

# EDCU20037 Numeracy Learning

## Term 1 - 2026

Profile information current as at 16/03/2026 12:40 am

All details in this unit profile for EDCU20037 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

Quality experiences and effective learning and teaching interactions are central to the development of children's confident and purposeful use of Mathematical knowledge and skills in a wide range of situations. In this unit, you will develop knowledge of evidence-based pedagogical approaches that enhance the conceptual understanding and numerate thinking of children in early years and primary school settings. You will apply this knowledge to the analysis and evaluation of resources and teaching practices and devise modifications or improvements that enhance their impact on children's proficiency in Mathematics. Special emphasis is given to the progression from concrete hands-on activities to symbolic and abstract representation of the four basic operations. In addition, this unit will provide opportunities for you to extend and refine your own Mathematical knowledge and confidence and reflect on your professional learning needs in relation to the effective teaching of Mathematics in early childhood education and care, and primary school settings.

#### Details

Career Level: *Postgraduate*

Unit Level: *Level 8*

Credit Points: 6

Student Contribution Band: 7

Fraction of Full-Time Student Load: 0.125

#### Pre-requisites or Co-requisites

Completion of 72 credit points in CA10 or CG72 OR Admission to CM43 or CC45.

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 - 2026

- 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. Online Test

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](#).

## 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 SUTE and UC observations

Feedback

Learning materials

Recommendation

Learning materials will be updated to reflect current curriculum.

## Unit Learning Outcomes

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

1. Evaluate strategies and resources for teaching mathematical understanding and the purposeful application of numeracy in a range of learning contexts and situations
2. Identify, select and use teaching and learning strategies and resources that build on and support the development of learners' numeracy skills including mathematical applications and problem solving
3. Identify appropriate strategies for gathering information and making judgments about students' numeracy development
4. Assess and develop personal numeracy skills
5. Reflect on personal numeracy competence to describe ways in which professional learning for teachers contributes to effective teaching practice and improved student learning outcomes.

Successful completion of this unit provides opportunities for students to demonstrate the Australian Professional Standards for Teachers focus areas of:

- 1.2 Understand how students learn
- 2.1 Content and teaching strategies of the teaching area
- 2.2 Content selection and organisation
- 2.5 Literacy and numeracy strategies
- 3.3 Use teaching strategies
- 3.4 Select and use resources
- 3.6 Evaluate and improve teaching programs
- 5.1 Assess student learning
- 6.1 Identify and plan professional learning needs
- 6.2 Engage in professional learning and improve practice
- 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                 | 3 | 4 | 5   |
| 1 - Written Assessment - 50% | ●                 | ● | ● |     |
| 2 - Online Test - 50%        |                   |   |   | ● ● |

### Alignment of Graduate Attributes to Learning Outcomes

| Graduate Attributes                                | Learning Outcomes |   |   |   |
|--|-------------------|---|---|---|
|  | 1                 | 3 | 4 | 5 |
| 1 - Knowledge                                      | ○                 | ○ | ○ | ○ |
| 2 - Communication                                  | ○                 | ○ | ○ | ○ |
| 3 - Cognitive, technical and creative skills       |                   | ○ | ○ |   |
| 4 - Research                                       | ○                 |   |   | ○ |
| 5 - Self-management                                | ○                 |   |   | ○ |
| 6 - Ethical and Professional Responsibility        |                   |   |   | ○ |
| 7 - Leadership                                     |                   |   |   |   |
| 8 - First Nations Knowledges                       |                   |   |   |   |
| 9 - 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

No referencing style set.

## Teaching Contacts

Cathryn Murdoch Unit Coordinator  
[c.murdoch@cqu.edu.au](mailto:c.murdoch@cqu.edu.au)

