22451VIC Diploma of Teacher Education Preparation

This course has been accredited under Part 4.4 of the Education and Training Reform Act 2006.

Accredited for the period: 1 January 2018 to 31 December 2022

Version 1.1

VICTORIA State Government | Education and Training

Version	
Version 1.1 August 2020	Contact details of copyright owner updated
Version 1	Initial Accreditation

Section A: Copyright and course classification information

1. Copyright owner of the course	Copyright of this course is held by the Department of Education and Training, Victoria © State of Victoria (Department of Education and Training) 2018.
2. Address	Executive Director Industry Engagement and VET Systems Higher Education and Skills Group Department of Education and Training (DET) GPO Box 4367 Melbourne Vic 3001 **Organisational Contact:** Manager Training Products Higher Education and Skills Telephone: (03) 7022 1619 Email: course.enquiry@education.vic.gov.au **Day-to-Day Contact** General Studies & Further Education Curriculum Maintenance Manager Victoria Polytechnic PO Box 14428 Melbourne, VIC 8001 Ph: (03) 9919 5300 / 5302 Email: sicmm.generalstudies@vu.edu.au
3. Type of submission	Accreditation

4. Copyright acknowledgement	Copyright of the following units of competency from nationally endorsed training packages is administered by the Commonwealth of Australia and can be accessed from Training.gov.au (See Training.gov.au for more information)
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	• BSB Business Services Training Package
	  - BSBCMM401 Make a presentation
	• CHC Community Services
	  - CHCECE001 Develop cultural competence
	  - CHCEDS016 Support learning for students with disabilities in a classroom environment
	  - CHCEDS019 Support students' mathematics learning
	  - CHCEDS020 Support students' literacy learning
	  - CHCEDS021 Assist facilitation of student learning
	  - CHCEDS022 Work with students in need of additional support

	- CHCEDS024 Use educational strategies to support Aboriginal and/or Torres Strait Islander education - CHCEDS026 Deliver elements of teaching and learning programs - CHCEDS027 Support flexible learning in an education environment - CHCDIV002 Promote Aboriginal and/or Torres Strait Islander cultural safety • PSP Public Sector Training Package - PSPGEN065 Interpret data and related statistics Copyright of the following units of competency from accredited courses is held by the Department of Education and Training, Victoria © State of Victoria. See Victorian Department of Education and Training to access the course documents. • 22442VIC Certificate IV in Science - VU22074 Use a range of techniques to solve mathematical problems • 22236VIC Certificate I in General Education for Adults - VU21337 Work with and interpret numerical information in familiar and routine texts - VU21338 Work with and interpret statistical information in familiar and routine texts • 22237VIC Certificate II in General Education for Adults - VU21356 Engage with a range of complex texts for learning purposes - VU21360 Create a range of complex texts for learning purposes - VU21364 Investigate numerical and statistical information in a range of contexts - VU21365 Investigate & use simple mathematical formulae and problem solving techniques in a range of contexts
5. Licensing and franchise	
6. Course accrediting body	**Victorian Registration and Qualifications Authority**

7. AVETMISS information	***ANZSCO** [Australian and New Zealand Standard Classification of Occupations]*	GEN19 General education - not occupationally specific
	ASCED Code – 4 digit *(Field of Education)*	0701 Teacher Education
	National course code	22451VIC
8. Period of accreditation	1 January 2018 to 31 December 2022	

Section B: Course information

1. Nomenclature	Standard 1 AQTF Standards for Accredited Courses
1.1 Name of the qualification	Diploma of Teacher Education Preparation
1.2 Nominal duration of the course	635 – 715 hours
2. Vocational or educational outcomes	Standard 1 AQTF Standards for Accredited Courses
2.1 Purpose of the course	The purpose of the qualification is to support successful transitions into an undergraduate initial teacher education qualification for those from diverse backgrounds and life stages, without compromising the rigour of their preparation as teachers. Completion of this qualification will not result in registration as a teacher.
3. Development of the course	Standards 1 and 2 AQTF Standards for Accredited Courses
3.1 Industry / enterprise/ community needs	The Victorian and Australian Governments acknowledge the importance of teacher training to achieving quality outcomes for students across the spectrum of early childhood, primary and secondary education. The Australian Government's Teacher Education Ministerial Advisory Group was established in 2014 to provide advice to the Government on ways in which teacher education courses could be improved to better prepare new teachers for the classroom. The Advisory Group's report, Action Now: Classroom Ready Teachers, was released in 2015 and focussed on five themes related to both the selection of entrants to teacher education courses and improvements to teacher education courses. Research undertaken by the Victorian Government in 2016 found that while the school leaver pathway, based on Australian Tertiary Admissions Rank (ATAR) is highly prominent and visible to the public, only 23.4% of students entered Initial Teacher Education in this way in Victoria in 2014. The expansion of flexible pathways was identified as a way of attracting a more diverse range of high quality candidates to teaching. While there is currently no clear indication of future demand it is anticipated that the course will attract students who do not have an ATAR related pathway into a teacher education course. In November 2016 the Victorian Government launched its Excellence in Teacher Education reforms as part of an initiative to improve the quality of teaching and learning in Victoria. The reform agenda has developed 10 school targets which are organised under four themes. The theme of 'Pride and Confidence in Our Schools' includes a Framework for Improving Student Outcomes. This Framework includes the priority of 'Excellence in teaching and learning', which identifies the need to support access to teacher training for those from diverse backgrounds and life stages, without compromising the rigour of their preparation as teachers.

	The course development was guided by a Project Steering Committee comprising:
	Highvale Secondary College — Ian Watkins, Principal (Chair)
	St Mary MacKillop College, Swan Hill — Michelle Haeusler, Principal
	Roxburgh Park PS — Ric Maguire, Principal
	Thornbury PS — Leon Bell, Principal
	RMIT — Victoria Carullo, Deputy Head, Vocational Education
	Chisholm Institute — Amanda Achterberg, Executive Director, Teaching and Learning
	Victoria University — Bill Eckersley, Associate Professor, Early Childhood and Primary Education
	Careers Education Assoc. of Victoria — Bernadette Gigliotti, CEO
	Victorian Institute of Teaching — Fran Cosgrove, Director, Regulatory Services
	Department of Education and Training — Anita Brown, Manager, Teacher Education Reform Unit (proxy Lyn Campbell)
	Monash University — Allie Clemans, Professor Faculty of Education, (proxy Deb Corrigan)
	A Skills and Knowledge Profile was developed to guide the outcomes of the qualification following: • consultation with a focus group of stakeholders from the VET and Higher Education sectors • a survey of current students undertaking teacher education degrees • feedback from PSC members.
	The qualification does not duplicate, by title or coverage, the outcomes of an endorsed training package qualification.
	The following training products were reviewed for their potential to duplicate the outcomes of the Diploma of Teacher Education Preparation: • CHC40213 Certificate IV in Education Support: - Qualification outcomes are specific to support worker roles and do not include the development of academic literacy skills • CHC50113 Diploma of Early Childhood Education and Care: - Qualification outcomes are specific to the occupational role of Early Childhood Educator • CHC50213 Diploma of School Age Education and Care: - Qualification outcomes are specific to the occupational roles of implementing after school / vacation care • TAE50116 Diploma of Vocational Education and Training:

	- Qualification outcomes are specific to the occupational roles of VET trainer and assessor • 10183NAT Diploma of Education: - While the content of this course is not publicly available the ANZSCO identifier indicates that the outcome relates to an Aboriginal and Torres Strait Islander Education Worker • 22313VIC Certificate IV in Tertiary Preparation: - While this qualification provides an alternative pathway for those returning to study in the VET and HE sectors by supporting the development of academic and study skills it does not focus specifically on preparation for entry into the teaching profession • 22317VIC Certificate IV in Liberal Arts: - This qualification provides an alternative pathway to further study in the humanities and social sciences. There are a number of Higher Education Diploma level courses that articulate and / or provide credit into pre service teaching degrees. While some of these courses have a specific education focus, others are related to a more generic tertiary study preparation outcome.
3.2 Review for re-accreditation	Not Applicable
4. Course outcomes	Standards 1, 2, 3 and 4 AQTF Standards for Accredited Courses
4.1 Qualification level	Standards 1, 2 and 3 AQTF Standards for Accredited Courses The outcomes of the 22451VIC Diploma of Teacher Education Preparation meet AQF level 5 criteria through the development of specialised knowledge and skills that support further learning in an initial teacher education pathway. **Knowledge** Graduates will develop knowledge of the education environment, inclusive education, the teaching profession and approaches to learning in the context of early childhood, primary and secondary schooling. **Skills** Graduates will develop the skills to: - critically examine approaches to learning and the ways in which contemporary issues in education impact on teaching and teachers - collaborate with and lead others - use language, literacy and numeracy at a level required to enter undergraduate level teaching qualifications - develop self-management strategies to support resilience in the context of the teaching profession Application of skills and knowledge • Graduates will apply knowledge and skills to demonstrate autonomy, judgement and defined responsibility by: - sourcing and selecting relevant information - taking responsibility for own learning - adapting to different situations

	The volume of learning for this qualification would typically be 1 year and incorporate structured and unstructured activities such as:
	• structured training to develop:
	  - language, literacy and numeracy skills that support transition to the academic environment and achievement of the requirements for teachers
	  - knowledge of the education environment, the teaching profession and inclusive education
	• structured practical experience in an education environment to develop knowledge of the environment
	• self-directed learning to develop academic study skills that support successful transition to higher education.

4.2 Employability skills	Standard 4 AQTF Standards for Accredited Courses **Communication** skills to: • discuss and share information • ask questions and clarify information • negotiate group outcomes • present information in different ways • interpret and create a range of written information • speak to groups • lead others • identify own level of numeracy skill • interpret data **Teamwork** skills to: • support others and contribute to group outcomes • recognise and respond to conflict within teams • manage group outcomes **Self-management** skills to: • adapt to changing requirements • reflect on own attitudes and behaviours • develop strategies to address potential challenges • identify and address own knowledge and/or skill needs • identify the need for and seek assistance when required **Planning and organising** skills to: • plan, manage and evaluate activities in relation to own level of involvement and responsibility • collect, organise and evaluate information **Problem solving** skills to: • manage own time and tasks • recognise the need for and seek appropriate assistance

	• evaluate information and information sources **Learning** skills to: • identify and implement effective personal study strategies • source information **Initiative and enterprise** skills to: • manage own learning **Technology** skills to: • access digital information • identify the ways in which technology can support student engagement
4.3 Recognition given to the course (if applicable)	Standard 5 AQTF Standards for Accredited Courses Not Applicable
4.4 Licensing/ regulatory requirements (if applicable)	Standard 5 AQTF Standards for Accredited Courses Students will be required to have a current Working With Children Check (WWCC) prior to undertaking the following units: • CHCEDS016 Support learning for students with disabilities in a classroom environment • CHCEDS019 Support students' mathematics learning • CHCEDS020 Support students' literacy learning • CHCEDS021 Assist facilitation of student learning • CHCEDS022 Work with students in need of additional support • CHCEDS024 Use educational strategies to support Aboriginal and/or Torres Strait Islander education • CHCEDS026 Deliver elements of teaching and learning programs • CHCEDS027 Support flexible learning in an education environment • CHCECE001 Develop cultural competence See the Victorian State Government website for further information.
5. Course rules	Standards 2, 6,7 and 9 AQTF Standards for Accredited Courses

5.1 Course structure

To be eligible for the award of 22451VIC Diploma of Teacher Education Preparation, learners must successfully complete a total of **12** units comprising:

- 9 core units
- 1 unit from the education practice stream
- 2 elective units

Elective units may be selected from:

- the listed electives not previously completed as part of the practice stream
- any other accredited course or endorsed training package where the unit is first packaged at AQF level 4 or above in the source training product

The selection of elective units should be guided by the vocational, educational and/or personal development needs of learners.

A Statement of Attainment will be issued for any unit of competency completed if the full qualification is not completed.

