



# EDED14355 STEM Education and Engagement

## Term 1 - 2024

Profile information current as at 14/05/2024 07:36 pm

All details in this unit profile for EDED14355 have been officially approved by CQU University 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

It is well recognised that future generations require strong educational foundations in order to navigate our changing world. The renewed national focus on Science, Technology, Engineering and Mathematics (STEM) in primary school education will ensure that young Australians become equipped with the necessary skills and knowledge that they need to succeed in a changing world. STEM education refers collectively to the teaching of the disciplines of science, technology, engineering and mathematics and also to a cross-disciplinary approach to teaching that increases student interest in STEM related fields and improves students' problem solving and critical analysis skills. In this unit, you will build on the knowledge acquired in previous science, technology and mathematics units. You will apply problem based learning theory and pedagogical principles that underpin inquiry approaches and collaboration to design, conduct and evaluate first hand investigations in the science, technology, engineering or mathematics areas applicable to primary school classrooms. You will consolidate your knowledge in STEM disciplines and develop your pedagogical skills to increase student engagement and participation in STEM drawing upon the relevant Australian curriculum.

### Details

Career Level: *Undergraduate*

Unit Level: *Level 4*

Credit Points: 6

Student Contribution Band: 7

Fraction of Full-Time Student Load: 0.125

### Pre-requisites or Co-requisites

Prerequisites: EDCU12038 Teaching for Mathematical Proficiency EDCU12039 Digital and Design Technologies EDCU12040 Biological and Earth and Space Sciences EDCU13020 Mathematics Curriculum EDCU13017 Chemical and Physical Sciences

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 - 2024

- 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 Undergraduate 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: 45%

#### 2. **Reflective Practice Assignment**

Weighting: 45%

#### 3. **Peer assessment**

Weighting: 10%

### 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](#).

## Previous Student Feedback

### Feedback, Recommendations and Responses

Every unit is reviewed for enhancement each year. At the most recent review, the following staff and student feedback items were identified and recommendations were made.

#### Feedback from Student evaluation

##### **Feedback**

Clear unit requirements

##### **Recommendation**

Each week of the term an outline of the unit requirements will be given.

#### Feedback from Student evaluation

##### **Feedback**

Learning from assessments

##### **Recommendation**

Provide a weekly outline of the unit requirements.

#### Feedback from Student evaluation

##### **Feedback**

Feedback

##### **Recommendation**

Students give peer feedback to LCG members on MSTEAMS LCGs and AT2 report presentations.

## Unit Learning Outcomes

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

1. Applies professional learning to develop knowledge and understanding of how students' learn the interconnectedness of Science, Technology, Engineering and Mathematics (STEM) disciplines
2. Selects appropriate STEM content and develops collaborative teaching strategies that apply and use Information and Communication Technology (ICTs) safely, responsibly and ethically through mathematical problem solving; scientific inquiry, engineering and/or technological design principles
3. Plan, structure and sequence challenging learning programs that utilise evidence-based research to develop innovative pedagogical practices in STEM
4. Differentiate the teaching of STEM content and its variations through teaching strategies that meet the needs of an inclusive and diverse range of students.






















### **Successful completion of this unit provides opportunities for students to engage with the Australian Professional Standards for Teachers (Graduate Career Stage) focus area of:**

- 1.2 Understand how students learn
- 1.5 Differentiate teaching to meet the specific needs of students across the full range of abilities
- 2.1 Content and teaching strategies of the teaching area
- 2.2 Content selection and organisation
- 2.6 Information and Communication Technology (ICTs)
- 3.1 Establish challenging learning goals
- 3.2 Plan, structure and sequence learning programs
- 3.3 Use teaching strategies
- 3.4 Select and use resources
- 4.4 Maintain student safety
- 4.5 Use ICT safely, responsibly and ethically
- 6.4 Apply professional learning and improve student learning

## 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
1 - Communication				
2 - Problem Solving				
3 - Critical Thinking				
4 - Information Literacy				
5 - Team Work				
6 - Information Technology Competence				
7 - Cross Cultural Competence				
8 - Ethical practice				
9 - Social Innovation				
10 - 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)
- MS Teams
- eReading List