## Schedule

### Week 1 - Defining numeracy - 09 Mar 2026

| Module/Topic  | Chapter  | Events and Submissions/Topic |
|---|--|------------------------------|
| <p>Topic 1: Defining numeracy<br/>Real world applications of mathematical thinking<br/>Australian Curriculum: Mathematics and the National Numeracy Learning Progression<br/><i>Pedagogical Practices: Questioning, collaborating</i><br/>By the end of this topic, you will be able to:</p> <ul style="list-style-type: none"><li>• Define numeracy and justify its importance in the current context of mathematics teaching and learning in the primary years of schooling.</li><li>• Navigate the Australian Curriculum: Mathematics framework and articulate how the curriculum is constructed.</li><li>• Explain how learning theories informs mathematics teaching and learning.</li><li>• Articulate how mathematical concepts and processes are constructed through language, materials and symbols.</li></ul> | <p>Australian Education Research Organisation (AERO). (2023). Which skills are important for future literacy and numeracy?<br/><a href="https://www.edresearch.edu.au/sites/default/files/2023-12/literacy-numeracy-skills-future-learning-aa_2.pdf">https://www.edresearch.edu.au/sites/default/files/2023-12/literacy-numeracy-skills-future-learning-aa_2.pdf</a></p> <p>Fleer, M., &amp; Raban, B. (2007). Early childhood literacy and numeracy: Building good practice. Department of Education, Science and Training.</p> |                              |

### Week 2 - Approaches to teaching mathematics - 16 Mar 2026

| Module/Topic   | Chapter   | Events and Submissions/Topic |
|--|---|------------------------------|
| <p>Topic 2: Approaches to teaching mathematics to build confidence and proficiency<br/>Proficiency in Mathematics = Understanding, Fluency, Reasoning and Problem Solving<br/><i>Pedagogical Practices: Developing language for learning discourse, making connections, explicit (intentional) teaching, learning goals</i><br/>By the end of this topic, you will be able to:</p> <ul style="list-style-type: none"><li>• Comprehend the significance of numeracy and its essential components.</li><li>• Explain the importance of using materials and visual representations to develop mathematical concepts</li><li>• Recognise the role of language in teaching and learning mathematics</li></ul> | <p>Knaus, M. (2016). Maths is all around you: Developing mathematical concepts in early years. Teaching Solutions.</p> <p>Set Text: Booker, G., Bond, D., &amp; Seah, R. (2023). Teaching primary mathematics (6th ed.). Pearson. Chapter 1 – Approaches to mathematics teaching and learning (pp. 6 – 28)</p> <p>Johnston, K., &amp; Degotardi, S. (2020). More than “more”: Quantity and quality of mathematical language used by educators in mealtimes with infants. <i>International Journal of Early Years Education</i>, 29(3), 271–287. <a href="https://doi.org/10.1080/09669760.2020.1848529">https://doi.org/10.1080/09669760.2020.1848529</a></p> <p>National Association for the Education of Young Children. (2020). Math talk with infants and toddlers. <a href="https://www.naeyc.org/our-work/families/math-talk-infants-and-toddlers">https://www.naeyc.org/our-work/families/math-talk-infants-and-toddlers</a></p> |                              |

### Week 3 - Problem Solving - 23 Mar 2026

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

Topic 3: Problem Solving; moving from concrete to abstract in the conceptual development of mathematical concepts

The importance of mathematical language to describe thinking processes

*Pedagogical Practices: Releasing responsibility, metacognition and reflecting*

By the end of this topic, you will be able to:

- Know the pedagogy for teaching students how to problem solve
- Explain how to use the Analyse-Explore-Try model
- Summarise the importance of communication and discussion within problem solving

Booker, G., Bond, D., & Seah, R. (2023). Teaching primary mathematics (6th ed.). Pearson.

Chapter 2 – Problem Solving (pp. 43 – 91)

#### Week 4 - Numeration (whole numbers) - 30 Mar 2026

Module/Topic

Chapter

Events and Submissions/Topic

Topic 4: Numeration - whole numbers; place value and partitioning

Counting: aural and visual memory

*Pedagogical Practices: Engaging with feedback*

By the end of this topic, you will be able to:

- Describe the significance of renaming numbers in different but equivalent forms
- Explain the sequence for developing understanding of number and place value and counting processes
- Recognise likely learning difficulties students experience with numeration
- Identify and justify strategies for teaching numeration

Set Text: Booker, G., Bond, D., & Seah, R. (2023). Teaching primary mathematics (6th ed.). Pearson.