Unit of competency/ module code	Field of Education code (six-digit)	Unit of competency/module title	Pre-requisite	Nominal hours
Core				
VU22271	070199	Develop academic skills for the tertiary learning environment	Nil	95
VU22272	070199	Investigate the education system	Nil	50
VU22273	070199	Examine approaches to learning	Nil	70
VU22274	070199	Investigate contemporary issues in teaching	Nil	80
VU22275	070199	Investigate the digital education environment	Nil	50
CHCDIV002	090311	Promote Aboriginal and/or Torres Strait Islander cultural safety	Nil	25
VU22074	010101	Use a range of techniques to solve mathematical problems	Nil	110
VU21356	120103	Engage with a range of complex texts for learning purposes	Nil	30
VU21360	120103	Create a range of complex texts for learning purposes	Nil	30
Education Practice Stream				
CHCEDS016	070113	Support learning for students with disabilities in a classroom environment	Nil	35
CHCEDS020	070199	Support students' literacy learning	Nil	40

CHCEDS019	070199	Support students' mathematics learning	Nil	45
CHCEDS026	070199	Deliver elements of teaching and learning programs	Nil	45
CHCEDS021	070199	Assist facilitation of student learning	Nil	50
CHCEDS022	070199	Work with students in need of additional support	Nil	50
Electives				
BSBCMM401	100707	Make a presentation	Nil	30
CHCECE001	090503	Develop cultural competence	Nil	70
CHCEDS016	070113	Support learning for students with disabilities in a classroom environment	Nil	35
CHCEDS019	070199	Support students' mathematics learning	Nil	45
CHCEDS020	070199	Support students' literacy learning	Nil	40
CHCEDS021	070199	Assist facilitation of student learning	Nil	50
CHCEDS022	070199	Work with students in need of additional support	Nil	50
CHCEDS024	070199	Use educational strategies to support Aboriginal and/or Torres Strait Islander education	Nil	55
CHCEDS026	070199	Deliver elements of teaching and learning programs	Nil	45
CHCEDS027	070199	Support flexible learning in an education environment	Nil	45
PSPGEN065	010103	Interpret data and related statistics	Nil	50
VU21337	120103	Work with and interpret numerical information in familiar and routine texts	Nil	30
VU21338	120103	Work with and interpret statistical information in familiar and routine texts	Nil	30
VU21364	120103	Investigate numerical and statistical information in a range of contexts	Nil	50
VU21365	120103	Investigate & use simple mathematical formulae and problem solving techniques in a range of contexts	Nil	50
			Nominal Duration	**635 – 715**

5.2 Entry requirements	Standard 9 AQTF Standards for Accredited Courses There are no entry requirements for the 22451VIC Diploma of Teacher Education Preparation. The following is a general guide to entry in relation to the language, literacy and numeracy skills of learners aligned to the Australian Core Skills Framework (ACSF). See the Department of Education, Skills and Employment for more details. Learners enrolling in the Diploma of Teacher Education Preparation are best equipped to successfully undertake the qualification if they have minimum language, literacy and numeracy skills that align to Level 3 of the ACSF. Learners with language, literacy and numeracy skills at lower levels than those suggested may require additional support to successfully undertake the qualification.
6. Assessment	Standards 10 and 12 AQTF Standards for Accredited Courses
6.1 Assessment strategy	Standard 10 AQTF Standards for Accredited Courses All assessment, including Recognition of Prior Learning (RPL), must be compliant with the requirements of: • Standard 1 of the AQTF: Essential Conditions and Standards for Initial/Continuing Registration and Guidelines 4.1 and 4.2 of the VRQA Guidelines for VET Providers, or • the Standards for Registered Training Organisations 2015 (SRTOs), or • the relevant standards and Guidelines for RTOs at the time of assessment Assessment strategies for the course should: • address the skills and knowledge which underpin performance • gather sufficient evidence to judge achievement of progress towards determining competence • utilise a variety of different processes/sources, such as written, oral and observation to assess knowledge and performance • recognise achievement of elements/competencies regardless of where the enabling learning took place • be flexible in regard to the range and type of evidence provided by the learner • provide opportunity for the learner to challenge assessment provisions and participate in reassessment • be equitable and fair to all learners • not unnecessarily restrict the progress of a learner through the course

	• comprise a clear statement of both the criteria and assessment process • use assessment tools to suit the needs of learners. A variety of assessment methods and evidence gathering techniques may be used with the overriding consideration being that the combined assessment must stress demonstrable performance by the student. Assessment tools must take into account the requirements of the unit in terms of skills, knowledge and performance. The Evidence Guide of each unit provides information specific to the outcomes of each unit. Assessment methods and tools may include: • observation of the learner's performance • observation of oral presentations • review of written reports • oral or written questioning to assess knowledge which underpins performance • third party reports from school based supervisors detailing specific performance of the learner Assessment of units of competency from accredited courses and nationally endorsed training packages must comply with the assessment requirements detailed in the source training product.
6.2 Assessor competencies	Standard 12 AQTF Standards for Accredited Courses Assessment must be undertaken by a person or persons in accordance with: • Standard 1.4 of the AQTF: Essential Conditions and Standards for Initial/Continuing Registration and Guideline 3 of the VRQA Guidelines for VET Providers, OR • The Standards for Registered Training Organisations 2015 (SRTOs), OR • The relevant standards and Guidelines for RTOs at the time of assessment. Assessors of the imported units of competency must meet the requirements of the relevant Training Package or Accredited Course.
7. Delivery	Standards 11 and 12 AQTF Standards for Accredited Courses
7.1 Delivery modes	Standard 11 AQTF Standards for Accredited Courses Delivery of units that require students to be placed in an education environment will require: • access to an environment where skills can be developed and applied with appropriate guidance, support and supervision by a nominated teacher or other education professional

	• sufficient time to develop and apply the relevant skills and knowledge. Entrants to the Diploma of Teacher Education Preparation can have diverse backgrounds and be at different stages of life. Delivery strategies should be selected to enable learners to develop the skills and knowledge contained in the units. Wherever possible delivery options should take advantage of any diversity of the cohort to encourage cross-cultural learning.
7.2 Resources	Standard 12 AQTF Standards for Accredited Courses Training must be delivered by a person or persons in accordance with: • Standard 1.4 of the AQTF: Essential Conditions and Standards for Initial/Continuing Registration and Guideline 3 of the VRQA Guidelines for VET Providers, OR • the Standards for Registered Training Organisations 2015 (SRTOs), OR • the relevant standards and Guidelines for RTOs at the time of assessment. The following units imported from the CHC Community Services Training Package Training will require the provision of an environment where skills can be developed and applied with appropriate guidance, support and supervision by a nominated teacher or other education professional: • CHCEDS016 Support learning for students with disabilities in a classroom environment • CHCEDS019 Support students' mathematics learning • CHCEDS020 Support students' literacy learning • CHCEDS021 Assist facilitation of student learning • CHCEDS022 Work with students in need of additional support • CHCEDS024 Use educational strategies to support Aboriginal and/or Torres Strait Islander education • CHCEDS026 Deliver elements of teaching and learning programs • CHCEDS027 Support flexible learning in an education environment Units of competency imported from training packages or accredited courses must reflect the requirements for trainers specified in that Training Package or Accredited Course.
8. Pathways and articulation	Standard 8 AQTF Standards for Accredited Courses
	There are no formalised articulation arrangements for this course.

	Graduates of this course may pathway into Higher Education undergraduate teacher education courses. Imported units of competency from the CHC Community Services Training Package provide a pathway into a range of education support qualifications from that training package.
9. Ongoing monitoring and evaluation Standard 13 AQTF Standards for Accredited Courses	
	The Service Industries Curriculum Maintenance Manager, General Studies and Further Education, has responsibility for the ongoing monitoring and maintenance of the qualification. A formal review will take place once during the period of accreditation and will be informed by feedback from users of the curriculum and will consider at a minimum: • any changes required to meet emerging or developing needs • changes to any units of competency from nationally endorsed training packages or accredited curricula. Any significant changes to the courses will be notified to the VRQA.

Section C: Units of Competency

The following units of competency developed for this course are contained in Section C:

VU22271 Develop academic skills for the tertiary learning environment

VU22272 Investigate the education system

VU22273 Examine approaches to learning

VU22274 Investigate contemporary issues in teaching

VU22275 Investigate the digital education environment

The following imported units are contained in Section C. (See the DET website to access the full curriculum documents)

VU21337 Work with and interpret numerical information in familiar and routine texts

VU21338 Work with and interpret statistical information in familiar and routine texts

VU21356 Engage with a range of complex texts for learning purposes

VU21360 Create a range of complex texts for learning purposes

VU21364 Investigate numerical and statistical information in a range of contexts

VU21365 Investigate & use simple mathematical formulae and problem solving techniques in a range of contexts

VU22074 Use a range of techniques to solve mathematical problems

The following units of competency can be accessed from the National Register of VET (See the National Register of VET for more information)

BSBCMM401 Make a presentation

CHCECE001 Develop cultural competence

CHCEDS016 Support learning for students with disabilities in a classroom environment

CHCEDS019 Support students' mathematics learning

CHCEDS020 Support students' literacy learning

CHCEDS021 Assist facilitation of student learning

CHCEDS022 Work with students in need of additional support

CHCEDS024 Use educational strategies to support Aboriginal and/or Torres Strait Islander education

CHCEDS026 Deliver elements of teaching and learning programs

CHCEDS027 Support flexible learning in an education environment

CHCDIV002 Promote Aboriginal and/or Torres Strait Islander cultural safety

PSPGEN065 Interpret data and related statistics

Unit Code	**VU22271**
Unit Title	**Develop academic skills for the tertiary learning environment**
Unit Descriptor	This unit describes the skills and knowledge to support the transition to tertiary study by developing knowledge of the tertiary learning environment, collaborative learning and academic literacy skills.
Employability Skills	This unit contains employability skills.
Application of the Unit	This unit applies to learners who wish to develop their study and academic literacy skills to support entry into and participation in an undergraduate teacher education course.

Element	**Performance Criteria**
Elements describe the essential outcomes of a unit of competency. Elements describe actions or outcomes that are demonstrable and assessable.	Performance criteria describe the required performance needed to demonstrate achievement of the element – they identify the standard for the element. Where bold/italicised text is used, further information or explanation is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.
1 Develop strategies to support transition to tertiary education	1.1 Examine ***academic expectations*** of tertiary study
	1.2 Investigate ***sources of information*** that can support transition to tertiary study
	1.3 Identify available support services and their functions
	1.4 Investigate ***factors which can impact on successful transition to tertiary education***
	1.5 Develop ***strategies*** to address the factors investigated
2 Analyse learning strategies	2.1 Identify the ***learning contexts*** commonly experienced in the tertiary education sector
	2.2 Define the ***learning strategies*** commonly applied in the tertiary education sector
	2.3 Analyse the features, benefits and disadvantages of different learning strategies as they relate to different learning contexts
	2.4 Examine own needs in relation to transition for academic success
	2.5 Determine personal learning strategies to maximise own learning opportunities

3 Participate in a collaborative learning experience	3.1 Identify the ways in which collaborative learning groups can be formed and reformed
	3.2 Form a group and agree ***group protocols***
	3.3 Agree a ***learning goal*** to be achieved by the group
	3.4 Agree and document a ***plan*** to achieve the learning goal
	3.5 Implement the plan
	3.6 Review and document the collaborative process learnings
	3.7 Present the learnings in an oral group presentation using ***presentation aids*** as required
4 Examine academic writing requirements	4.1 Identify the ***academic writing process***
	4.2 Identify commonly used ***referencing systems*** and their ***features***
	4.3 Identify the key features of ***common discourse***, ***formal discourse*** and ***academic discourse***
	4.4 Examine the ***elements of academic discourse***
	4.5 Produce a piece of academic writing using the features of academic discourse and include a minimum of two references

Required Knowledge and Skills

This describes the essential skills and knowledge and their level required for this unit.

Required Knowledge:

- sources of information that can support transition to tertiary study
- a range of learning strategies to support development of appropriate personal strategies
- features of respectful communication and behaviour to support positive group interactions
- features of effective oral presentations such as using body language, clarity of expression, speaking clearly and audibly
- elements of academic discourse to support the production of a piece of academic writing
- commonly used referencing systems and their application to a range of academic sources

Required Skills:

- communication skills to:
  - negotiate and agree communication protocols for a collaborative group
  - apply collaborative group protocols
  - participate in an oral group presentation
- literacy skills to:
  - document collaborative group protocols and learnings
  - apply the features of academic discourse to produce a piece of academic writing
- team work skills to:
  - contribute to a collaborative learning experience
  - support others in a collaborative learning experience
  - contribute to an oral group presentation
- self-management skills to:
  - develop strategies to address factors impacting on transition to tertiary study
  - identify own needs in relation to transition for academic success
  - apply collaborative group protocols
- problem solving skills to analyse the features, benefits and disadvantages of different learning strategies as they relate to different learning contexts
- planning and organising skills to:
  - plan, manage and evaluate activities in relation to own level of involvement and responsibility in a collaborative learning experience
  - collect, organise and evaluate information
  - contribute to the preparation of an oral group presentation
- learning skills to determine effective personal learning strategies

Range Statement

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold / italicised wording in the Performance Criteria is detailed below.