## 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

**Mark Gronow** Unit Coordinator  
[m.gronow@cqu.edu.au](mailto:m.gronow@cqu.edu.au)

## Schedule

### Week 1 - 04 Mar 2024

Module/Topic	Chapter	Events and Submissions/Topic
Introduction to STEM	Albion, P. (2015) Project-, problem-, and inquiry -based learning Kelley, T.R. & Knowledge, J.G. (2016) A conceptual framework for integrated STEM education. <a href="https://news.harvard.edu/gazette/story/2019/09/study-shows-that-students-learn-more-when-taking-part-in-classrooms-that-employ-active-learning-strategies/">https://news.harvard.edu/gazette/story/2019/09/study-shows-that-students-learn-more-when-taking-part-in-classrooms-that-employ-active-learning-strategies/</a>	Watch the Unit Coordinator Introduction to Unit recording. Review the Learning Material workbook. Make contact with Learning Community Group (LCG) on MS TEAMS.

### Week 2 - 11 Mar 2024

Module/Topic	Chapter	Events and Submissions/Topic
Science in STEM	Palmer, T. A. (2020). Keep your job options open and don't ditch science when choosing next year's school subjects. <i>Science Education News</i> , 69(2), 33-34.	Review the Moodle site weekly content under the Learning Material section. Begin a discussion on Assessment Task 1 in your LCG.

### Week 3 - 18 Mar 2024

Module/Topic	Chapter	Events and Submissions/Topic
Technology in STEM	<a href="#">Kennedy, J., et al. (2018). "Australian enrolment trends in technology and engineering: putting the T and E back into school STEM." <i>International Journal of Technology and Design Education</i> 28(2): 553-571.</a>	Review the Moodle site weekly content under the Learning Material section. Share research summaries for Assessment Task 1 with your LCG.

### Week 4 - 25 Mar 2024

Module/Topic	Chapter	Events and Submissions/Topic
Engineering in STEM	King, D. and L. D. English (2016). " <a href="#">Engineering design in the primary school: Applying STEM concepts to build an optical instrument.</a> " <i>International Journal of Science Education</i> 38(18): 2762-2794.	Review the Moodle site weekly content under the Learning Material section. Share insights on inquiry and design processes and project and problem based learning with your LCG for Assessment Task 1.

### Week 5 - 01 Apr 2024

Module/Topic	Chapter	Events and Submissions/Topic
Mathematics in STEM	Boaler, J. (1998). Open and closed mathematics: Student experiences and understandings. <i>Journal for research in mathematics education</i> , 29(1), 41-62.  <a href="#">Loong, E. Y.-K. and S. Herbert (2018). "Primary school teachers' use of digital technology in mathematics: The complexities." <i>Mathematics Education Research Journal</i> 30(4): 475-498</a>	Review the Moodle site weekly content under the Learning Material section. Complete the content for each section headings and edit written work for Assessment Task 1 submission. <b>Assessment Task 1 - Written Assessment (45% weighting) - Due week 5</b> Friday 5 April, 11:45pm AEST  <b>Written Assessment</b> Due: Week 5 Friday (5 Apr 2024) 11:45 pm AEST

### Vacation Week - 08 Apr 2024

Module/Topic	Chapter	Events and Submissions/Topic
--------------	---------	------------------------------

**Week 6 - 15 Apr 2024**

Module/Topic	Chapter	Events and Submissions/Topic
Dialogic Teaching and Reflective Practices	<a href="#">Kim, &amp; Wilkinson, J. A. . (2019). What is dialogic teaching? Constructing, deconstructing, and reconstructing a pedagogy of classroom talk. Learning, Culture and Social Interaction, 21, 70-86. https://doi.org/10.1016/j.lcsi.2019.02.003</a> <a href="#">Pedro. (2005). Reflection in teacher education: exploring pre-service teachers' meanings of reflective practice. Reflective Practice, 6(1), 49-66. https://doi.org/10.1080/1462394042000326860</a>	<p>Review the Moodle site weekly content under the Learning Material section.</p> <p>Begin discussion in your LCG on a STEM unit of work.</p>

**Week 7 - 22 Apr 2024**

Module/Topic	Chapter	Events and Submissions/Topic
STEM Pedagogies	<a href="#">Technology: an Australian perspective. European Journal of Engineering Education, 34(5), 439-445. https://doi.org/10.1080/03043790903137585</a> Literacy: A Constructivist Approach for Ages 3 to 8. Redleaf Press. Read the introduction pages 1- 3	<p>Review the Moodle site weekly content under the Learning Material section.</p> <p>Set a time line for completion of tasks for Assessment Task 2 with your LCG.</p>

