EDCU13017 *Chemical and Physical Sciences*
Term 2 - 2024

Profile information current as at 16/07/2025 06:32 am

General Information

Overview

In Chemical and Physical Sciences, students apply theoretical concepts and current research related to teaching and learning in Science to engage in authentic evaluation and pedagogical design practices. Chemical and Physical Sciences examines both theoretical perspectives and the content and pedagogy required to teach Science in Primary and Early Childhood classrooms. Students develop understanding of the content and structure of these two strands in the Australian Curriculum and build on the knowledge and skills they developed in the Biological and Earth and Space Science unit to further examine views around best practice in Science pedagogy linked to current research. Chemical and Physical Sciences includes an emphasis on assessment practices in Science which can be applied to other strands of this learning area. Planning to teach and assess students' understanding of Science is addressed with an emphasis on how best to engage students in this learning area and scaffold understanding to enhance the ability to provide scientific explanations for phenomena.

Details

Career Level: *Undergraduate*
Unit Level: *Level 3*
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 2 - 2024

- Bundaberg
- Mackay
- Online
- Rockhampton

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. **Practical Assessment**
Weighting: 50%
2. **Practical and 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.

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 evaluations

Feedback

Revise assessments to aid with clarity and to align to the updated curriculum.

Recommendation

Assessments continue to be revised to ensure clarity of expectations.

Feedback from Workshops and email

Feedback

Update Moodle content with more practical and usable examples to help with future teaching, particularly in the Early Childhood area.

Recommendation

The Moodle content will continue to be updated and new readings provided.

Unit Learning Outcomes

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

1. Evaluate examples of teaching and assessment practice in Science 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 lesson sequences that use appropriate research-based teaching strategies and ICTs to structure content and address students' possible misconceptions in Science
4. Develop diagnostic , formative and summative assessment tools that identify students' understanding of scientific phenomena
5. Select assessment strategies that engage students in active learning, promote higher order thinking and scaffold students' understanding of core concepts in the areas of Chemical and Physical sciences.

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

1.1 Physical, social and intellectual development and characteristics of students
1.2 Understand how students learn
2.1 Content and teaching strategies of the teaching area
2.2 Content selection and organisation
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
5.4 Interpret student data

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
1 - Practical Assessment - 50%	•	•	•	•	
2 - Practical and Written Assessment - 50%	•	•		•	•

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes				
	1	2	3	4	5
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					

Alignment of Assessment Tasks to Graduate Attributes

Assessment Tasks	Graduate Attributes									
	1	2	3	4	5	6	7	8	9	10
1 - Practical Assessment - 50%		•	•	•		•	•			
2 - Practical and Written Assessment - 50%	•	•	•	•						

Textbooks and Resources

Textbooks

EDCU13017

Prescribed

Science in Early Childhood
5th Edition (2024)
Authors: Campbell, C. & Howitt, C.
Cambridge
Sydney , NSW , Australia
ISBN: 978-1-009-33974-2
This textbook is only required for Early Childhood Pre-service teachers. Primary pre-service teachers will only need the Skamp and Preston textbook.
EDCU13017

Prescribed

Teaching Primary Science Constructively
8th Edition (2024)
Authors: Skamp, K. & Preston. C.
Cengage
South Melbourne , Victoria , Australia
ISBN: 9780170472814
This textbook is only for Bachelor of Education (Primary) pre-service teachers, however early years' students can buy if they wish. Students who already own the 7th edition will be fine to continue to use it instead of the new 8th edition.