Academic expectations may include:	• taking responsibility for own learning • planning for study time • undertaking independent reading and research • attending lectures • preparing for and participating in tutorials • reflecting on learning and seeking assistance where required • setting goals • working with mentors and / or fellow students
Sources of information may include:	• university websites • student portals • study guides • current or past students • student support services
Factors which can impact on successful transition to tertiary education may include:	• previous educational experiences • lengthy absence from education • course expectations • family responsibilities • work commitments • acquisition of English as an additional language • literacy and/or numeracy acquisition
Strategies may include:	• forming study groups • planning for work life balance • study planning • discussion with course coordinators or student support services
Learning contexts may include:	• lectures • tutorials • seminars • e-learning • practical placement • group work • independent work

Learning strategies may include:	• planning • self-monitoring • note-taking • revision • forming partnerships with other students • questioning • tracking • research • observation and feedback
Group protocols may include:	• communication protocols • conflict resolution process • equal contribution to the group • respectful interactions • commitment to completing agreed/assigned tasks
Learning goal may include:	• to investigate an education related topic • to develop a study plan • to undertake relevant research
Plan may include:	• roles and responsibilities • actions and timelines • resources
Presentation aids may include:	• presentation software • posters
Academic writing process may include:	• exploration of text types and structure • number of drafts and their purpose • research and analysis • references and citations • proofreading
Referencing systems may include:	• Harvard • Oxford • American Psychological Association (APA)

Features may include:	• in text referencing • book / e-book references • chapter references • single / multiple author references • footnotes
Common discourse may include:	• interpersonal communication • everyday spoken interchanges using conventions generally understood by most adults
Formal discourse may include:	• specific industry /business related communication • written or verbal communication adjusted for audience hierarchy
Academic discourse may include:	• presentation • essay • thesis • reference books • journals
Elements of academic discourse may include:	• grammatical • structural • writing style • passive / active voice

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the Elements, Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment section in Section B of the Accreditation Submission.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessment must confirm the ability to: • identify, examine and apply a range of information related to tertiary study to support own transition to tertiary education • form a collaborative learning group and plan, implement and review a collaborative learning experience • apply effective presentation skills to participate in an oral group presentation to present learnings from collaborative learning experience • apply the academic writing process and the features of academic discourse to produce a piece of academic writing of a minimum of 1500 words.

Context of and specific resources for assessment	Assessment must ensure: • access to sources of information • access to group participants • sufficient time to plan, implement and review a collaborative learning experience
Method(s) of assessment	The following suggested assessment methods are suitable for this unit: • oral and/or written questioning to assess the knowledge that underpins performance • a written or verbal report detailing the development, implementation and review of a collaborative learning experience • a piece of academic writing of 1500 words which includes the application of a common referencing style

Unit Code VU22272

Unit Title Investigate the education system

Unit Descriptor

This unit describes the skills and knowledge to investigate the education system. This includes examining the links between key national and state government policies and the requirements to work as a teacher.

Employability Skills

This unit contains employability skills.

Application of the Unit

This unit applies to learners who wish to develop their knowledge of the Victorian education system to support entry into and participation in an undergraduate teacher education course.

Element	Performance Criteria
Elements describe the essential outcomes of a unit of competency. Elements describe actions or outcomes that are demonstrable and assessable.	Performance criteria describe the required performance needed to demonstrate achievement of the element – they identify the standard for the element. Where bold/italicised text is used, further information or explanation is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.
1 Examine the Victorian education system	1.1 Identify the ***sectors of the Victorian education system***
	1.2 Investigate the structure and features of each sector
	1.3 Identify the roles and responsibilities of ***key authorities relevant to the Victorian education system***
	1.4 Examine the relationship between national and state responsibilities for education
	1.5 Identify the link between key national and state ***education policies***
2 Examine the education frameworks used in Victoria	2.1 Identify the ***education frameworks*** used in Victorian ***education settings***
	2.2 Investigate the learning areas and capabilities contained in the frameworks
	2.3 Source and examine resources to support the implementation of education frameworks
	2.4 Analyse the ways in which the education frameworks facilitate the development of student learning and achievement
	2.5 Analyse the ways in which the education frameworks address the diversity of learners

3	Investigate requirements to work as a teacher in Victoria	3.1 Identify ***education requirements*** to work as a teacher in different education sectors
		3.2 Investigate pathways to obtain teaching qualifications
		3.3 Identify the ***registration requirements*** for teachers
		3.4 Investigate the role and responsibility of the education regulatory body
		3.5 Identify the ***professional responsibilities*** of a teacher
		3.6 Examine the demand for teachers in different education sectors
		3.7 Investigate current opportunities to work as a teacher.
4	Investigate an education sector	4.1 Select an education sector
		4.2 Develop a ***profile*** of the sector
		4.3 Examine study pathways into the sector
		4.4 Examine and compare areas of specialisation for study within the sector
		4.5 Identify ***current issues*** within the sector

Required Knowledge and Skills

This describes the essential skills and knowledge and their level required for this unit.

Required Knowledge:

- sources of information about different aspects of the education system
- registration requirements and processes for teachers
- factors affecting teacher demand

Required Skills:

- literacy skills to:
  - source, interpret and analyse information about the education sector
  - summarise ideas and information
  - collect and organise information
- problem solving skills to establish and analyse the relationship between education frameworks and student learning
- technology skills to
  - access online information about the education sector
  - manage online information
- self-management skills to explore own study pathways into teaching
- planning and organising skills to collect and use information to investigate the education system

Range Statement

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold / italicised wording in the Performance Criteria is detailed below.

Sectors of the Victorian education system may include:

- early childhood
- primary
- secondary
- special education
- government
- catholic
- independent
- VET

Key authorities relevant to the Victorian education system may include:	• Victorian Department of Education and Training • Victorian Curriculum and Assessment Authority (VCAA) • Victorian Institute of Teaching (VIT) • Australian Institute for Teaching and School Leadership (AITSL) • Victorian Registrations and Qualifications Authority (VRQA) • Australian Curriculum, Assessment and Reporting Authority (ACARA) • Catholic Education Office • Independent schools Victoria
Education policies may include***:***	• Literacy and Numeracy test for initial teacher education (LANTITE) • increasing literacy and numeracy levels of students • increasing uptake of science, technology, engineering and maths skills (STEM) • improving the quality of teaching • addressing the needs of disadvantaged students • inclusion and respectful relationships • National Aboriginal and Torres Strait Islander Education Strategy • Closing the Gap • Cultural Diversity • Special Needs
Education frameworks may include:	• Victorian Curriculum F-10 • Victorian Certificate of Education • Victorian Certificate of Applied Learning • Victorian Early Years Learning and Development Framework • Marrung Aboriginal Education Plan 2016-2026 • Framework for Improving Student Outcomes • Cultural Diversity Plan
Education settings may include:	• early childhood • primary • secondary • community based and alternative settings

Education requirements may include:

- four-year undergraduate teacher education degree
- an academic degree in a non-education area and an approved postgraduate teacher education qualification
- demonstration of personal attributes including:
  - strong interpersonal / communication skills
  - willingness to learn
  - resilience
  - self-efficacy
  - conscientiousness
  - organisational and planning skills
  - motivation to teach

Registration requirements include:

- registration with VIT
- successful completion of a literacy and numeracy test (LANTITE)
- Working with Children Check (WWCC)

Professional responsibilities include:

- duty of care:
  - treating students equitably
  - meet the individual learning needs of students
  - child safe standards
- undertaking appropriate ongoing professional development
- complying with codes of conduct and ethics
- implementing education priorities and policies
- meeting the Australian Professional Standards for Teachers at the Graduate level

Profile may include:

- role of key personnel in the education environment
- numbers of students in each sector
- coverage
- employment trends
- discipline specific shortages
- sector specific programs
- sector specific requirements
- industrial working requirements

Current issues may include:

- NAPLAN testing
- measuring teacher effectiveness
- teacher reform initiatives
- supporting disadvantaged students
- issues confronting hard to staff schools
- sector specific issues

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the Elements, Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment section in Section B of the Accreditation Submission.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessment must confirm the ability to:

- access and investigate information about the Victorian education system including:
  - the relationship between key Victorian and National education policies and frameworks
  - sectors within the education system
  - education frameworks and their links to learning
  - pathways into teaching
  - teacher responsibilities and requirements
- use information to investigate own potential pathways into a specific education sector

Context of and specific resources for assessment

Assessment must ensure access to:

- online resources
- sources of information on the education system

Method(s) of assessment

The following suggested assessment methods are suitable for this unit:

- verbal questioning about key Victorian education policies or education frameworks and their relationship with key National education policies and frameworks
- presentation on findings of investigations such as teacher responsibilities
- a research report on an education sector
- career action plan of pathways into teaching

Unit Code	**VU22273**
Unit Title	**Examine approaches to learning**
Unit Descriptor	This unit describes the skills and knowledge to examine a range of learning theories, their relationship to learning approaches and implications for teaching. It also includes examination of and reflection on approaches that enhanced own learning experiences.
Employability Skills	This unit contains employability skills.
Application of the Unit	This unit applies to those who wish to develop their knowledge of the theories of learning to support entry into and participation in an undergraduate teacher education course.

Element	**Performance Criteria**
Elements describe the essential outcomes of a unit of competency. Elements describe actions or outcomes that are demonstrable and assessable.	Performance criteria describe the required performance needed to demonstrate achievement of the element – they identify the standard for the element. Where bold/italicised text is used, further information or explanation is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.
1 Examine key theories of learning	1.1 Identify the ***key theories of learning***
	1.2 Examine the relationship between key learning theories and how learning occurs
	1.3 Examine the implications of the key learning theories tor teaching
	1.4 Analyse the suitability of key learning theories for specific learning areas and learners.
2. Examine a learning theory and its application	2.1 Select a learning theory
	2.2 Examine how the theory views the development of knowledge and learning
	2.3 Identify how the theory is applied in specific subject areas and/or to specific groups of learners
	2.4 Identify ***key approaches to teaching and learning*** which are linked to the learning theory
	2.5 Identify ***learning activities*** which reflect the learning theory.
3. Examine the impact of key learning theories on	3.1 Identify own ***significant learning experiences***
	3.2 Identify approaches which enhanced own learning experiences

own educational experiences	3.3 Analyse ***factors which influenced the outcomes of the learning experiences***
	3.4 Examine ways in which the approaches used in own learning experiences could have been improved
	3.5 Evaluate how own learning experiences can inform own future teaching approaches

Required Knowledge and Skills

This describes the essential skills and knowledge and their level required for this unit.

Required Knowledge:

- relationship between a minimum of two learning theories and practice
- purpose and principles that inform a minimum of two learning theories
- factors that impact on learning
- different views of how learning occurs

Required Skills:

- literacy skills to:
  - source, interpret and analyse information about learning theories and their application
  - summarise ideas and information
  - collect and organise information
  - compare different views of learning
- problem solving skills to identify and analyse the link between learning theories and teaching approaches
- technology skills to access information about learning theories
- learning skills to reflect on own learning experiences and assess potential influence on own teaching practice

Range Statement

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold / italicised wording in the Performance Criteria is detailed below.