**Week 8 - 29 Apr 2024**

Module/Topic	Chapter	Events and Submissions/Topic
Diversity in STEM	Little, A., & León de la Barra, B. A. (2009). Attracting girls to science, engineering and technology: an Australian perspective.	<p>Review the Moodle site weekly content under the Learning Material section.</p> <p>Share research and thoughts on readings for Assessment Task 2 with your LCG</p> <p>Begin report for Assessment Task 2 presentation to your LCG on Feedback Fruits.</p>

**Week 9 - 06 May 2024**

Module/Topic	Chapter	Events and Submissions/Topic
STEM, STEAM and other variations	<a href="#">Texley, J., &amp; Ruud, R. M. (2017). Teaching STEM</a> Froschauer, L. (2016). STEAM: Beyond the acronym. Science and Children, 53(6), 5.	<p>Review the Moodle site weekly content under the Learning Material section.</p> <p>STEM unit of work project reports are uploaded to Feedback Fruits your LCG to review and assess for Assessment Task 2.</p>

**Week 10 - 13 May 2024**

Module/Topic	Chapter	Events and Submissions/Topic
STEM and Coding	Lloyd, & Chandra, V. (2020). Teaching coding and computational thinking in primary classrooms: perceptions of Australian preservice teachers. <i>Curriculum Perspectives</i> . <a href="https://doi.org/10.1007/s41297-020-00117-1">https://doi.org/10.1007/s41297-020-00117-1</a>	<p>Review the Moodle site weekly content under the Learning Material section.</p> <p>LCG members review each others STEM unit of work projects reports, give feedback each LCG members reports.</p> <p>Complete assessment task 2 Part 1 STEM unit of work project presentation peer evaluation rubric on Feedback Fruits (10% weighting of AT2).</p>

**Week 11 - 20 May 2024**

Module/Topic	Chapter	Events and Submissions/Topic
--------------	---------	------------------------------

## STEM Resources

Hill, H. Lynch, K., Gonzalez, K. E., & Pollard, C. (2020). Professional development that improves STEM outcomes. *Phi Delta Kappan*, 101(5), 50-56.  
<https://doi.org/10.1177/0031721720903829>

Review the Moodle site weekly content under the Learning Material section.  
 Work with LCG in writing and editing Assessment Task 2 Part 2 written submission.

### Week 12 - 27 May 2024

Module/Topic	Chapter	Events and Submissions/Topic
Reflections on STEM		Submission of Assessment Task 2 Part 2 written submission (35% weighting) - <b>Due week 12</b> , Friday May 31, 11:45pm AEST  <b>Reflective Practice Assessment</b> Due: Week 12 Friday (31 May 2024) 11:45 pm AEST

### Review/Exam Week - 03 Jun 2024

Module/Topic	Chapter	Events and Submissions/Topic
		Completion of Assessment Task 3 Peer Evaluation (10% weighting) - Due week 13, Friday June 7, 11:45pm AEST  <b>Learning Community Group Peer Evaluation</b> Due: Review/Exam Week Friday (7 June 2024) 11:45 pm AEST

### Exam Week - 10 Jun 2024

Module/Topic	Chapter	Events and Submissions/Topic
--------------	---------	------------------------------

## Term Specific Information

Communication between the Unit Coordinator (Dr Mark Gronow) and students enrolled in this unit happens through student's CQUniversity email, MSTEAMS Learning Community Group (LCG) and on the Moodle site. All students are expected to check their CQUniversity email and MSTEAMS LCG **every day**, for the duration of the course. Students can communicate to their LCG members on their LCG on the MSTEAMS site, to individual students or the unit coordinator on MSTEAMS chat, or message every student and Unit Coordinator in the MSTEAMS General Chat. Each week. The Unit Coordinator will present a 10 minute video recording at the beginning of each week, which ALL students **MUST** listen to; new and important information relevant to the assessment tasks will be discussed. This will be saved on the Moodle site. Also a recording of each week's online tutorial will be saved on the Moodle site. Essential to this course is involvement in your LCG. If you for some reason, you cannot commit to your LCG discussion, then you **MUST** let your LCG members know as courtesy and so you are not poorly marked for a lack of involvement in Assessment Task 3. If at anytime a personal situation arises that prevents you from engaging in the course, please inform the Unit Coordinator by email as soon as the situation allows it.