View textbooks at the CQUniversity Bookshop

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

Daren Mallett Unit Coordinator
d.mallett@cqu.edu.au

Schedule

Australian Curriculum Science - 01 Jul 2024

Module/Topic	Chapter	Events and Submissions/Topic

Australian Curriculum Science	Australian Curriculum Assessment and Reporting Authority [ACARA]. (2022). Australian Curriculum: Science – About the learning area. https://v9.australiancurriculum.edu.au/content/dam/en/curriculum/ac-version-9/downloads/science/science-about-the-learning-area-f-10-v9.docx Australian Curriculum Assessment and Reporting Authority [ACARA]. (2022). Australian Curriculum Science: Curriculum content F-6. https://v9.australiancurriculum.edu.au/content/dam/en/curriculum/ac-version-9/downloads/science/science-curriculum-content-f-6-v9.docx	Familiarise yourselves with the Australian Curriculum Science, About this learning area. Try to obtain a copy of the course textbook. If you are an Early Years pre-service teacher, you will have a separate textbook. You do not need to purchase both textbooks. **ASSESSMENT 1 - SCIENTIFIC CONCEPTS AND ALTERNATE CONCEPTIONS** Due: Vacation Week Monday (12 Aug 2024) 11:45 pm AEST **Assessment in Science** Due: Week 12 Monday (30 Sept 2024) 10:45 pm AEST

Week 1 - Australian Curriculum Science and Theoretical frameworks - 08 Jul 2024

Module/Topic	Chapter	Events and Submissions/Topic
Inquiry learning in Science (Review) within a social constructivist and constructionist perspective	**Primary Years Reading** Skamp, K. & Preston, C. (2021). Chapter 2 – Constructivist views of learning and teaching science.In K. Skamp and C. Preston (Eds.), Teaching primary science constructively / edited by Keith Skamp and Christine Preston. (7th edition, pp. 42-76). Cengage. **Early Years Reading** Campbell, C. (2024). Chapter 4: Learning theories related to early childhood science education. In C. Campbell, W.M. Jobling and C. Howitt (Eds.). Science in Early Childhood (5th edition.). Cambridge University Press. **Joint Reading** Preston, C., Mules, M., Baker, D., & Frost, K. (2007). Teaching primary science constructively: Experiences of pre-service teachers at Macquarie University: Part 2. Teaching Science, 53(2), 29-32. Goodrum, D. Science - Teaching and learning in South Australia. https://youtu.be/EipdYVDyhl0	Read and re-read over the two assessments for this unit. Read the readings prior to the first week's workshop.

Week 2 - 15 Jul 2024

Module/Topic	Chapter	Events and Submissions/Topic
Scientific investigation processes	**Primary Reading** Skamp, K. & Preston, C. (2021). Chapter 4 – Thinking and working scientifically. In K. Skamp and C. Preston (Eds.), Teaching primary science constructively / edited by Keith Skamp and Christine Preston. (7th edition, pp. 142-186). Cengage. **Early Years' Reading** Campbell, C. & Howitt, C. (2024). Chapter 1: The place of science in the early years. In C. Campbell, W.M. Jobling and C. Howitt (Eds.). Science in Early Childhood (5th edition., pp. 8-16). Cambridge University Press. Paige, K. (2023). Chapter 3: Science in the Australian Curriculum. In C. Campbell, W.M. Jobling and C. Howitt (Eds.). Science in Early Childhood (5th edition., pp. 43-52). Cambridge University Press. **Joint Reading** Elliott, & Pillman, A. (2016). Making science misconceptions work for us. Teaching Science, 62(1), 38–41. https://doi.org/10.3316/aeipt.214741	Events and Submissions/Topic You should have made a start on your first assignment, which could include the following: • A basic understanding of the first assignment. • Identified at least one misconception you could use in your assignment. • Watched the first week's workshop recording or participated in the workshop. • Assignment 1 is due in Week 5.