Key theories of learning may include:	• behaviourism • cognitivism • social learning theory • social constructivism

Key approaches to teaching and learning may include:	• a teacher focused approach with the intention of transmitting information to students • a teacher/student interaction approach with the intention that students acquire the concepts of a discipline • a student focused approach aimed at students developing their perceptions • a student focused strategy aimed at students changing their perceptions • scaffolding • teacher centred • student centred • collaborative learning and group work • modelling • experiential approach • self reflection
Learning activities may include	• inquiry oriented projects • problem solving tasks • critical inquiry • reflection and evaluation
Significant learning experiences may include:	• positive learning experiences • negative learning experiences • greatest impact on developing understanding • learning resulting in personal transformation

Factors which influence the outcomes of learning experiences may include:

- teaching or instructional approaches:
  - teaching/learning strategies used
  - curriculum
- socio-economic:
  - family background and education
- cultural views of the value of education
- psychological:
  - motivation
  - attitude
  - interest
- health:
  - physical health
  - mental health
- teacher quality and training
- attendance

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the Elements, Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment section in Section B of the Accreditation Submission.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessment must confirm the ability to:

- examine key learning theories to establish how they inform teaching practice
- examine a key learning theory and how it is applied
- examine the link between learning theories, own learning experiences and potential impact on own future teaching practice

Context of and specific resources for assessment

Assessment must ensure access to:

- information about learning theories

Method(s) of assessment

The following suggested assessment methods are suitable for this unit:

- oral and/or written questioning to assess knowledge of key learning theories and their application to teaching
- a written or oral presentation on the alignment between learning theories on own learning experiences
- a report on a learning theory and its application to learning in a specific context

Unit Code	**VU22274**
Unit Title	**Investigate contemporary issues in teaching**
Unit Descriptor	This unit describes the skills and knowledge to investigate the teaching environment and contemporary issues that impact on teaching and teachers.
Employability Skills	This unit contains employability skills.
Application of the Unit	This unit applies to learners who wish to develop their knowledge of the education environment in preparation for entry into and participation in an undergraduate teacher education course.

Element	**Performance Criteria**
Elements describe the essential outcomes of a unit of competency. Elements describe actions or outcomes that are demonstrable and assessable.	Performance criteria describe the required performance needed to demonstrate achievement of the element – they identify the standard for the element. Where bold/italicised text is used, further information or explanation is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.
1 Examine external views of teaching and teachers	1.1 Examine ***own experiences*** of teachers and their teaching
	1.2 Examine prevailing ***community views of teaching and teachers***
	1.3 Examine ***community expectations of teaching and teachers***
	1.4 Examine media representations of teaching and teachers
	1.5 Determine the ways in which ***changing views*** of teaching and teachers impact on the profession
2 Investigate internal expectations of teaching and teachers	2.1 Examine the ***role of the educational leader*** in managing the ***education environment***
	2.2 Examine the roles of ***others*** in the environment
	2.3 Analyse the ways in which those in the environment work together to support common goals
	2.4 Examine the ***ethical expectations*** of teachers
	2.5 Examine potential ***challenges*** in the education environment
	2.6 Identify existing teacher ***supports***
	2.7 Develop ***strategies*** to address internal expectations and potential challenges in the environment

3 Examine student centred educational policy and practice	3.1 Identify major ***student centred educational policies***
	3.2 Identify ***key legislation, policies and frameworks*** that impact on inclusive education
	3.3 Examine the ***cultural influences*** that can impact on teaching practice
	3.4 Examine the potential impact of ***own views*** on teaching practice
4 Investigate the major social issues impacting education	4.1 Examine the impact of ***changing family demographics*** on teaching and teachers
	4.2 Examine the impact of parenting expectations on teaching and teachers
	4.3 Investigate the ***key effects of educational disadvantage***
	4.4 Identify the ***impacts of socio economic disadvantage*** on educational attainment
	4.5 Examine the impact of ***workforce trends*** on student transitions

Required Knowledge and Skills

This describes the essential skills and knowledge and their level required for this unit.

Required Knowledge:

- reliable sources of information on relevant legislation and educational policy
- changing family demographics
- common cultural stereotypes
- factors that contribute to socio economic disadvantage
- key effects of educational disadvantage
- workforce trends

Required Skills:

- literacy skills to read and interpret a range of information
- problem solving skills to:
  - analyse the reliability of information sources
  - critically examine changing views of teaching and teachers
  - analyse the internal expectations of teachers
  - analyse the impact of key legislation and policy on teaching and teachers
- self-management skills to:
  - develop strategies for dealing with situations likely to be encountered in the school environment
  - reflect on the way in which own views may influence teaching practice

Range Statement

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold / italicised wording in the Performance Criteria is detailed below.

Own experiences may include:

- positive personal learning experiences
- negative personal learning experiences

Community views of teaching and teachers may include:

- status of the profession
- perceptions of the work of teachers
- quality of teachers and teaching
- quality of government versus private school education

Community expectations of teaching and teachers may include:

- student supervision
- teachers as moral / social / ethical educators
- monitoring and reporting:
  - health and well-being
  - Child Safe Standards
- supporting student pathways
- supporting students with additional needs
- providing information and referral to wide range of community resources

Changing views may include:

- preparing students for the world of work
- preparing students for life
- developing critical thinking/innovation/ entrepreneurial skills/
- focussing on specific areas such as science, technology, engineering and maths skills (STEM)

Role of the educational leader may include:	• leadership:
	  - as a principal
	  - as an educational leader in an early childhood environment
	• managing:
	  - compliance with regulatory and legislative requirements
	  - teaching and non-teaching staff
	  - budgets
	  - resources
	  - discipline
	• reporting to:
	  - parents
	  - education department
	  - school community
	• governance advice
	• representing the school in the community

Education environment may include:	• early childhood • primary • secondary
Others may include:	• assistant principal • senior / lead teachers • education support staff • administrative staff
Ethical expectations may include:	• providing opportunities for all learners to learn • treating all students with courtesy • maintaining objectivity with learners • maintaining professionalism in relationships with learners inside and outside the school environment • maintaining professional relationships with colleagues and parents/carers • managing own ongoing learning

Challenges may include:

- managing workload
- managing expectations
- dealing with difficult / disruptive classroom behaviours
- supporting parents with concerns
- dealing with difficult staff room behaviours
- responding to feedback
- lack of support / induction / mentoring

Supports may include:

- peer support
- counselling services
- OHS / WHS mechanisms:
  - risk assessments
  - consultative processes

Strategies may include:

- seeking support from professional or personal networks
- seeking appropriate professional development opportunities
- reflecting on own performance / needs
- developing positive relationships
- promoting positive behaviour support in classrooms
- techniques to respond to behaviours associated with a range of disabilities

Student centred educational policies may include:

- student participation:
  - engagement
  - inclusion incorporating cultural and socio-economic diversity and disability
- student safety:
  - bullying
  - Child Safe Policy
  - parental permissions
- Disability Standards for Education

Key legislation, policies and frameworks may include:

- Victorian Education Training Reform Act 2006
- Occupational / Work Health and Safety
- Charter of Human Rights
- Equal Opportunity Act
- Racial Discrimination Act
- Disability Discrimination Act

Cultural influences may include:	• beliefs on the value of educational achievement • use of culturally sensitive language • cultural stereotypes
Own views may include:	• personal beliefs • cultural practices • attitudes
Changing family demographics may include:	• single parent families • same sex parent families • blended families • unaccompanied minors • children who live in residential settings/out of home care
Key effects of educational disadvantage may include:	• limitations to employment / further education • social disadvantage • increased potential for incarceration later in life
Impacts of socio economic disadvantage may include:	• inter-generational • widening gaps • post school achievements • rural / regional impacts • impacts on student performance • impact on immigrant / refugee / EAL students
Workforce trends may include*:*	• changing nature of the workforce • globalisation • technology • mobility

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the Elements, Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment section in Section B of the Accreditation Submission.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessment must confirm the ability to:

- examine internal and external expectations of teaching and teachers and the ways in which these can impact on a contemporary education environment
- develop strategies to meet internal expectations and manage own response to likely challenges in an education environment
- examine the impact of policy, legislative and social influences on teaching and teachers

Context of and specific resources for assessment

Assessment must ensure:

- Access to relevant sources of information

Method(s) of assessment

The following suggested assessment methods are suitable for this unit:

- oral and or written questioning to assess knowledge of the key policy, legislative and social influences on teaching and teachers
- oral presentation on own analysis of the impacts of a contemporary educational issue
- written analysis of the impact of external and internal expectations on teachers and the teaching profession and ways to manage own response to these expectations.

Unit Code	**VU22275**
Unit Title	**Investigate the digital education environment**
Unit Descriptor	This unit describes the skills and knowledge to investigate the ways in which digital learning can support educational outcomes.
Employability Skills	This unit contains employability skills.
Application of the Unit	This unit applies to learners who wish to develop their knowledge of the education environment in preparation for entry into and participation in an undergraduate teacher education course.

Element	**Performance Criteria**
Elements describe the essential outcomes of a unit of competency. Elements describe actions or outcomes that are demonstrable and assessable.	Performance criteria describe the required performance needed to demonstrate achievement of the element – they identify the standard for the element. Where bold/italicised text is used, further information or explanation is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.
1 Investigate the digital education environment	1.1 Identify any ***policies*** and ***programs*** designed to support technology rich learning environments
	1.2 Investigate the definitions of ***digital learning*** and ***digital technologies***
	1.3 Investigate the ***use of technology*** in educational environments to support teachers
	1.4 Review own level of digital learning knowledge and skill
	1.5 Identify ***opportunities*** to improve own level of digital learning knowledge and skill
	1.6 Examine ***common issues*** in digital learning
2 Investigate the technological environment	2.1 Identify ***technology*** currently used in education
	2.2 Examine the ***strengths and weaknesses*** of a range of commonly used educational technologies
	2.3 Investigate the features, uses, benefits and limitations of one piece of educational technology
3 Investigate the pedagogical implications of digital learning	3.1 Examine the place of digital pedagogy in education
	3.2 Investigate the relationship between teacher and student in a digital education environment

3.3 Analyse the relationship between technologies and pedagogies

3.4 Investigate the benefits and limitations of online assessment and feedback

Required Knowledge and Skills

This describes the essential skills and knowledge and their level required for this unit.

Required Knowledge:

- reliable sources of relevant information
- key digital pedagogies

Required Skills:

- digital literacy skills to navigate and interpret information
- self-management skills to:
  - reflect on own level of digital learning knowledge and skill
  - identify opportunities to improve own digital learning knowledge and skill
- problem solving skills to:
  - examine the strengths and weaknesses of a range of commonly used educational technologies
  - examine common issues encountered in digital learning
  - analyse the risks to student outcomes of using inappropriate pedagogy / technology combinations

Range Statement

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold / italicised wording in the Performance Criteria is detailed below.

Policies may include:
- Digital Education Revolution
- responsible use of digital technologies
- cyber safety

Programs may include:
- teacher capability building
- infrastructure /resource development
- laptop / iPad program
- Bring Your Own Device (BYOD)

Digital learning may include:
- blended and virtual learning
- game-based learning
- accessing digital content
- virtual collaboration

Digital technologies may include:	• electronic:
	  - tools
	  - system
	  - devices
	  - resources

Use of technology may include:	• assessments • feedback • professional development for teachers • timetabling • scheduling extras • reporting to parents • reporting to the education system • newsletters to parents • events
Opportunities may include:	• formal training / short course • informal learning • on line learning opportunities
Common issues may include:	• rapid changes in technology • the application of inappropriate teaching approaches • ability of all students to engage with technology • level of teacher skill/capacity to use technologies
Technology may include:	• Learning Management Systems (LMS) • gaming • video conferencing • websites/wikis • social media
Strengths and weaknesses may include:	• availability of resources • adaptability • inclusiveness for students with a disability • cultural sensitivity of technologies utilised • cost of purchase, maintenance and upgrades for students and their families and the school community/education system

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the Elements, Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment section in Section B of the Accreditation Submission.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessment must confirm the ability to:

- examine the digital education environment and identify opportunities to improve own digital learning knowledge and skill
- examine the use of digital pedagogies and technologies to support student learning

Context of and specific resources for assessment

Assessment must ensure:

- access to sources of information on digital learning

Method(s) of assessment

The following suggested assessment methods are suitable for this unit:

- oral and or written questioning to assess knowledge of the digital education environment
- written analysis of the relationship between the digital learning environment, digital technologies and digital pedagogies
- written analysis of the features, uses, benefits and limitations of one piece of educational technology

Unit Code	**VU21337**
Unit Title	**Work with and interpret numerical information in familiar and routine texts**
Unit Descriptor	This unit describes the skills and knowledge to enable learners to develop numeracy skills related to locating and recognising a range of whole numbers, decimals, routine fractions and percentages which are part of numerical information partly embedded in routine texts. Learners can then use those numbers to perform simple multi-step calculations which are part of the learners' familiar and routine situations in their personal, public, work or education and training lives. Learners will communicate these mathematical ideas using a combination of written and spoken responses. The required outcomes described in this unit relate directly to the *Australian Core Skills Framework (ACSF)*, (© Commonwealth of Australia, 2012). They contribute to the achievement of ACSF indicators of competence Level Three Numeracy: 3.9, 3.10 & 3.11.
Employability Skills	This unit contains employability skills.
Application of the Unit	This unit applies to those who wish to improve their educational, vocational or community participation options by developing a range of numeracy and mathematics skills. Numeracy is seen as making meaning of mathematics. Mathematics is a tool to be used efficiently and critically and is seen as the knowledge and skills to be applied and used for a range of purposes and in a variety of contexts. The goal is therefore to assist learners to develop mathematical concepts and relationships in ways that are personally meaningful. It is strongly recommended that this unit is integrated with the delivery and assessment of other numeracy and mathematics units. It is also recommended that application is also integrated with other units from across the CGEA. The links between the different units encourage co-delivery and assessment, and replicates real life situations where tasks and activities integrate a wide range of skills including literacy and numeracy.