Chapter 3 – Numeration for whole numbers (pp. 100 – 180)

#### Week 5 - Additive thinking - 06 Apr 2026

Module/Topic

Chapter

Events and Submissions/Topic

Topic 5: Additive thinking, developing subtraction

Teaching for Meaning: mental computation and estimation

Calculation: basic, inverse and extended facts

*Pedagogical Practices: Practicing*

By the end of this topic, you will be able to:

- Explain the significance of the part/part/whole model for addition and subtraction
- Explain the sequence for developing an understanding of additive strategies
- Comprehend the role of language in directing and providing meaning for addition and subtraction processes
- Describe the ways in which addition and subtraction are related, yet different
- Summarise how subtraction facts are built from known addition facts

Booker, G., Bond, D., & Seah, R. (2023). Teaching primary mathematics (6th ed.). Pearson.

Chapter 4 – Computation for whole numbers: additive thinking (pp. 184 – 250)

#### Week 6 - Multiplicative thinking - 13 Apr 2026

Module/Topic

Chapter

Events and Submissions/Topic

Topic 6: Multiplicative thinking;  
developing division  
Teaching for Meaning: mental  
computation and estimation  
Calculation: basic, inverse and  
extended facts

By the end of this topic, you will be  
able to:

- Recognise how multiplication concepts, basic facts and processes are best developed
- Explain the sequence for developing an understanding of multiplicative strategies
- Outline the importance of using materials and visual representations to develop multiplication and division processes
- Describe the ways in which multiplication and division are related by different
- Discuss the interactions among multiplicative and additive thinking

Booker, G., Bond, D., & Seah, R. (2023). Teaching primary mathematics (6th ed.). Pearson.  
Chapter 5 – Computation for whole numbers: multiplicative thinking (pp. 253 – 343)

Planning for a sequence of tasks: critical analysis of numeracy teaching strategies Due: Week 6 Wednesday (15 Apr 2026) 11:45 pm AEST

#### Vacation Week - 20 Apr 2026

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

#### Week 7 - Numeration (fractions, including decimal fractions) - 27 Apr 2026

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

Topic 7: Numeration: fractions and  
decimals

By the end of this topic, you will be  
able to:

- Understand the importance of language and models in developing the fraction concepts
- Explain the sequence for developing a conceptual understanding of fractions and decimals
- Realise how place value is continued to record decimal fractions
- Understand how multiplication and division can be extended to common fractions and allow renaming among common fractions, decimal fractions and per cents

Booker, G., Bond, D., & Seah, R. (2023). Teaching primary mathematics (6th ed.). Pearson.  
Chapter 6 – Numeration and computation for fractional ideas (pp. 347 – 419)

On-line Quiz 1

#### Week 8 - Connections to strengthen concepts - 04 May 2026

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

**Topic 8: Connections and conceptual development + Professional Learning through Reflection**

Moving from concrete to abstract in the conceptual development of mathematical concepts  
Building positive dispositions for mathematics

By the end of this topic, you will be able to:

- Describe the links among concepts and processes within and between the areas of mathematics
- Summarise how multiplicative thinking connects to numeration and additive thinking
- Realise the ways in which measurement and space relate to number
- Outline how probability and statistics build on number, proportional reasoning, measurement and geometry
- Demonstrate and understanding of the rationale for continued professional learning and the implications for improved student learning

Booker, G., Bond, D., & Seah, R. (2023). Teaching primary mathematics (6th ed.). Pearson.

Chapter 11 – Connecting ideas across mathematics (pp. 657 – 671)

Church, A., Cohrssen, C., Ishimine, K., & Tayler, C. (2013). Playing with maths: Facilitating the learning in play-based learning. *Australasian Journal of Early Childhood*, 38(1), 95-99.  
<https://doi.org/10.1177/183693911303800114>

On-line Quiz 2

**Week 9 - Measurement - 11 May 2026**

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

**Topic 9: Measurement; Real world application of mathematical thinking**  
The development of spatial sense, structure and pattern, number, measurement, data augmentation  
Establishing the foundations of numeracy in the early years – concepts of size and number sense.