Week 3 - 22 Jul 2024

Module/Topic	Chapter	Events and Submissions/Topic
Chemical sciences sub-strand overview Misconceptions in Science	**Joint readings** Kind, V. (2004). Beyond Appearances: Students' misconceptions about basic chemical ideas. (2nd Edition). http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.588.2108&rep=rep1&type=pdf Conezio, & French, L. (2002). Science in the preschool classroom: Capitalizing on children's fascination with the everyday world to foster language and literacy development. Young Children, 57(5), 12–18.	Progress report: You should have done the following - • Completed Part A of AT1. • Draw a structure for your thinking/writing for the research component for Part B and started writing. Due Break Week, Monday 12th August at 11:45 PM (AEST)

Week 4 - 29 Jul 2024

Module/Topic	Chapter	Events and Submissions/Topic
Physical sciences sub-strand overview and Assessment in Science	**Joint reading** Barke, Hazari, A., & Yitbarek, S. (n.d.). Students' Misconceptions and How to Overcome Them. In Misconceptions in Chemistry (pp. 21–36). https://doi.org/10.1007/978-3-540-70989-3_3 **Primary Years' Reading** Ciofalo, J.F. & Wylie, E.C. (2006). Using diagnostic classroom assessment: One question at a time. Teachers College Record. http://mrbartonmaths.com/resourcesnew/8.%20Research/Formative%20Assessment/Using%20Diagnostic%20Classroom%20Assessment.pdf **Early Years' Reading** Howitt, C. Campbell, C. & Infantino, S. (2024). Intentional teaching of science. In C. Campbell, W.M. Jobling and C. Howitt (Eds.). Science in Early Childhood (5th edition., pp. 229-243). Cambridge University Press.	**Assignment 1 Due**: Monday Vacation Week 12/08/2024 Make sure you have: - Watched each week's workshop recording or attended each week's workshop (This is so important) - Gone over the rubric and highlighted key points against the mark you are hoping to get - Finished Part A of the assignment by now and be working on Part B. Make sure you engage in the Moodle content and unit readings for this.

Week 5 - 05 Aug 2024

Module/Topic	Chapter	Events and Submissions/Topic
Assessment in Science	**Early and Primary Years Readings** Hodgson, C. & Pyle, K. (2010). A literature review of assessment for learning in science. http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.471.3251&rep=rep1&type=pdf Campbell, C. & Roberts, P. (2024). Observing, assessing and documenting science learning. In C. Campbell, W.M. Jobling and C. Howitt (Eds.). Science in Early Childhood (5th edition., pp. 244-263). Cambridge University Press.	AT1 Due next Monday Before submitting, make sure you have no spelling or grammatical errors. Check to make sure you have spelled your name correctly and clearly addressed the criteria for the assignment.

Vacation Week - 12 Aug 2024

Module/Topic	Chapter	Events and Submissions/Topic
		ASSESSMENT 1 - SCIENTIFIC CONCEPTS AND ALTERNATE CONCEPTIONS Due: Vacation Week Monday (12 Aug 2024) 11:45 pm AEST

Week 6 - 19 Aug 2024

Module/Topic	Chapter	Events and Submissions/Topic
Teaching chemical sciences	**Joint Reading** Teig, N., Scherer, R., & Nilsen, T. (2019). I know i can, but do i have the time? The role of teachers' self-efficacy and perceived time constraints in implementing cognitive-activation strategies in science. *Frontiers in Psychology, 10*(JULY), 1697–1697. https://doi.org/10.3389/fpsyg.2019.01697 **Primary Years' Reading** Skamp, K. & Preston, C. (2021). Chapter 11 – Physical and chemical change. In K. Skamp and C. Preston (Eds.), Teaching primary science constructively / edited by Keith Skamp and Christine Preston. (7th edition, pp. 468-516). Cengage. **Early Years' Reading** Howitt, C. & Roberts, P. (2024). Planning for teaching science in the early years. In C. Campbell, W.M. Jobling and C. Howitt (Eds.). Science in Early Childhood (5th edition., pp. 212-228). Cambridge University Press.	

Week 7 - 26 Aug 2024

Module/Topic	Chapter	Events and Submissions/Topic

Learning and teaching physical and chemical sciences	**Primary Years' Reading** Skamp, K. & Preston, C. (2021). Chapter 11 – Physical and chemical change. In K. Skamp and C. Preston (Eds.), Teaching primary science constructively / edited by Keith Skamp and Christine Preston. (7th edition, pp. 468-516). Cengage. **Early Years Reading** Hesterman, S. & Hunter, N. (2024). Science learning through play. In C. Campbell, W.M. Jobling and C. Howitt (Eds.). Science in Early Childhood (5th edition., pp. 136-150). Cambridge University Press.	Start planning and mapping out your response to AT2. Organise a reading schedule to follow each week.