Element	**Performance Criteria**
Elements describe the essential outcomes of a unit of competency. Elements describe actions or outcomes that are demonstrable and assessable.	Performance criteria describe the required performance needed to demonstrate achievement of the element – they identify the standard for the element. Where bold/italicised text is used, further information or explanation is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.
1 Interpret numerical information partly embedded in familiar and routine texts	1.1 Interpret and use orally and in writing ***numerical information*** including whole numbers, decimals and ***routine, common fractions and percentages*** which are ***partly embedded*** in ***familiar and routine texts***

	1.2 Use ***place value concepts for whole numbers and decimals*** to interpret and compare numbers partly embedded in text
	1.3 Use the meaning of routine common fraction and percentages to interpret and compare numbers partly embedded in text
2 Perform routine, multi-step calculations with numbers partly embedded in familiar and routine texts	2.1 Extract numerical information including whole numbers, decimals and routine fractions and percentages partly embedded in text, and determine an appropriate ***mathematical process or calculation*** to solve the given mathematical task
	2.2 Make an ***initial estimate*** when undertaking calculations
	2.3 Perform ***routine multi step calculations*** with numbers in familiar situations including making an initial estimate and where appropriate converting between ***equivalent common fraction, decimal and percentage forms***
	2.4 Check the ***reasonableness of results*** against initial estimate, context of problem and personal knowledge/experience

Required Knowledge and Skills

This describes the essential skills and knowledge and their level required for this unit.

Required Knowledge:

- signs / prints/ symbols represent meaning in texts and materials
- place value to read, write and interpret decimals and large whole numbers
- decimals, common fractions and percentages and their common equivalent forms
- informal and formal language of number to compare and interpret decimals, common fractions and percentages
- techniques used to make initial estimations and check results of calculations in relation to the context

Required Skills:

- communication and literacy skills to read relevant, familiar texts and identify decimals, common fractions and percentages when partly embedded in texts

Range Statement

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold / italicised wording in the Performance Criteria is detailed below.

Numerical information may include:	• numbers into the millions • fractions including halves, thirds, quarters, fifths, tenths, hundredths • decimals to 3 decimal places • common percentages such as 20%, 15%, 40%, 75%, 100%,
Routine, common fractions and percentages may include:	• common fractions including halves, thirds, quarters, fifths, tenths, hundredths • common percentages such as 20%, 15%, 40%, 75%, 100%,
Partly embedded means:	• the maths involved is found within a familiar and routine text where some scanning and reading is required to be able to interpret, locate and extract the necessary mathematics
Familiar and routine texts may include:	• newspaper or magazine articles • workplace documents such as Standard Operating Procedures • online information • public information documents • advertising leaflets / catalogues,
Place value concepts for whole numbers and decimals refers to:	• the relationship between numeral position and numerical value • the decimal point is clearly identified as a separator between whole number and part of a whole number such as a dollar and part of a dollar • familiarity with a range of numbers from thousandths to millions • making a transition slowly from interpreting, for example, $0.25 as 25 cents to 25 hundredths to a quarter of a dollar
Mathematical process or calculation may include:	• +,–, x, ÷, a conversion, ordering values, simple fractions of whole numbers, simple '% of' such as 50%, 25%, 10%, 20% • fractions, decimals, percentages are converted to equivalent values such as 25% = ¼ = 0.25, in situations where fractions and percentages are quoted in the same problem making a comparison difficult; or where one form of a fraction may be more difficult to work with; or where a measurement is quoted in different ways, such as 2¼ m and 2.250 m
Initial estimate refers to:	• using number facts and rounding to make an initial estimate of an expected result/answer - if it is not evident in the

	context, the accuracy required needs to be discussed and clearly established
Routine multi step calculations include:	• familiar/routine calculations that use more than one operation chosen from +, – , × or ÷ which can be the same operation, and/or include a percentage or fraction calculation as one of the steps • calculations should be done using familiar 'in head' methods where appropriate, such as × or ÷ by 2, 10, 100 etc. and also by pen and paper and by using a calculator or other technological processes and tools • division by decimal values and long division may be worked out on a calculator • when working with money, rounding off should be to the nearest 5 cent or 1 cent to reflect practical reality
Equivalent common fraction, decimal and percentage forms may include:	• converting between common fraction, decimal and percentage forms for simplification of calculations, such as 0.25 or 25% to ¼, or halving instead of using 50%, or dividing by 10 instead of working out 10%
Reasonableness of results refers to:	• where appropriate, making a comparison of final result to initial estimate is made to provide a reality check of the value • referral to context to decide if the result is possible and relevant or needs revising or modification • prior knowledge may lead to comparison to previous experiences and therefore decide whether result is appropriate or not

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the Elements, Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment section in Section B of the Accreditation Submission.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessment must confirm the ability to: • read, extract and interpret numerical information partly embedded in a range of familiar and routine texts • use the concept of place value and the associated language of numbers to interpret, compare and talk about whole numbers into the thousands and decimals to thousandths • identify and compare routine fractions and percentages including using equivalent common fraction, decimal and percentage forms • undertake routine, multi-step calculations with numbers and make initial estimates of results in familiar situations and confirm the results

Context of and specific resources for assessment

Assessment must ensure:

- access to concrete, relevant contexts and materials where the maths content is partly embedded but accessible

At this level, the learner can:

- work independently and use own familiar support resources
- use a combination of both informal and formal oral and written mathematical language, symbols, abbreviations and diagrams
- use a blend of “in the head” methods, pen and paper methods and calculators or technological processes and tools

Method(s) of assessment

The following assessment methods are suitable for this unit:

- observation of the learner identifying and comparing routine fractions and percentages, including using equivalent common fraction, decimal and percentage forms, in situations that are familiar situations
- portfolio of routine, multi step calculations which include initial estimates
- oral and written questioning to assess the ability to use the concept of place value and the language of numbers to interpret, compare and talk about whole numbers into the thousands and decimals to the thousandths

Unit Code	**VU21338**
Unit Title	**Work with and interpret statistical information in familiar and routine texts**
Unit Descriptor	This unit describes the skills and knowledge to enable learners to develop numeracy skills related to interpreting and comprehending familiar chance statements and working with, constructing and interpreting statistical tables and graphs related to learners' familiar and routine situations in their personal, public, work or education and training lives. Learners will communicate these mathematical ideas using a combination of written and spoken responses. The required outcomes described in this unit relate directly to the *Australian Core Skills Framework (ACSF)*, (© Commonwealth of Australia, 2012). They contribute to the achievement of ACSF indicators of competence at Level Three Numeracy: 3.9, 3.10 & 3.11.
Employability Skills	This unit contains employability skills.
Application of the Unit	This unit applies to those who wish to improve their educational, vocational or community participation options by developing a range of numeracy and mathematics skills. Numeracy is seen as making meaning of mathematics. Mathematics is a tool to be used efficiently and critically and is seen as the knowledge and skills to be applied and used for a range of purposes and in a variety of contexts. The goal is therefore to assist learners to develop mathematical concepts and relationships in ways that are personally meaningful. It is strongly recommended that this unit is integrated with the delivery and assessment of other numeracy and mathematics units. It is also recommended that application is also integrated with other units from across the CGEA. The links between the different units encourage co-delivery and assessment, and replicates real life situations where tasks and activities integrate a wide range of skills including literacy and numeracy.

Element	**Performance Criteria**
Elements describe the essential outcomes of a unit of competency. Elements describe actions or outcomes that are demonstrable and assessable.	Performance criteria describe the required performance needed to demonstrate achievement of the element – they identify the standard for the element. Where bold/italicised text is used, further information or explanation is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.
1 Collect familiar data and construct tables and familiar and routine graphs	1.1 ***Collect and record data*** in tables manually or in spreadsheets 1.2 Represent data in ***graphical form*** using the ***key features and conventions of graphs*** manually or using appropriate software

	1.3 Check the appropriateness and accuracy of the ***statistical representation*** against the context of the problem
2 Interpret statistical information in familiar and routine tables and graphs	2.1 ***Interpret and describe*** the meaning of data in tables, graphs or charts and accompanying ***text***, using a range of ***descriptive informal and formal language***
	2.2 Check the ***reasonableness of any statistical interpretation*** against context of the problem and personal knowledge/experience

Required Knowledge and Skills

This describes the essential skills and knowledge and their level required for this unit.

Required Knowledge:

- signs / prints/ symbols represent meaning in texts such as in newspapers, online, on utility bills and in notices and documents
- key features and conventions of tables and graphs
- informal and formal language of number and data to read, write and communicate about statistical results and information

Required Skills:

- communication and literacy skills to read relevant, familiar texts that incorporate tables and graphs
- problem solving skills to interpret tables and graphs to identify appropriate numerical and statistical information
- planning and organising skills to collect data and create tables and graphs

Range Statement

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold / italicised wording in the Performance Criteria is detailed below.

Collect and record data in tables refers to:	• data which can be whole numbers, percentages, decimals and simple common fractions found in statistical information • data collected can be existing data or new data developed with assistance • deciding the categories/headings required to organise the data with assistance • where data needs grouping assistance may be given • data can be entered into hard copy tables or into a word processing package or spreadsheet

Graphical form may include:	• pictographs • column/bar graphs • line graphs • pie charts which should be produced using graphing tools in software such as Excel or Word or with a provided a pie chart template
Key features and conventions of graphs refers to:	• values/variables which are correctly identified, plotted and labelled, sensible scales and axes are used • the scale should be worked out with assistance if requested and be appropriate in terms of size and readability • scales created should count in 1's, 2's, 5's,10's or 100's and can be expressed as percentages
Statistical representation refers to:	• deciding if the constructed table(s) and graph(s) represent the data accurately and are appropriate for the data and the context such as are the variables on the axes correctly represent the data, are the scales appropriate, is it the right type of graph for the data • prior knowledge may lead to comparison to previous experiences and therefore decide whether the result is appropriate or not
Text may include:	• newspapers / magazine journal articles • workplace documents • relevant online texts or information • public information documents • advertising leaflets / catalogues • timetables
Descriptive informal and formal language includes:	• maximum / minimum • same as • increasing / decreasing • constant / changing

Reasonableness of any statistical interpretation refers to:	• checking against the context to decide if the results and interpretations are possible and relevant • using prior knowledge to compare to previous experiences and therefore deciding whether result is appropriate • thinking about the results in terms of personal implications, social consequences, and how the statistics were used and applied

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the Elements, Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment section in Section B of the Accreditation Submission.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessment must confirm the ability to: • collect and organise data into tables • use data to construct a range of graphs using appropriate scales and axes • use key features and conventions of tables and graphs to identify and interpret familiar and routine statistical information • use the informal and formal language of numbers, graphs and tables to interpret and convey familiar statistical information and results
Context of and specific resources for assessment	Assessment must ensure: • access to concrete, relevant contexts and materials where the maths content is partly embedded but accessible • access to software spreadsheet applications and computer hardware where appropriate At this level, the learner can: • work independently and use own familiar support resources • use a combination of both informal and formal oral and written mathematical language, symbols, abbreviations and diagrams
Method(s) of assessment	The following assessment methods are suitable for this unit: • portfolio of tables and graphs completed by the learner • oral and written questioning to assess the ability to communicate statistical results and information

Unit Code	**VU21356**
Unit Title	**Engage with a range of complex texts for learning purposes**
Unit Descriptor	This unit describes the skills and knowledge to interpret a range of structurally intricate paper based and digital texts which are relevant to learning purposes and which may include some specialisation and non routine contexts The required outcomes described in this unit relate directly to the *Australian Core Skills Framework (ACSF)*, (© Commonwealth of Australia, 2012). They contribute to the achievement of ACSF indicators of competence at Level Four (Reading): 4.03, 4.04.
Employability Skills	This unit contains employability skills.
Application of the Unit	This unit applies to those seeking to improve their further educational participation options and who need to develop a range of reading skills both in a paper based and digital context. These skills provide the foundation for future activities to extend reading skills to enable interpreting complex texts with unfamiliar features. Where application is as part of the Certificate II in General Education for Adults, it is recommended that application is integrated with the delivery and assessment of Core Skills writing unit: *VU21360 Create a range of complex texts for learning purposes*. The link between reading and writing across the different domains also encourages co-delivery and assessment of additional units, such as *VU21355 Engage with a range of complex texts for personal purposes* and *VU21359 Create a range of complex texts for personal purposes*.

