final work to be assessed.

When you use the ideas, words or data of others in your assessment, you must thoroughly and clearly acknowledge the source of this information by using the correct referencing style for your unit. Using others' work without proper acknowledgement may be considered a form of intellectual dishonesty.

Participating honestly, respectfully, responsibly, and fairly in your university study ensures the CQUniversity qualification you earn will be valued as a true indication of your individual academic achievement and will continue to receive the respect and recognition it deserves.

As a student, you are responsible for reading and following CQUniversity's policies, including the **Student Academic Integrity Policy and Procedure**. This policy sets out CQUniversity's expectations of you to act with integrity, examples of academic integrity breaches to avoid, the processes used to address alleged breaches of academic integrity, and potential penalties.

What is a breach of academic integrity?
A breach of academic integrity includes but is not limited to plagiarism, self-plagiarism, collusion, cheating, contract cheating, and academic misconduct. The Student Academic Integrity Policy and Procedure defines what these terms mean and gives examples.

Why is academic integrity important?
A breach of academic integrity may result in one or more penalties, including suspension or even expulsion from the University. It can also have negative implications for student visas and future enrolment at CQUniversity or elsewhere. Students who engage in contract cheating also risk being blackmailed by contract cheating services.

Where can I get assistance?
For academic advice and guidance, the Academic Learning Centre (ALC) can support you in becoming confident in completing assessments with integrity and of high standard.

What can you do to act with integrity?

Be Honest
If your assessment task is done by someone else, it would be dishonest of you to claim it as your own

Seek Help
If you are not sure about how to cite or reference in essays, reports etc, then seek help from your lecturer, the library or the Academic Learning Centre (ALC)

Produce Original Work
Originality comes from your ability to read widely, think critically, and apply your gained knowledge to address a question or problem