Week 8 - 02 Sep 2024

Module/Topic	Chapter	Events and Submissions/Topic
Chemical Sciences	**Early Years Reading** Roberts, P. (2021). Follow the leader: Child-led inquiries to develop science learning of young children. *Journal of Childhood, Education & Society, 2*(3), 303-313. https://doi.org/10.37291/2717638X.202123120 **Primary Years' Reading** Feasey, R. (2021). Chapter 4 – Thinking and working scientifically. In K. Skamp and C. Preston (Eds.), Teaching primary science constructively / edited by Keith Skamp and Christine Preston. (7th edition). Cengage. Etherington, M. (2011). Investigative primary science: A problem-based learning approach. The Australian Journal of Teacher Education, 36(9), 36-57.	You should have completed Part A of AT2

Week 9 - 09 Sep 2024

Module/Topic	Chapter	Events and Submissions/Topic
Physical sciences	**Early Years' Reading** Preston, C. (2024). STEM education in early childhood. In C. Campbell, W.M. Jobling and C. Howitt (Eds.). Science in Early Childhood (5th edition., pp. 136-150). Cambridge University Press. **Primary Years' Reading** Skamp, K. & Preston, C. (2021). Chapter 10 – Materials and their properties. In K. Skamp and C. Preston (Eds.), Teaching primary science constructively / edited by Keith Skamp and Christine Preston. (7th edition). Cengage.	Complete Part B of AT2

Week 10 - 16 Sep 2024

Module/Topic	Chapter	Events and Submissions/Topic
Physical Sciences	**Combined readings** Skamp, K. & Preston, C. (2021). Chapter 7 – Movement and force. In K. Skamp and C. Preston (Eds.), Teaching primary science constructively / edited by Keith Skamp and Christine Preston. (7th edition). Cengage. French, L. (2004). Science as the center of a coherent, integrated early childhood curriculum. *Early childhood research quarterly, 19*(1), 138–149. https://doi.org/10.1016/j.ecresq.2004.01.004	

Week 11 - 23 Sep 2024

Module/Topic	Chapter	Events and Submissions/Topic

Integrating Science into other STEM areas - Review week	**Combined Reading** Dialogic education services. (2023). Preparing A primary science Or STEM inquiry unit plan. https://www.dialogic.com.au/blog/preparing-a-primary-science-or-stem-inquiry-unit-plan **Primary Years' Reading** Skamp, K. & Preston, C. (2021). Chapter 6 – Electricity. In K. Skamp and C. Preston (Eds.), Teaching primary science constructively / edited by Keith Skamp and Christine Preston. (7th edition). Cengage.	AT2 Due on Monday next week.

Week 12 - 30 Sep 2024

Module/Topic	Chapter	Events and Submissions/Topic
Unit review and consolidation	No readings this week	AT2 Due: Monday 30/09/2024 at 10.45pm **Assessment in Science** Due: Week 12 Monday (30 Sept 2024) 10:45 pm AEST

Review/Exam Week - 07 Oct 2024

Module/Topic	Chapter	Events and Submissions/Topic

Exam Week - 14 Oct 2024

Module/Topic	Chapter	Events and Submissions/Topic

Term Specific Information

This year, we are moving to two textbooks for both this subject and EDCU13017.
All Early Years' Pre-service teachers should aim to get a copy of the following text. You will be using a chapter from the primary years' textbook as well, however you do not need to purchase this, if you do not wish to. You will be able to access the Primary e-Text for both textbooks via the CQ University Library catalogue.
Early Years Textbook
Campbell, C., Jobling, W. M., & Howitt, C. (Eds.). (2023). Science in Early Childhood (5th edition.). Cambridge University Press.
Primary Textbook (Only primary trained pre-service teachers will need access to this text)
Skamp, K., & Preston, C. (2021). Teaching Primary Science Constructively (7th ed.). Cengage.