Element	**Performance Criteria**
Elements describe the essential outcomes of a unit of competency. Elements describe actions or outcomes that are demonstrable and assessable.	Performance criteria describe the required performance needed to demonstrate achievement of the element – they identify the standard for the element. Where bold/italicised text is used, further information or explanation is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.
1 Locate structurally intricate print based and digital texts relevant to a range of learning purposes	1.1 Examine a range of ***structurally intricate texts***
	1.2 Define ***features*** of texts
	1.3 Confirm ***purpose*** of the texts
	1.4 Select texts relevant to own learning purposes
2 Analyse content in a range of complex print	2.1 Use a range of ***strategies to interpret the text***
	2.2 Summarise main ideas in texts

	based and digital texts for learning purposes	2.3 Evaluate supporting materials in texts
3	Critically evaluate a range of complex print based and digital texts relevant to own learning purposes	3.1 Identify means used by the author to achieve the purpose of the texts 3.2 Apply a range of ***strategies to critically analyse texts*** 3.3 Assess the relevance of the texts to own purpose

Required Knowledge and Skills

This describes the essential skills and knowledge and their level required for this unit.

Required Knowledge:

- knowledge of a range of vocabulary related to learning including some specialised vocabulary to support comprehension
- knowledge of techniques used by writers to convey meaning and achieve purpose
- understanding that a text reflects an author's culture, experiences and value system
- understanding that paper based and digital information may be represented differently

Required Skills:

- problem solving skills to:
  - select and apply reading strategies to interpret and analyse texts
  - apply critical analysis skills to interpret and compare texts
  - assess relevance of texts to own purposes and needs
  - assess the validity of online information
- oral communication skills to discuss features and content of texts to establish relevance and effectiveness
- technology skills to access and navigate screen based digital text to locate information of some complexity

Range Statement

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold / italicised wording in the Performance Criteria is detailed below.

Structurally intricate texts may include:	• complex texts which include embedded information, specialised vocabulary and abstraction and symbolism
	• digital, printed, handwritten and visual texts:
	  − instructional material such as text books, research material on the internet, weblogs
	  − classroom based learning materials notes taken from whiteboard, notes taken from a variety of sources
	  − procedural or technical manuals / learner guides, work books
	  − course information such as VTAC guide

- journal articles, reports, including technical information
- instructions on how to complete a task or project
- informal and formal emails, online postings or hand written messages about matters related to learning for example, information about an assignment from a fellow class member or the teacher
- individual learning plans, portfolios, diary entries related to study plans, task lists
- diagrams with supporting information related to a specific area of study

Features of texts include:

- text structures which use a variety of sentence structures:
  - instructional texts with headings and sub-headings to organise the text; format that typically includes a statement of learning goals, materials needed or other requirements, sequential steps required to achieve goals; and icons to provide guidance to the learner as to what is required
  - informative texts with impersonal tone, headings, author's views expressed as facts, might include abstract nouns that condense ideas, processes and descriptions, and might follow a standard format such as general statement, factual description, conclusion
  - persuasive texts with emotive and persuasive language, including facts and opinions, author's bias may be explicit or implicit, may include supporting materials, may include opposing views on a subject and might follow a standard format such as statement of opinion, argument, summing up or recommendation
  - narrative texts with a chronological sequence of events, use of descriptive language, variations in author's voice
  - tables, graphs containing formatted data with explicit navigation features such as headings, table of contents, site map/ menus, numbered contents, dot points
- sentences:
  - complex syntactic structures including:
  - nominalisation
  - modality
  - linking devices to demonstrate conceptual connections and/or causal relationships
- words / phrases/ abbreviations:
  - vocabulary associated with personally relevant education activities
  - technical terms linked to learning goals / subject areas
  - abbreviations associated with further education such as TAFE, VET, ,VCE, HE,
- visual information
  - information and activities supported visually for example industry toolboxes
  - posters of careers information

- documentaries
- technical procedures such as a science experiment

Purposes may include:

- providing knowledge such as scientific, environmental, historical
- providing information for example career pathways, further education pathways
- providing skills development for example, scientific methods and techniques

Strategies to interpret the text may include:

- meaning-making strategies:
  - relating separate pieces of information within a text, rather than treating them as separate units of information
  - using knowledge of principal conventions of texts to assist with constructing meaning from a range of text types
  - recognising that language relates to social contexts and when social relations change, language may also change
  - employing a variety of strategies when interpreting text such as self-correction, re-reading, reading on, varying speed, reading aloud, posing questions, checking for accuracy of information by consulting other texts/people
  - recognising how supporting material is used effectively
  - distinguishing fact from opinion
  - noting cues such as particular words which indicate a new or important point is about to be made
  - making notes from written texts of personal relevance
  - comparing information from different sources
- de-coding strategies:
  - using a range of word identification strategies, including: visual and phonic patterns, word derivations and meanings
  - recognising ways in which punctuation conveys a range of emotions or intentions

Means used by the author to achieve the purpose of the text may include:

- choice of genre and text structure
- choice of language to create subtleties or precise meaning
- use of punctuation to convey a range of emotions or intentions
- logically organised separate pieces of information arranged within the text

Strategies to critically analyse text may include:

- analysis to identify :
  - misleading information
  - underlying values
  - subtle nuances
  - evidence to support judgements/conclusions

- clarifying the purpose of the writer including stated purpose and inferred purpose
- brainstorming activities to discuss features of the text such as ways in which the text reflects the author's culture, experiences and value system
- identifying key words and phrases critical to gaining meaning from the text
- comparing similar texts of personal relevance in terms of language used or text structure
- discussion of writer's voice
- comparing ideas
- discussion about the effectiveness of writing.
  - whether it meets its purpose, including inferred purpose
  - whether it meets the needs of the audience
  - how it relates to own knowledge and experience

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the Elements, Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment section in Section B of the Accreditation Submission.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessment must confirm the ability to:

- locate, read, interpret and evaluate information in a minimum of 3 different complex, structurally intricate text types relevant to learning purposes, at least one of which must be digitally based

In order to ensure learners achieve meaningful outcomes at the qualification level an integrated approach to assessment should be used, refer to Section B 6.1 Assessment Strategy.

Where this unit is being co-assessed with units related to another domain, such as personal, the same texts may be relevant to both domains.

Context of and specific resources for assessment

Assessment must ensure access to:

- print and digital texts relevant to learning
- communication technology and software

At this level the learner:

- works independently across a range of contexts including some that are unfamiliar and/or unpredictable and include some specialisation
- initiates and uses support from a range of established sources

Method(s) of assessment

The following assessment methods are suitable for this unit:

- direct observation of the learner interpreting information in, and making meaning of complex paper based and digital texts
- oral or written questioning to assess knowledge of the techniques used by writers to achieve their purpose in text types relevant to learning purposes
- oral information from the learner assessing the effectiveness of the selected texts
- portfolios containing samples of responses to texts

Unit Code	**VU21360**
Unit Title	**Create a range of complex texts for learning purposes**
Unit Descriptor	This unit describes the skills and knowledge to enable the development of writing skills to create a broad range of complex paper based and digital texts which are relevant to the learning environment. At this level the learner works across a range of contexts including some that are unfamiliar and/or unpredictable and include some specialisation. The required outcomes described in this unit relate directly to the *Australian Core Skills Framework (ACSF)*, (© Commonwealth of Australia, 2012). They contribute to the achievement of ACSF indicators of competence at Level Four (Writing), 4.05, 4.06
Employability Skills	This unit contains employability skills.
Application of the Unit	This unit applies to those who wish to improve their literacy skills in the learning environment by developing a range of writing and communication skills associated with creating texts. The unit provides the learner with the skills and knowledge necessary to create a broad range of complex texts in the learning environment. It will develop the written communication skills to produce or complete a range of texts used in a formal learning environment. These skills will provide the foundation for future activities associated with producing complex texts for study purposes. Where application is as part of the *Certificate II in General Education for Adults,* it is recommended that application is integrated with the delivery and assessment of *VU21356 Engage with a range of complex texts for learning purposes*. The link between reading and writing across the different domains also encourages co-delivery and assessment of additional units such as *VU21359 Create a range of complex texts for personal purposes* and *VU21355 Engage with a range of complex texts for personal purposes*

Element	**Performance Criteria**
Elements describe the essential outcomes of a unit of competency. Elements describe actions or outcomes that are demonstrable and assessable.	Performance criteria describe the required performance needed to demonstrate achievement of the element – they identify the standard for the element. Where bold/italicised text is used, further information or explanation is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.
1 Research a range of complex digital and paper based texts of relevant to learning	1.1 Select a range of ***paper based and digital texts***
	1.2 Identify the ***purpose and audience*** for the selected texts
	1.3 Define the ***features*** of the texts

2 Prepare a range of complex digital and paper based texts for learning purposes	2.1 Organise the ***appropriate format***, language, ***support materials*** and equipment
	2.2 Research content required to create texts
	2.3 Draft the content to meet the requirements of the texts
3 Produce a range of complex digital and paper texts for learning purposes	3.1 Develop complex paper based and digital texts
	3.2 ***Review*** texts and check for accuracy
	3.3 Edit texts to enhance meaning and effectiveness in response to feedback
	3.4 Present texts according to ***specified requirements***

Required Knowledge and Skills

This describes the essential skills and knowledge and their level required for this unit.

Required Knowledge:

- a range of styles of writing and presenting information to a range of audiences
- knowledge of register to enable appropriate selection and application to context
- a broad vocabulary and a range of grammatical structures
- how to structure a range of texts

Required Skills:

- communication skills to relay complex relationships between ideas
- literacy skills to write texts which include a number of examples, opinions, facts, or arguments with supporting evidence
- organisational skills to gather and order information required to create texts
- problem solving skills to select and apply appropriate register according to context

Range Statement

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold / italicised wording in the Performance Criteria is detailed below.