## Assessment Tasks

### 1 Written Assessment

#### Assessment Type

Written Assessment

#### Task Description

Students are required to reflect on the inquiry processes and problem solving learning through the integration of the STEM disciplines (Science, Technology, Engineering and Mathematics) as covered in weeks 1 - 5 of this unit. In this written submission, students must show evidence of engagement with weeks 1 - 5 course content and demonstrate their participation in their Learning Community Group (LCG). Students are expected demonstrate evidence

of wider reading, accessed either from the Moodle content or their own investigations, with examples applicable to a real-world STEM lesson. The task must be written as a coherent narrative in an academic style adhering to APA7 formatting and referencing procedures.

The written submission will provide evidence of the student's engagement with the course content through the following sections:

1. Introduction - What is STEM and why teach it as an integrated suite of disciplines in real-world contexts?

2. Explanation of the inquiry process using a real-world example that integrates the STEM disciplines.

Design a real-world example of an integrated STEM inquiry activity. Outline an activity appropriate for a Year 1 STEM lesson, using the Australian Curriculum(v9) content description AC9S1I01 "*pose questions to explore observed simple patterns and relationship to make predication base on experiences*", from the Science Inquiry sub-strand of the Science content strand.

Choose one of the elaborations for the content description AC9S1I01 as the real-world focus. Explain the STEM inquiry activity, identify how the four STEM disciplines are integrated in the STEM inquiry activity using one content description from the Australian Curriculum (v9), of each of the content strands: Science, Mathematics and Technology, include an Engineering connection. Include the general capabilities associated to the activity to support the inquiry process.

**A detailed lesson plan is not required;** however, a clear description of the STEM inquiry activity is required.

3. Explanation of problem-solving learning using a real-world example that integrates the STEM disciplines.

Design an example of a real-world integrated STEM problem-solving activity. This requires an outline of an activity appropriate for a Year 1 STEM lesson, using the Australian Curriculum(v9) content description AC9M1SP02 "*give and follow directions to move people and objects to different locations within a space*", from the Space sub-strand of the Mathematics content strand.

Choose one of the elaborations for the content description AC9M1SP02 as the focus of a real-world context. Explain the activity chosen, identify how the four STEM disciplines are integrated in the STEM activity and one content description from the Australian Curriculum (v9), content strands: Science, and Technology, include an Engineering connection.

Include the general capabilities associated to the activity to support problem-solving learning.

**A detailed lesson plan is not required;** however, a clear description of the activity and problem-solving learning is required.

4. Overview of the peer feedback from Learning Community Group discussions.

Choose one or two discussions that you were involved in with your LCG as a response to the weekly course content.

Discuss a topic that interested you and where your LCG discussions helped your understanding of a topic or where you were able to help your LCG members.

5. Conclusion - Self-reflection of engagement and understanding of the week 1 - 5 course content and the professional learning gained from this engagement.

#### Assessment 1 Criteria

In this assessment, the student will be assessed on their:

1. Understanding of integrating the STEM disciplines in real-world contexts.
2. Understanding inquiry processes with real-world examples.
3. Understanding problem-solving learning with real-world examples.
4. Professional engagement with the course content through the Learning Community Group.
5. Self-reflection of engagement and learning with the course content achieved
6. Research presented as a written narrative in an academic style adhering to APA7 formatting and referencing procedures.

#### Criteria Rubric

[Click here to view the rubric as the criteria grading sheet for this assessment.](#)

Australian Professional Standards for Teachers demonstrated:

1.2 Understand how students learn;

2.6 Information and Communication Technology (ICTs);

3.1 Establish challenging learning goals; and,

6.2 Engage in professional learning and improve practice.

#### Your submission

You can structure your written submission as:

- Title page including: your name, student number, unit number and name, word count.
- Content's page: numbered section headings with links to each section.
- Body of work (see below for suggested chapter structure and word count).
- List of references.

Do not include any appendices

(NOTE Title page, contents page, and list of references are not included in the 1500 words count).