By the end of this topic, you will be able to:

- Describe and use the measurement process, including nonstandard and standard units of measure
- Explain the sequence for developing a conceptual understanding of units of measurement and measuring time
- Outline the different attributes in measurement, such as length, mass, area, angle and so on
- Describe the learning sequence for each measurement attribute
- Identify likely difficulties for each measurement attribute

Booker, G., Bond, D., & Seah, R. (2023). Teaching primary mathematics (6th ed.). Pearson.  
Chapter 8 – Measurement (pp. 464 – 525)

Connor, J., & Neal, D (2014). Everyday Learning about maths and numeracy. Volume 3, Number 3. Publications Section, Early Childhood Australia.  
Blevins-Knabe, B. (2016). Early mathematical development: How the home environment matters. In B. Blevins-Knabe & A. Austin (Eds.), *Early childhood mathematics skill development in the home environment* (pp. 7–28). Springer.  
[https://doi.org/10.1007/978-3-319-43974-7\\_2](https://doi.org/10.1007/978-3-319-43974-7_2)

On-line Quiz 3

**Week 10 - Assessment practices - 18 May 2026**

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

**Topic 10: Assessment - monitoring progress and responsive teaching**  
Moving from concrete to abstract in the conceptual development of mathematical concepts

Personal numeracy competency – the impact of professional learning on attitudes, teaching practice and student learning in Mathematics  
By the end of this topic, you will be able to:

- Summarise the nature and purposes of assessment in mathematics
- Recognise the value and role of diagnostic assessment

Booker, G., Bond, D., & Seah, R. (2023). Teaching primary mathematics (6th ed.). Pearson.  
Chapter 1 – Approaches to mathematics teaching and learning (pp. 29 – 41)  
Cohrssen, C. (2018, June 6). Assessing children’s understanding during play-based maths activities. *The Spoke*. Early Childhood Australia.  
<http://thespoke.earlychildhoodaustralia.org.au/assessing-childrens-understanding-during-play-based-maths-activities/>

On-line Quiz 4

**Week 11 - Space (Geometry) - 25 May 2026**

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

Topic 11: Space; real world application of mathematical thinking  
 Approaches to teaching and learning in mathematics - building confidence, proficiency and understanding  
 The development of spatial sense, structure and pattern, number, measurement, data argumentation  
 Establishing the foundations of numeracy in the early years - concepts of shape and orientation.

By the end of this topic, you will be able to:

- Explain the importance of learning geometry (space strand) and the role of multiple representations, visualisations and language
- Explain the sequence for developing a conceptual understanding of geometric properties, positioning and locating, chance and interpreting and representing data
- Explain how to analyse, represent, identify relationships in and interpret data
- Illustrate and discuss likelihood and the probability scale
- Identify connections with the three dimensions of the Australian Curriculum (V.9)

Booker, G., Bond, D., & Seah, R. (2023). Teaching primary mathematics (6th ed.). Pearson.  
 Chapter 9 - Geometry (pp. 531 - 594)  
 Chapter 10 - Statistics and probability (pp. 603 - 652)

On-line Quiz 5

Week 12 Algebra and Data (statistics) - 01 Jun 2026

| Module/Topic   | Chapter  | Events and Submissions/Topic   |
|--|--|--|
| Topic 12: Algebra and data<br>The development of spatial sense, structure and pattern, number, measurement, data argumentation<br>By the end of this topic, you will be able to: <ul style="list-style-type: none"> <li>• Describe the nature of algebraic thinking</li> <li>• Explain the sequence for developing a conceptual understanding of number patterns and algebraic thinking</li> <li>• Comprehend the ways symbols can represent algebraic ideas</li> <li>• Outline the framework for dealing with statistics</li> </ul> | Booker, G., Bond, D., & Seah, R. (2023). Teaching primary mathematics (6th ed.). Pearson.<br>Chapter 7 - Algebra and algebraic thinking (pp. 423 - 458)<br><br>Knaus, M. (2016). Maths is all around you: Developing mathematical concepts in early years. Teaching Solutions. (UP page 4) | Personal Numeracy Learning Plan and Reflection - Addressing engagement: an informed reflection on the relationship between professional learning, improved practice and improved student learning in Mathematics in early childhood and primary schooling contexts. Due: Week 12 Wednesday (3 June 2026) 11:45 pm AEST |
| Exam Week - 08 Jun 2026  | Chapter  | Events and Submissions/Topic   |
| Vacation/Exam Week - 15 Jun 2026   | Chapter  | Events and Submissions/Topic   |

## Assessment Tasks

### 1 Planning for a sequence of tasks: critical analysis of numeracy teaching strategies

Assessment Type  
 Written Assessment

Task Description  
 Task Description:

You will draw on professional knowledge and research to respond to the needs of students within their educational

context.