Paper based and digital texts may include:

- texts of relative complexity including embedded information, specialised vocabulary and abstraction and symbolism
- electronic, printed and texts containing visual elements:
  - informal and formal email or hand written messages about familiar and immediate matters such as requesting information about an assignment from a fellow class member or the teacher
  - notes taken from the blackboard / whiteboard

- notes taken from verbal instructions
- summaries / essays / structured writing
- vocabulary lists / task lists / dictation
- individual learning plans / portfolios
- work books / journal
- digital stories
- reflective writing related to learning
- weblogs, text for a webpage
- collaborative text / report
- text to support verbal / visual presentation

Purpose and audience may include:

- private or public audiences:
  - self only for vocabulary lists, notes, task lists
  - class members for a report, summary of research, collaborative work
  - organisational for administration change of address details / enrolment
- personal study purposes or to complete a requirement:
  - collection of information to prepare for writing activities
  - recording and organising information for regular reference
  - organising time

Features may include:

- layout features and styles as appropriate for digital and paper based text
- standard templates
- use of appropriate language for audience and purpose
- text structure:
  - clearly structured text using a range of structural conventions
  - variation between public and private writing
  - features of narrative and expressive texts such as chronological sequencing of events; logically sequenced and cohesive prose; identification followed by description; orientation, complication, resolution in narrative texts; use of descriptive language
  - features informative texts such as transparent organisation with sequentially ordered dot points, numbered instructions, alphabetical, numerical listings, spacing, headings; general statement, factual description or logically sequenced explanation, conclusion
  - features of procedural texts such as instructions, statement of the goal, requirements and steps to achieve the goal
  - features of persuasive texts such as argument, statement of opinion, arguments and summing up; discursive: opening statement, arguments for and against, conclusion or recommendations
  - navigation features such as grids, arrows, dot points

  - information formatted into a table with a number of columns
  - features of transactional texts such as formal letter format: formal opening, statement of purposes, details, request, confirm, inform or clarify action, formal close
- sentences:
  - consistent use of structurally complex sentences
  - use of nominalisation
  - use of modal verbs and modification devices
  - use of abstract nouns to condense ideas, processes and descriptions and/or explanations
  - use of linking devices appropriate to text type
- vocabulary*:*
  - use of appropriate language for audience and purpose, e.g. descriptive language, techniques to convey feelings and ideas, figures of speech
  - use of vocabulary specific to topic
  - precise selection of vocabulary to convey shades of meaning
  - most frequently used words spelt with accuracy
  - regular use of standard punctuation
  - control over the use of generic grammatical forms such as temporal links such as “meanwhile” and abstract nouns of “migration”, and referential devices
  - awareness and appropriate / effective use of local varieties of non standard Australian English, slang, LOTE
- visuals:
  - photographs / drawings / sketches / illustrations
  - symbols
  - diagrams, graphs / maps

Appropriate format may include:

- handwritten / word processed / PowerPoint presentation
- online such as html / email / digital story
- report / essay / book review
- short answer questions
- reference list
- notes for a classroom presentation
- student evaluation / feedback
- size of words and visuals
- place of colour, symbols
- using features of punctuation, font and layout to support meaning and clarity such as semi-colons, brackets italics

Support materials may include:	• word processing program / electronic presentation software program • sample texts / templates • written material, information from the teacher, other students, library texts, online sources, newspaper articles

Review may include:	• support from the teacher, by peers, by another support person for:
	  − spelling and punctuation
	  − grammatical accuracy
	  − clarity of purpose / audience / clarity of message
	  − appropriateness of layout, register
	  − effectiveness of layout features

Specified requirements may include:	• presentation as part of portfolio • content of text • use of research • format/layout • range of texts

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the Elements, Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment section in Section B of the Accreditation Submission.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessment must confirm the ability to: • identify the purpose and audience for a broad range of complex learning related digital and paper based text types • create one complex digital and one paper based, learning related text, with each text reflecting a different text type • In order to ensure learners achieve meaningful outcomes at the qualification level an integrated approach to assessment should be used, refer to Section B 6.1 Assessment Strategy. Where this unit is being co-assessed with units related to another domain, such as personal, the same texts may apply to both domains.
Context of and specific resources for assessment	Assessment must ensure access to:

- real / authentic texts from the learning environment
- online facilities, communications technologies as appropriate

At this level the learner:

- works independently across a range of contexts including some that are unfamiliar and/or unpredictable and include some specialisation
- initiates and uses support from a range of established sources

Method(s) of assessment

The following assessment methods are suitable for this unit:

- portfolio of digital and paper based texts of different text types created by the learner which show evidence of drafting and review
- oral or written questioning to assess knowledge of a the purpose and audience for a range of texts

Unit Code	**VU21364**
Unit Title	**Investigate numerical and statistical information in a range of contexts**
Unit Descriptor	This unit describes the skills and knowledge to develop numeracy and mathematical skills involving investigating and interpreting numerical information embedded in a range of texts and creating, investigating and interpreting statistical data, tables and graphs related to their personal, public, work or education and training lives. At this level the learner works independently across a range of contexts including some that are unfamiliar and/or unpredictable and include some specialisation. The required outcomes described in this unit relate directly to the *Australian Core Skills Framework (ACSF)*, (© Commonwealth of Australia, 2008). They contribute directly to the achievement of ACSF indicators of competence at Level Four Numeracy: 4.09, 4.10, & 4.11.
Employability Skills	This unit contains employability skills.
Application of the Unit	This unit applies to those seeking to improve their educational, vocational or community participation options by developing a range of numeracy and mathematics skills. Numeracy is seen as making meaning of mathematics - mathematics is a tool to be used efficiently and critically and is seen as the knowledge and skills to be applied and used for a range of purposes and in a variety of contexts. The goal is therefore to assist learners to develop mathematical concepts and relationships in ways that are personally meaningful. It is strongly recommended that this unit is integrated with the delivery and assessment of other numeracy and mathematics units. It is also recommended that application is also integrated with other units from across the CGEA. The links between the different units encourage co-delivery and assessment, and replicates real life situations where tasks and activities integrate a wide range of skills including literacy and numeracy.

Element	**Performance Criteria**
Elements describe the essential outcomes of a unit of competency. Elements describe actions or outcomes that are demonstrable and assessable.	Performance criteria describe the required performance needed to demonstrate achievement of the element – they identify the standard for the element. Where bold/italicised text is used, further information or explanation is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.
	1.1 Identify and extract ***numbers and numerical information*** embedded within a range of ***texts***

1	Investigate and interpret numerical information in a range of texts	1.2 Use an appropriate ***mathematical procedure*** to undertake calculations when investigating the numbers and numerical information in the text
		1.3 Make an initial estimate of the result then perform an accurate ***numerical calculation***
		1.4 Use the ***descriptive language of numbers and numerical information***
		1.5 ***Interpret the results*** in terms of their reasonableness against initial estimates and in terms of any personal, social or work consequences.
2	Investigate and create statistical data, tables and graphs	2.1 ***Collect and represent data*** in tables and in ***graphical form***, using appropriate scales and axes
		2.2 Calculate ***measures of central tendency*** and ***simple measures of spread*** for sets of ungrouped data
		2.3 Use the ***descriptive language of graphs, tables and averages***
		2.4 Interpret the results of the investigation in terms of the meaning of the data and /or accompanying texts, tables and graphs and in terms of any personal, social or work consequences

Required Knowledge and Skills

This describes the essential skills and knowledge and their level required for this unit.

Required Knowledge:

- signs / prints/ symbols represent meaning in texts and materials
- decimals, fractions and percentages and their equivalent forms
- key features and conventions of tables and graphs
- techniques used to make initial estimations and check results of calculations in relation to the context
- measures of central tendency and simple measures of spread

Required Skills:

- communication and literacy skills to:
  - read relevant texts incorporating numerical and statistical information in tables and graphs
  - use both informal and formal language of number and data to investigate and interpret a range of numerical and statistical information
  - read, understand and interpret numerical information embedded in texts
- problem solving skills to ability to calculate with different types of numbers
- organisational skills to collect data and create tables and statistical graphs

Range Statement

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold / italicised wording in the Performance Criteria is detailed below.

Numbers and numerical information should include:

- whole numbers, fractions, decimals, percentages and ratios and their equivalent values in a form appropriate to the situation
- chance and probability values related to the likelihood of everyday chance events such as chance of rain, gambling
- rates including km/hr, \$/m, \$/m^3, one in ten
- ratios which should be related to mixing domestic and garden chemicals, recipes, work-related ratios
- relevant positive and negative numbers such as to Temperature
- numbers expressed as simple powers such as e.g. 2^3, 5^2 and which may include simple scientific notation such as 3.6×10^3
- common square roots and their meaning such as $\sqrt{4} = 2$

Texts may include:

- printed and digital texts:
  - website, newspaper, or magazine journal articles
  - workplace documents
  - financial information such as taxation returns
  - advertising leaflets / catalogues
  - timetables

Mathematical procedure includes:

- addition, subtraction, multiplication, division (+,–, ×, ÷), conversion between fractions, decimals and percentages then an operation, several conversions to allow comparison, ordering values
- using different methods, and choosing the most appropriate method for the question such as 5% done in the head using ½ of 10%, or using pen and paper, whereas complicated calculations such as 4.25% done only using a calculator
- conversion of fractions, decimals, percentages and ratios into their equivalent values in a form appropriate to the situation

Numerical calculation includes:	• +,–, ×, ÷ with whole numbers and decimals where division by decimal values and long division may be worked out on a calculator • +,–, ×, ÷ with standard fractions only e.g. 2/3, 1/5, 7/10, etc. and where multiplication and division with fractions is related to relevant applications e.g. multiplying fractions when increasing a recipe with fractions; calculating how far an estimated distance is based on a pace length of ¾ of a metre • percentages including *% of*, *% change* and *A as % of B*, • routine rate and ratio calculations such as 2:3=4 • knowledge and use of the order of arithmetic operations • calculations can be undertaken flexibly using a blend of relevant "in the head" methods, and formal pen and paper and calculator procedures and software programs where appropriate
Descriptive language of numbers and numerical information includes:	• read and write decimal numbers such as point two four five, 0.245, two and five thousandths, 2.005 • common words, phrases and symbols for mathematical procedures such as percentages, rates, and arithmetical operations • symbols and words for comparison such as >, <, = ,≥, ≤
Interpret the results refers to:	• a comparison of final result to initial estimate or referral to context to decide if the result is possible, relevant • knowledge may lead to comparison to previous experience and therefore decide whether result is appropriate
Collect and represent data refers to:	• data which can be existing or new collected via a survey/questionnaire • data which may be whole numbers, percentages, decimals and fractions • where data needs grouping assistance may be given • data can be entered into hard copy tables or into a word processing package or spreadsheet
Graphical form may include:	• pie charts, bar graphs, line graphs, pictograms typically found in newspapers, on household bills, information leaflets • scales created should be appropriate to the data collected or being investigated • scatter diagrams, box and whisker plots

Measures of central tendency refers to:	• mean, median and mode calculated from survey results, wages, production figures, sports information, sample packet contents • the use or misuse of the term average in relation to this should be discussed
Simple measures of spread may include:	• range • interquartile range
Descriptive language of graphs, tables and averages includes:	• common words, phrases and symbols for mathematical procedures such as percentages, rates, and arithmetical operations • symbols and words for comparison such as >, <, = ,≥, ≤ • descriptive language of graphs, tables and averages such as maximum, minimum, increasing, decreasing, constant, slope, fluctuating, average, above/below average, range • a range of informal and formal oral and written mathematical language, symbols, abbreviations and diagrams

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the Elements, Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment section in Section B of the Accreditation Submission.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessment must confirm the ability to: • read and extract numerical information embedded in a range of texts • undertake a range of mathematical calculations with numbers, make initial estimates of results and interpret and convey the results using both informal and formal language of numbers, graphs, tables and statistical information • collect and organise data into tables and to construct graphs using appropriate scales and axes • use key features and conventions of tables and graphs and of measures of central tendency and simple measures of spread to investigate and interpret familiar and routine statistical information
Context of and specific resources for assessment	Assessment must ensure: • access to real/authentic or simulated tasks, materials and texts in appropriate and relevant contexts At this level the learner can:

- flexibly use a blend of personal “in the head” methods, and formal pen and paper and calculator procedures (and software programs where appropriate) to solve problems
- work independently and initiate and use support from a range of established resources
- use a range of informal and formal oral and written mathematical language, symbols, abbreviations and diagrams

Method(s) of assessment

The following assessment methods are suitable for this unit:

- portfolio of work completed by the learner demonstrating the ability to investigate and interpret numerical information embedded in a range of relevant texts
- portfolio of tables and graphs created by the learner which demonstrate the ability to investigate and interpret statistical data
- oral or written questioning to assess the ability to use the formal and informal language of numbers, graphs, tables and statistical information to interpret and convey the results of a range of mathematical calculations

Unit Code	**VU21365**
Unit Title	**Investigate & use simple mathematical formulae and problem solving techniques in a range of contexts**
Unit Descriptor	This unit describes the skills and knowledge to develop numeracy and mathematical skills involving developing and using simple formulae to describe and represent relationships between variables in range of real life contexts, and on using simple mathematical problem solving techniques to interpret and solve straight forward mathematical problems related to their personal, public, work or education and training lives. At this level the learner works independently across a range of contexts including some that are unfamiliar and/or unpredictable and include some specialisation. The required outcomes described in this unit relate directly to the *Australian Core Skills Framework (ACSF)*, (© Commonwealth of Australia, 2012). They contribute directly to the achievement of ACSF indicators of competence at Level Four Numeracy: 4.09, 4.10, & 4.11.
Employability Skills	This unit contains employability skills.
Application of the Unit	This unit applies to those seeking to improve their educational, vocational or community participation options by developing a range of numeracy and mathematics skills. Numeracy is seen as making meaning of mathematics - mathematics is a tool to be used efficiently and critically and is seen as the knowledge and skills to be applied and used for a range of purposes and in a variety of contexts. The goal is therefore to assist learners to develop mathematical concepts and relationships in ways that are personally meaningful. It is strongly recommended that this unit is integrated with the delivery and assessment of other numeracy and mathematics units. It is also recommended that application is also integrated with other units from across the CGEA. The links between the different units encourage co-delivery and assessment, and replicates real life situations where tasks and activities integrate a wide range of skills including literacy and numeracy.