This task is strictly 1500 words. Markers may not read part of the submission that extends beyond the acceptable higher word limit range. Acceptable range is 10% of the word limit, thus all submissions must be between 1350 and 1650 words.

Submit your response to this task on the Moodle "Assessment Task 1 Detail" site as one word document, there should



not be extra files in your submission.

Your response should be named as: SmithJ\_12345678\_EDED14355AT1.

That is, "Surname, First name initial, underscore, student number, underscore, EDED14355AT1".

Suggested chapter structure and suggested word count

Section heading and content

Word count

1. Introduction: What is STEM and integrating STEM disciplines in real world contexts. (300 words)
2. Body: design and inquiry approaches & real-world examples. (400 words)
3. Body: problem and project-based learning & real-world examples. (400 words)
4. Overview professional learning from LCGs. (200 words)
5. Conclusion: Self-reflection of professional engagement with course content. (200 words)

Total 1500 words

Assessment Due Date: Week 5 Friday 5 April 2024 11:45pm AEST

### Assessment Due Date

Week 5 Friday (5 Apr 2024) 11:45 pm AEST

Submit task as a single word document (not a pdf) without any attachments.

### Return Date to Students

Week 7 Friday (26 Apr 2024)

Marked assessment tasks will be returned with annotation on manuscript and completed criteria grading sheet with comments. Submissions over the 1500 word limit may not receive feedback.

### Weighting

45%

### Assessment Criteria

In this assessment, the student will be assessed on their:

- Understanding of integrating the STEM disciplines in real-world contexts.
- Understanding inquiry process with real-world examples.
- Understanding problem-solving learning with real-world examples.
- Professional engagement with the course content through the Learning Community Group.
- Self-reflection of engagement and learning with the course content achieved.
- Research presented as a written narrative in an academic style adhering to APA7 formatting and referencing procedures.

### Referencing Style

- [American Psychological Association 7th Edition \(APA 7th edition\)](#)

### Submission

Online

### Submission Instructions

Submit your response to this task on the Moodle "Assessment Task 1 Detail" site as one word document, there should not be extra files in your submission. Your response should be named as: SmithJ\_12345678\_EDED14355AT1. That is, "Surname, First name initial, underscore, student number, underscore, EDED14355AT1".

### Learning Outcomes Assessed

- Applies professional learning to develop knowledge and understanding of how students' learn the interconnectedness of Science, Technology, Engineering and Mathematics (STEM) disciplines
- Selects appropriate STEM content and develops collaborative teaching strategies that apply and use Information and Communication Technology (ICTs) safely, responsibly and ethically through mathematical problem solving; scientific inquiry, engineering and/or technological design principles
- Plan, structure and sequence challenging learning programs that utilise evidence-based research to develop innovative pedagogical practices in STEM
- Differentiate the teaching of STEM content and its variations through teaching strategies that meet the needs of an inclusive and diverse range of students.

## 2 Reflective Practice Assessment

### Assessment Type

Reflective Practice Assignment

### Task Description

This task has two components

Part 1: STEM Unit of work project report presented to Learning Community Group members

Part 2: Written report submitted on Moodle for external marking.

### **Part 1- STEM UNIT OF WORK PROJECT REPORT**

All Students will work within their Learning Community Groups (LCG) in preparation for the individual report to be presented to their LCG. Students can share ideas, research and support each other in the preparation of their report. The presentation will involve each LCG member presenting a 5-10 minute report to their LCG of a STEM unit of work project developed for a year 3-4 class.

#### **LEARNING COMMUNITY GROUP (LCG) Presentation on Feedback Fruits**

Each LCG member gives a report (see suggested timeline below) on their STEM unit of work project to their LCG members. Each LCG member reviews other LCG member's reports responding to set Report Criteria Questions.. Each presenter reviews their own recording and completes their self-reflection report. Once the LCG reviews are complete, each LCG member evaluates each other's reports using the Feedback Fruits rubric.

### **Part 2 Written Report**

The 1000 word written report is submitted as a reflective practice task.