Assessment Tasks

1 ASSESSMENT 1 - SCIENTIFIC CONCEPTS AND ALTERNATE CONCEPTIONS

Assessment Type
Practical Assessment

Task Description
The use of Gen AI:
Within this assessment, the use of Microsoft Copilot, Chat GPT or other Gen AI agents is as follows:
. • Gen AI content is used to generate ideas and general structures.
Word limit: 3000 words
Task Description: You will conduct a case study on a (pretend or real) student (Kindy -Year 6) who has a (Chemical and Physical) scientific misconception and discuss how you will seek to modify this misconception as if you were the child's teacher. Your response will be in two parts as elaborated on below.
Introduction: (Usually write this section last). Provide an overview of your case study, lesson sequence and how you will align student alternate conceptions.

Part A - Case Study

Select a scientific concept from either the Chemical or Physical sciences sub-strand of the Australian Curriculum (Science) that is commonly misunderstood or poorly understood and provide a justification for the method you used to identify the student's alternate conception. Misconceptions or alternate conceptions can often be found in the media, in popular culture or during conversations with children.
Learner context: Identify a learner context that you choose to work with from Kindegarten to Year 6. You will also need to complete a table in this section comparing the student/s alternate conceptions with your understanding of the current science conception/s. These current science conceptions need to be written in your own words showing your

understanding of the science to be taught.

For example:

Learner context: Provide a brief background of the pretend or real child (Use pseudonym).

Students science conceptions	My understanding of the current science conceptions (in your words)

Justification and discussion: Provide a justification and discussion with links to the literature for how you have identified the students alternate conception.

Part B - Replacing Alternate Conceptions and justification of pedagogical approach:

In this section, you are to provide a summary of the lessons you will use with the whole class along with the digital tools you have used to align the students' current understanding with the current science understanding. You will need to also include a critical reflection on this activity in light of what the course readings or other high quality literature says in relation to this kind of teaching as well as a concluding discussion on how the students will demonstrate their understanding of these science concepts to both yourself and the parents.

While you do not need to use the table below, it may be helpful to structure your response to this section this way.

Chemical or Physical Sciences Descriptor:

	Learning intention	Activity / Key questions prompts	Resources / Digital Tools	Critical reflection on lesson
Engage (This may have been discussed above)				
Explore				
Explain				
Elaborate				
Evaluate				

Communicating understanding to students/parents/teachers (with critical reflection): How will you get your students to show their understanding of what they have learned to the parents, teachers and other students? This may have been discussed in the evaluate section above.

Assessment Due Date

Vacation Week Monday (12 Aug 2024) 11:45 pm AEST

Submit online via Moodle

Return Date to Students

Week 7 Monday (26 Aug 2024)

Your task will be returned once moderation has occurred and in time so that you can apply the feedback to your next assignment.

Weighting

50%

Assessment Criteria

1. Scientific concept identified and discussed.
2. Appropriate choice of diagnostic tool including examples of the language surfaced from using the tool.
3. Learning sequence and appropriate use of ICT.
4. Provided evaluation of lessons drawing from appropriate high quality literature
5. Communicates findings using appropriate language for context (students, parents/carers and teachers).

Referencing Style

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

Submission

Online

Learning Outcomes Assessed

- Evaluate examples of teaching and assessment practice in Science 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 lesson sequences that use appropriate research-based teaching strategies and ICTs to structure content and address students' possible misconceptions in Science
- Develop diagnostic , formative and summative assessment tools that identify students' understanding of scientific phenomena

Graduate Attributes

- Problem Solving
- Critical Thinking
- Information Literacy
- Information Technology Competence
- Cross Cultural Competence