Element	**Performance Criteria**
Elements describe the essential outcomes of a unit of competency. Elements describe actions or outcomes that are demonstrable and assessable.	Performance criteria describe the required performance needed to demonstrate achievement of the element – they identify the standard for the element. Where bold/italicised text is used, further information or explanation is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

1 Investigate and use simple mathematical formulae in relevant contexts	1.1 Develop ***simple formulae*** and ***algebraic expressions*** which generalise straightforward number patterns or relationships between variables in ***familiar or routine contexts***
	1.2 Translate ***simply worded problems*** involving unknown quantities into simple linear ***equations***
	1.3 Use ***verbal generalisations*** and ***informal and symbolic notation, representation and conventions*** of algebraic expressions
	1.4 Substitute into simple formulae or simple linear equations to find particular values and to check the effectiveness of the developed formulae or equation
	1.5 Solve simple formulae and equations using ***informal or formal techniques***
2 Use mathematical problem solving techniques to investigate and solve relevant problems	2.1 Use ***appropriate techniques*** to interpret and extract relevant information from a ***problem solving activity or text***
	2.2 Select and use a range of appropriate ***problem solving techniques***
	2.3 Assess the ***reasonableness of the result*** and select an alternative problem solving techniques, if necessary
	2.4 Use the ***language and terminology*** of problem solving to communicate the procedures and outcomes of the problem solving activity

Required Knowledge and Skills

This describes the essential skills and knowledge and their level required for this unit.

Required Knowledge:

- signs / prints/ symbols represent meaning in relation to the writing and representation of algebraic expressions
- the use and the purpose of formulae and that they represent relationships between variables in real life tasks and situations

Required Skills:

- literacy skills to read relevant texts and diagrams
- problem solving skills to:
  - understand and use simple mathematical formulae in familiar or routine contexts
  - interpret, use and calculate with a range of types of numbers

Range Statement

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold / italicised wording in the Performance Criteria is detailed below.

Simple formulae includes:	• formulae between variables in familiar or routine contexts:
	  − volume of a rectangular prism (V= L×W×H)
	  − Australian Rules football scores (P = 6g + b)
	  − cost of payment for a plumber charging $120 per hour and a call out fee of $50 (C = 50 + 120h)

Algebraic expressions includes:	• linear relationships and algebraic expressions for number patterns involving one or two arithmetical steps and based around situations that can be described or modelled such as “double the number and add five more”
Familiar or routine contexts may include:	• sports scores • taxi fares • cooking • repair charges • utility payments
Simply worded problems should include:	• one or two arithmetical steps and use language such as doubling, halving, words for the four arithmetic operations
Equations should:	• normally involve only two variables using one or two mathematical operations
Verbal generalisations may include:	• language such as doubling, halving, squaring,‘$25 plus $60 per hour’
Informal and symbolic notation, representation and conventions includes:	• informal representations using words or letters and symbols and standard abbreviations and conventions for the four operations, squares, and fractional amounts including using meaningful symbols such as □’s for unknowns, t’s for teaspoons, P for profit, etc. for written generalisations • conventions for writing algebraic expression are used, such as not using a symbol for multiplication as in 6g = 6 × g

Informal or formal techniques may include:	• informal techniques such as backtracking / guess / check and improve • simple applications of formal techniques such as using inverse operations to both sides of an equation in order to isolate the required variable on one side of the equation • simple graphical techniques such as plotting a graph from a table of values and identifying key values from the graph (not including gradient at this level)
Appropriate techniques include:	• restating/rewriting • drawing diagrams, using flow charts, sketching a graph
Problem solving activity or text includes:	• activities / tasks which require strategies other than the standard application of arithmetical processes
Problem solving techniques may include:	• guess and check; elimination; making a table, diagram or sketch; using patterns; simplifying; concrete modelling • those modelled by the teacher at this level with guidance and support via leading questions
Reasonableness of the result refers to:	• a comparison of final result to initial estimate or referral to context to decide if the result is possible, relevant • knowledge may lead to comparison to previous experience and therefore decide whether result is appropriate
Language and terminology includes:	• common words and phrases for mathematical problem solving techniques such as guess and check, pattern, simplify, trial and error

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the Elements, Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment section in Section B of the Accreditation Submission.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessment must confirm the ability to: • develop and write a range of simple formulae based on real life situations or which generalise straightforward number patterns or relationships between variables • use a range of simple algebraic techniques in using and solving simple mathematical formulae and algebraic expressions • choose appropriate mathematical problem solving techniques to investigate and solve relevant problems

Context of and specific resources for assessment

Assessment must ensure:

- access to real/authentic or simulated tasks, materials and texts which require strategies other than the standard application of arithmetical processes

At this level the learner can:

- flexibly use a blend of personal “in the head” methods, and formal pen and paper and calculator procedures (and software programs where appropriate) to solve problems
- work independently and initiate and use support from a range of established resources
- use a range of informal and formal oral and written mathematical language, symbols, abbreviations and diagrams

Method(s) of assessment

The following assessment methods are suitable for this unit:

- portfolio of work completed by the learner demonstrating the ability to use a range of mathematical problem solving techniques and to develop and use formulae and algebraic expressions in everyday contexts
- oral or written questioning to assess the ability to translate simply worded problems involving unknown quantities into simple linear equations and to communicate processes and outcomes of mathematical problem solving

Unit Code	**VU22074**
Unit Title	**Use a range of techniques to solve mathematical problems**
Unit Descriptor	This unit describes the skills and knowledge to use a range of specialist techniques and concepts to solve mathematical problems.
Employability Skills	This unit contains employability skills.
Application of the Unit	This unit applies to a number of science streams

Element	**Performance Criteria**
Elements describe the essential outcomes of a unit of competency. Elements describe actions or outcomes that are demonstrable and assessable.	Performance criteria describe the required performance needed to demonstrate achievement of the element – they identify the standard for the element. Where bold/italicised text is used, further information or explanation is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.
1 Use ratio, proportion and percent to solve problems	1.1 Determine a ratio from information in a practical problem and express it in simplest form
	1.2 Divide a quantity into a given ratio
	1.3 Convert between fractions, decimals and percent forms
	1.4 Calculate a percentage increase or decrease of a quantity
2 Use trigonometry to determine lengths and angles	2.1 Use Pythagoras' Theorem to determine an unknown side of a right angled triangle
	2.2 Use Pythagoras' Theorem and trigonometric ratios to find unknown side lengths and angles in triangles
3 Use indices to solve problems	3.1 Evaluate index form expressions
	3.2 Simplify exponential expressions using the first two index laws
	3.3 Convert between decimal numbers and numbers expressed in Standard Notation
	3.4 Perform calculations with numbers expressed in Standard Notation, using a calculator

4 Use measurements to solve mensuration problems in two and three dimensions	4.1 Determine lengths and perimeters of rectangles, triangles, circles and simple combined shapes using appropriate and correct units
	4.2 Determine areas of rectangles, triangles, circles and simple combined shapes using appropriate and correct units
	4.3 Determine volumes of prisms and pyramids with rectangular, triangular and circular cross-sections and with simple combined shapes as cross sections using appropriate and correct units
5 Substitute into and transpose equations and formulae	5.1 Substitute given values into equations and formulae
	5.2 Write equations to solve problems
	5.3 Transpose ***formulae***
	5.4 Solve linear equations
6 Solve problems by plotting points	6.1 Plot given points and points determined from the general formula y = mx+c on the Cartesian plane
	6.2 Determine the gradient of a straight line
	6.3 Determine the equation of a ***straight line***, where the equation has the general form y = mx+c, y = a and x = b
	6.4 Use interpolation and extrapolation to make predictions from the line of best fit, noting limitations
7 Present and evaluate statistical information	7.1 Collect, organise and graphically represent ***statistical data***
	7.2 Interpret and analyse ***statistical information***
8 Identify connections between formulae and graphical representations	8.1 Use graphical techniques to draw linear and ***non-linear graphs***
	8.2 Develop equations for given linear graphs, including ***lines of best fit***
9 Use algebraic techniques to analyse and solve problems	9.1 Develop formulae to describe relationships between variables and ***substitute into formulae*** to find particular values
	9.2 Use a ***range of techniques*** to solve a ***range of algebraic problems*** and perform algebraic manipulations

Required Knowledge and Skills

This describes the essential skills and knowledge and their level required for this unit.

Required Knowledge:

- use of Pythagoras Theorem in trigonometry
- principles of algebra
- techniques to solve algebraic problems
- major characteristics of linear and simple non-linear graphs
- graphical techniques to draw graphs

Required Skills:

- numeracy skills to perform a range of calculations including:
  - fractions and mixed numbers
  - decimals and directed numbers
- problem solving skills to :
  - round a decimal to a given number of decimal places
  - use geometry to determine angles in triangles (including non-right angled)
  - convert unit quantities to units with a different prefix
  - write a number correct to a given number of significant figures
  - calculate systematic, random and percentage errors
  - describe the general shape of a given or plotted scatter diagram
  - identify and determine dimensions of general shapes
  - estimate to check calculations and reasonableness of outcomes
  - use a range of mathematical symbolism, charts, diagrams and graphs to represent mathematical thinking and processing
- literacy skills to:
  - read and interpret values in a table, chart or graph
  - locate embedded information necessary to solve a problem or analyse quantitative information
- technology skills to use scientific calculator functions including statistical functions
- planning and organising skills to collect and organise mathematical data

Range Statement

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold / italicised wording in the Performance Criteria is detailed below.

Formulae may include but are not limited to:	• simple formulae with powers
Straight line includes:	• line of best fit for empirical data
Statistical data *may include*:	• grouped data • using standard graphing conventions

Statistical information may include:	• using central tendencies such as mean, median, mode • percentiles • measures of spread
Non-linear graphs may include:	• exponential, inverse and quadratic relationships
Lines of best fit may be:	• drawn by eye only for experimental data
Substitute into formulae should include:	• unfamiliar formulae including where the unknown is not necessarily the subject
Range of techniques should include:	• simplifying, expanding, and simple factorisation of polynomial expressions • simplification of expressions in index form including negative indices
Range of algebraic problems may include:	• linear (involving multiple operations) • simultaneous linear • quadratic

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the Elements, Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment section in Section B of the Accreditation Submission.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessment must confirm the ability to:

- apply a wide range of mathematical concepts and techniques to solve mathematical problems including:
  - using ratio, proportion and percent
  - using trigonometry to determine lengths and angles
  - using basic indices
  - using measurements to solve mensuration problems in two and three dimensions
  - substituting into and transposing simple equations and formulae
  - presenting and evaluating statistical information
  - identifying connections between formulae and graphical representations
  - using algebraic techniques to analyse and solve problems
- apply estimation to check calculations and reasonableness of problem solving outcomes
- use mathematical symbolism, charts, diagrams and graphs to convey mathematical thinking and processing.

Context of and specific resources for assessment

- Calculations should be performed using a combination of pen and paper and calculator as appropriate to the calculation

Assessment must ensure access to:

- calculators to perform calculations
- computers and internet to access relevant mathematical data such as spreadsheets and data bases
- materials and texts to support completion of tasks

Method(s) of assessment

The following suggested assessment methods are suitable for this unit:

- oral or written questioning to assess knowledge of mathematical techniques
- pictures, diagrams, models to demonstrate a mathematical concept
- records of teacher observations of learner's activities, discussions and practical tasks
- written or verbal reports of investigations or problem-solving activities