This written report of the STEM unit of work project development is written in academic style following APA7 formatting and referencing guidelines. This written report includes references to the literature that framed the STEM unit of work project, references to the Australian Curriculum (v9) (strands, sub-strands, content descriptions, elaborations, and General Capabilities). This written report is not a script or a reproduction of your report, it is an independently written reflection of the processes undertaken, the development and research of your STEM unit of work project done to complete the STEM unit of work report presentation. This is written account of the research undertaken to complete this task and feedback received from your LCG members is marked independently, other LCG members do not influence the marking of this written report.

### **Assessment Due Date**

Week 12 Friday (31 May 2024) 11:45 pm AEST

Submit task as a single word document (not a pdf) without any attachments.

### **Return Date to Students**

Marked assessment tasks will be returned with annotation on manuscript and completed criteria grading sheet with comments. Submissions over the 1500 word limit may not receive feedback.

### **Weighting**

45%

### **Assessment Criteria**

In this assessment students will be assessed on:

- Selects real-world STEM content with connections to the Australian Curriculum.
- Integrates the STEM disciplines and its variations in a project-based inquiry unit of work
- Exhibits wider reading as evidence-based research that informs the development of pedagogical practices in STEM education.
- Demonstrates understanding and inclusion of the STEM education practices meeting the needs of an inclusive and diverse range of students.
- Uses reflective practices as a professional learning tool to critique, reflect and evaluate understanding of STEM education, knowledge, and pedagogy.
- Written submission is presented as a narrative in an academic style adhering to APA7 formatting and referencing procedures.

### **Referencing Style**

- [American Psychological Association 7th Edition \(APA 7th edition\)](#)

### **Submission**

Online

### **Submission Instructions**

This task is strictly 1000 words. Markers may not read part of the submission that extends beyond the acceptable higher word limit range. Acceptable range is 10% of the word limit, thus all submissions must be between 1350 and 1650 words. Submit your response online, on this Moodle page, as one document. Do not attach multiple files. Name your file as: "Your surname, First name initial, underscore, student number, underscore, EDED14355AT2" e.g. SmithJ\_12345678\_EDED14355AT2.

### **Learning Outcomes Assessed**

- Applies professional learning to develop knowledge and understanding of how students' learn the interconnectedness of Science, Technology, Engineering and Mathematics (STEM) disciplines

- Selects appropriate STEM content and develops collaborative teaching strategies that apply and use Information and Communication Technology (ICTs) safely, responsibly and ethically through mathematical problem solving; scientific inquiry, engineering and/or technological design principles
- Plan, structure and sequence challenging learning programs that utilise evidence-based research to develop innovative pedagogical practices in STEM
- Differentiate the teaching of STEM content and its variations through teaching strategies that meet the needs of an inclusive and diverse range of students.

### 3 Learning Community Group Peer Evaluation

#### Assessment Type

Peer assessment

#### Task Description

Students will be evaluating each of your LCG members commitment to the LCG and the quality of their involvement on the SPA peer evaluation application.

Students will be required to give a grade of 0 - 5 for each group member based on 10 criteria questions given in the SPA questions. The questions involve quality of involvement and commitment to the Learning Community Group.

The total mark, given by the LCG members will be recalculated to a mark out of 10, students will not be disadvantaged if a LCG member withdraws from the course or fails to complete this assessment. The final mark from SPA will be entered into the Moodle grade book to become 10% of the student's final mark.

#### Assessment Due Date

Review/Exam Week Friday (7 June 2024) 11:45 pm AEST

Complete peer evaluation on SPA application from the assessment task 3 section on Moodle

#### Return Date to Students

#### Weighting

10%

#### Assessment Criteria

No Assessment Criteria

#### Referencing Style

- [American Psychological Association 7th Edition \(APA 7th edition\)](#)

#### Submission

Online

#### Submission Instructions

Evaluations are completed on the Moodle SPA application

#### Learning Outcomes Assessed

- Applies professional learning to develop knowledge and understanding of how students' learn the interconnectedness of Science, Technology, Engineering and Mathematics (STEM) disciplines
- Selects appropriate STEM content and develops collaborative teaching strategies that apply and use Information and Communication Technology (ICTs) safely, responsibly and ethically through mathematical problem solving; scientific inquiry, engineering and/or technological design principles
- Plan, structure and sequence challenging learning programs that utilise evidence-based research to develop innovative pedagogical practices in STEM
- Differentiate the teaching of STEM content and its variations through teaching strategies that meet the needs of an inclusive and diverse range of students.

## 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