2 Assessment in Science

Assessment Type
Practical and Written Assessment

Task Description
The use of Gen AI:
Within this assessment, the use of Microsoft Copilot, Chat GPT or other Gen AI agents is as follows:
. • Gen AI content is used to generate ideas and general structures.
Word Limit: 4000 Words
You are to work collaboratively with one other student to create one physical or chemical science unit of instruction that is part of a STEAM (Science, Technologies, Engineering, Arts and Mathematics) unit, with a discussion about the assessments you will do at the beginning, during and at the end of the unit. Together, you will then develop a summative task along with how the students will demonstrate their understanding of key content and skills learned in this unit.
You will then work individually to complete a critical reflection on the steps you will take to ensure you have the best chance of overcoming obstacles often faced by beginning teachers which can include factors such as teaching self efficacy beliefs, time limitations and science background knowledge.
Part A (Collaborative - 2000-3000 words) Development of a unit of teaching of the Physical or Chemical Sciences sub-strand unit in your own words, and adapted from high quality online sources. You must include how each lesson will be assessed to enable your students to demonstrate their growth in understanding and motivate or engage students in learning chemical or physical sciences unit of instruction. While some of your lessons may be devoted to the students completing their summative assessment, you should still provide a basic guide of what the students and the teacher will be doing in every lesson.
Managing Collaboration: You will be responsible for managing this part of the assignment yourselves, which includes setting up check points for you to each meet. e.g. By the end of week one, pre-service teacher Jane will have completed lessons one and three, while I have completed lessons two and four, etc. A partner find link has been provided on Moodle for you to help you find a partner for this task, or you can choose your own partner that you may have worked successfully with before. You MUST clearly identify who has done what in your unit plan and summative task. Each student will be marked only for their contribution to Part A of the assignment, while you will both receive the same mark for Part B.

Lesson or activity title and number	PST responsible	Science to be taught	Activity / Key questions / prompts	Resources	Description of assessments
1					
2					
3					
4					
5					
6					
7					
8					
9					

Part B Summative task (Collaborative - 250 Words):
Early Years Pre-service teachers: Provide a description on how you will summatively assess growth in understanding

and what evidence you will use to support this. For example: Hosting an event that involves them showcasing the toys that they have made explaining movement of these toys to their parents, other students and teachers.
Primary Years' Pre-service teachers: Provide a task sheet which the students can use to guide them through the requirements of the summative task that they will complete.
Part C (Individual - 750 words): Teig, Scherer and Nilsen (2019) conducted research which drew from other research (Klieme et al., 2009) that reveals how teachers' scientific self-efficacy beliefs and time limitations impact on their use of effective science teaching strategies such as Science inquiry and drawing from students' prior knowledge to develop cognitively challenging lessons. Given some schools in Australia are allocating minimal amounts of time to the teaching science, provide a critical reflection on your above unit demonstrating what you will do to enable yourself to be more confident in your ability to teach and assess science well with the use of effective pedagogies. Your critical reflection should be written in the first or second person, as appropriate.

Assessment Due Date
Week 12 Monday (30 Sept 2024) 10:45 pm AEST

Submit online via Moodle

Return Date to Students
Exam Week Monday (14 Oct 2024)

Your task will be returned once moderation has occurred.

Weighting
50%

Assessment Criteria

- Develop diagnostic , formative and summative assessment tools that identify students' understanding of scientific phenomena
- Select assessment strategies that engage students in active learning, promote higher order thinking and scaffold students' understanding of core concepts in the areas of Chemical and Physical sciences.
- Cohesive writing consistent with academic conventions. Extensive use of relevant and credible sources for explanation of scientific concepts.
- Evaluate teaching and assessment practices in Science within the context of being a beginning teacher.

Referencing Style

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

Submission
Online Group

Submission Instructions
Part A and B to be submitted by one person within the group, while each individual student will submit their individual response to Part C.

Learning Outcomes Assessed

- Evaluate examples of teaching and assessment practice in Science 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
- Develop diagnostic , formative and summative assessment tools that identify students' understanding of scientific phenomena
- Select assessment strategies that engage students in active learning, promote higher order thinking and scaffold students' understanding of core concepts in the areas of Chemical and Physical sciences.

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy

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