Teachers:

- know the content of their subjects and curriculum
- understand what constitutes effective, developmentally appropriate pedagogical approaches, pedagogical practices and teaching strategies and,
- use this knowledge to make the content meaningful to students.

The Australian Curriculum V9 foregrounds the following pedagogical approaches: connectionist approach, problem-based learning and inquiry-based learning. Through these approaches, there are opportunities for students to develop proficiency, acquire and apply knowledge and skills, investigate represent and interpret and think critically within an environment that fosters a positive disposition to mathematics (ACARA, 2022).

Pedagogical practices for learning include:

- Collaboration
- Making connections
- Developing language
- Metacognition and reflecting
- Engaging the feedback
- Practicing
- Explicit instruction
- Questioning
- Learning Goals
- Releasing Responsibility

Task details:

You are to develop a short sequence (one week) of tasks and lessons, and report on the professional knowledge and research that informed your planning process. The tasks and lesson MUST be designed by you and be informed by the Australian Curriculum (Learning Area: Mathematics and General Capability: Numeracy Progressions).

To complete the task, you will need to use the planning process mapping resources to create a short sequence that develops a conceptual understanding, connects strands and foregrounds the proficiencies.

Develop the sequence into a series of lessons and tasks that have the following features:

- Curriculum aligned learning objectives (learning intent)
- Clear descriptions of how students will show evidence of mastery (success criteria) e.g. formative checks, targeted observation and an explanation of how you would use the evidence to make judgements about progress
- Articulation of the progression of learning relevant to the topic and sequence
- Identification of the critical understanding (comprehension of mathematical concepts, operations and relations, and the connections amongst them - the 'why' as well as the 'how') that student must have constructed to make sense of the topic
- Expectations of teacher and student communication in the process of learning (discourse: explanations of ideas, expected vocabulary used)
- Specific examples of pedagogical practices, selected to maximise learning, embedded in the lesson structure.

This is to be articulated for the collection of lessons, which demonstrate the development of a concept, with additional detail for each lesson in the sequence. Each lesson will have a common structure (learning goals, learning hook, explore, summary and reflection).

Justify pedagogical approaches, pedagogical practices and teaching strategies to demonstrate understanding of the relevant concepts, substance and structure of the curriculum.

Your final submission should be in the form of a written report with the following sections:

- Introduction - brief outline of the context and key considerations for planning appropriate to the curriculum, the learning and the learners. (approx. 400 words)
- Discussion on the research on pedagogical approaches and pedagogical practices appropriate to Mathematics teaching. (approx. 400 words)
- Discussion on the research of common neuromyths that are related to mathematics education and the impact of their perpetuation. (approx. 400 words)
- Justification of the variety of teaching strategies that were used, specifically to motivate students' interests, use a range of representation of learning and providing multiple means of action and expression. (approx. 500 words).
- Lesson plans and activities. You MUST annotate your lesson with detail of the practices and strategies employed, explaining 'why' the practices and strategies have been selected and 'how' they will be enacted in the lesson. Lesson plans can be presented as a table but should not exceed 3 A4 pages (minimum 10pt font, Arial or Times New Roman, single-spaced).
- References (not counted in word limit)

You must submit:

- Your report
- Your annotated lesson plans

WORD COUNT for written assignments: The word count is considered from the first word of the introduction to the last word of the conclusion. It excludes the cover page, abstract, contents page, reference page and appendices. It includes in-text references and direct quotations.

Word count: 2000 words maximum

Your task may be penalised for not adhering to the word count.

The use of Gen AI agents is as follows:

AI tool scale level: Level 2 - You may use AI for planning, idea development, and research. Your final submission should show how you have developed and refined these ideas. Any misuse or lack of disclosure regarding the use of AI tools will be considered a breach of academic integrity.

Please note: The 72-Hour grace period applies to Assessment Task 1.

If you need longer than 72 hours, you'll still need to use the normal Assessment Extension System process.

Assessment Due Date

Week 6 Wednesday (15 Apr 2026) 11:45 pm AEST

Return Date to Students

Marked tasks are returned at the conclusion of moderation

Weighting

50%

Assessment Criteria

Assessment will be marked against the following criteria:

- Use curriculum knowledge and knowledge of student learning and effective teaching strategies to organise content into an effective learning and teaching sequence using structured lesson plans (2.2, 2.3, 3.2)
- Plan for the use of pedagogical approaches, practices and strategies to teach a sequence of lessons and routines, using knowledge and understanding of research into how students learn, critical analysis of common neuromyths in mathematics education and the implications for teaching (1.2, 3.3, 3.4)
- Plan high-quality instruction to positively impact achievement, engagement and motivation using inclusive/differentiated teaching (5.1, 6.2)
- Justify pedagogical approaches, pedagogical practices and teaching strategies to demonstrate understanding of the relevant concepts, substance and structure of the curriculum (2.1, 2.5, 3.6)
- Communication, presentation and referencing

Submission

Online

Submission Instructions

This task is to be uploaded as a single PDF document to Moodle saved in the following format: EDCU20037\_Last name\_First name\_Task 1

Learning Outcomes Assessed

- Evaluate strategies and resources for teaching mathematical understanding and the purposeful application of numeracy in a range of learning contexts and situations
- Identify, select and use teaching and learning strategies and resources that build on and support the development of learners' numeracy skills including mathematical applications and problem solving
- Identify appropriate strategies for gathering information and making judgments about students' numeracy development

**2 Personal Numeracy Learning Plan and Reflection - Addressing engagement: an informed reflection on the relationship between professional learning, improved practice and improved student learning in Mathematics in early childhood and primary schooling contexts.**

Assessment Type

Online Test

Task Description

This task will require you to analytically engage with curriculum, reflect on your development as a teacher using selected focus area of the Australian Professional Standards for Teachers, and apply research on The Brain and Learning.

\*A full copy of the AITSL Professional Standards for Australian Teachers is available at:

<http://www.aitsl.edu.au/australian-professional-standards-for-teachers>

Choosing appropriate pedagogical approaches and practices that align with curriculum intent, current literature and research-based best practice in teaching and learning is a professional responsibility and integral to preparation for teaching.

Your personal plan for professional learning will be in response to personal reflection related to the online quizzes and the learning materials of this unit outlining both short term and long term goals, and will identify the professional learning resources you plan to draw on to support your acquisition of the mathematical knowledge, understanding and skills required for the effective teaching of mathematical ideas and monitoring of concepts that support student's numeracy development.

Task details:

Note: You MUST complete both parts of the task, and you MUST achieve a pass standard in this task to be eligible to pass this unit.

To complete the task, you will need to:

A. Complete the weekly quiz in weeks 7 - 11

- You have 30 minutes to complete each quiz.
- During each quiz you will take photos or screenshots of 1 - 3 questions that you found interesting/challenging. Some of these questions will become a 'hook' for you to explore in your Personal Learning Plan. A total of four of the questions will be interrogated in your task response.
- Each weekly quiz will be open for 6 days of the week only (i.e. Vacation Week quiz will be open from Monday of Week 7 through to Saturday of Week 7)
- Once you complete the quiz and submit, only your overall score will be available. Solutions will be released on Sunday once the quiz has closed for that week. You are not able to go back in and re-attempt the quiz.
- AI use is not permitted during the weekly quizzes. You must complete quiz questions independently within the allotted time.

B. You are to write a summary of the process and findings of investigating four selected questions.

To complete the summary, you should:

- Determine which part of the curriculum the question is representative of in both the -
  - a) Mathematics Learning Area (Year level and Content Description) and
  - b) General Capabilities: Numeracy (element, sub-element and progression level).Use evidence in the form of elaboration statements (learning area) and indicators (progressions) to inform your identification.
- Consider, using knowledge of other learning areas (Science, HASS, Technologies, H.P.E., etc), to describe an authentic learning context where the Mathematical modelling process could be applied using the content of the question that you have identified in step 1.
- Write an alternate question/task or questions/tasks that would engage and motivate students to construct or refine the required understanding of the content. The problem posed will require critical and creative thinking and will have scope for students to ask questions, interpret evidence and communicate findings as appropriate to their Year level and the context.

Sullivan and Lilburn (2015) state that 'good' questions are those which:

1. require more than remembering a fact or reproducing a skill
2. students can learn by answering the questions, and the teacher learns about each student from the attempt
3. there may be several acceptable answers.

Tasks should be differentiated in ways that respond to diverse needs and contexts.

Considerations would include:

- How are pedagogical approaches, practices and teaching strategies appropriate to the curriculum embedded?
- What was considered with regards to the nature of the learner (age, development, stage of schooling, diversity) and the context/content (structural curriculum elements) of the task?

Your responses will reflect your learning in this unit with reference to these considerations; explaining and justifying your questions/tasks relevant to curriculum aligned pedagogical approaches.

This will contribute towards demonstration of short-term learning goals in your personal numeracy learning plan. Seek feedback from your peers and/or teacher colleagues in response to Part B: short term learning (collaborate to moderate). Record responses.

To demonstrate longer term learning intention, also include in your learning plan the (S.M.A.R.T.) goals and strategies planned to upscale your personal numeracy capabilities and areas of interest in response to the unit content.

Your final submission should be in the form of a written report with the following sections:

- Introduction - brief outline of the organisational elements of the Australian Curriculum Version 9 and how they

- shape the scope and sequence of content and achievement standards. (approx. 300 words)
- Question analysis (four questions selected)
- Discussion on the efficacy of proactive practice in preventing misbehaviour and/or disengagement, including the role of high-quality instruction as a proactive practice. (approx. 300 words)
- Justification of pedagogical practices and strategies for the teaching of mathematics and the monitoring of student progress (knowledge and understanding, and skills). (approx. 300 words)
- Discussion of the process of knowledge acquisition through active engagement in learning (NB Connectionist approach) over time informed by sources of professional learning for teachers and collegial collaborations. (approx. 500 words)
- References (not counted in word limit)

You must submit:

- Your personal learning plan made up of the process and outcomes of short-term learning and long-term goals, strategies and tools to measure success.

**WORD COUNT** for written assignments: The word count is considered from the first word of the introduction to the last word of the conclusion. It excludes the cover page, abstract, contents page, reference page and appendices. It includes in-text references and direct quotations.

Word count: 2000 words maximum

Your task may be penalised for not adhering to the word count.

The use of Gen AI agents is as follows:

AI tool scale level: Level 2 - You may use AI for planning, idea development, and research. Your final submission should show how you have developed and refined these ideas. Any misuse or lack of disclosure regarding the use of AI tools will be considered a breach of academic integrity.

AI use is not permitted during the weekly quizzes (Level 1 - You must demonstrate your core skills and knowledge. Any use of AI tools when completing the quizzes will be considered a breach of academic integrity). You must complete quiz questions independently within the allotted time.

Please note: The 72-Hour grace period applies to Assessment Task 2.

- Part A (Weekly quizzes): Exempt from grace period (quizzes close and cannot be reopened)
- Part B (Final written submission): Grace period applies to the stated due date/time.

If you need longer than 72 hours, you'll still need to use the normal Assessment Extension System process.

**IMPORTANT NOTE:** The weekly quizzes in Part A are exempt from the 72-hour submission grace period because each quiz closes at the published close time and cannot be re-opened. The 72-hour grace period applies only to the final Assessment Task 2 written submission due on the stated date/time.

Assessment Due Date

Week 12 Wednesday (3 June 2026) 11:45 pm AEST

Return Date to Students

Tasks will be returned at the conclusion of the moderation process

Weighting

50%

Assessment Criteria

Assessment will be marked against the following criteria:

- Evidence-based analysis of quiz questions including curriculum mapping of Australian Curriculum V9. Design and justification of alternative tasks. (2.1, 3.3)
- Engagement with standards frameworks, appropriate sources of professional learning and application of relevant information to prepare for practice. Documentation of peer/colleague feedback. (6.2)
- Reflection on the learning process of moving from 'novice' to 'expert' and the implications for planning learning. Quality of SMART goals and feasibility of learning strategies. (6.1)
- Professional engagement with research, specifically knowledge of how students learn, to improve student learning outcomes. (6.4)
- Communication, presentation and referencing.

Submission

Online

Submission Instructions

Report must be uploaded as a PDF document to Moodle saved in the following format: EDCU20037\_Last name\_First name\_Task 2

#### Learning Outcomes Assessed

- Assess and develop personal numeracy skills
- Reflect on personal numeracy competence to describe ways in which professional learning for teachers contributes to effective teaching practice and improved student learning outcomes.

## 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