



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **CUVCER505A Develop and apply ceramic glazes**

**Release: 1**

## CUVCER505A Develop and apply ceramic glazes

### Modification History

Version	Comments
CUVCER505A	This version first released with <i>CUV11 Visual Arts, Craft and Design Training Package version 1.0</i>

### Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to make and apply a range of glazes to create different aesthetic effects for ceramic items. The practitioner uses a variety of techniques to both make and test different types of glazes, including the development of original glaze recipes. The unit requires a sound knowledge of glaze science.

### Application of the Unit

Ceramicists apply the skills and knowledge in this unit.

At this level, work is carried out independently with mentoring and guidance as required.

### Licensing/Regulatory Information

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

### Pre-Requisites

Not applicable.

### Employability Skills Information

This unit contains employability skills.

## Elements and Performance Criteria Pre-Content

<b>Element</b>	<b>Performance Criteria</b>
<i>Elements describe the essential outcomes of a unit of competency.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.</i>

## Elements and Performance Criteria

1. Develop ideas for glazing ceramic forms	<p>1.1 Research glazing ideas from historical and contemporary <i>references</i></p> <p>1.2 Research, adapt and use relevant ideas and approaches with consideration of <i>intellectual property requirements</i></p> <p>1.3 Evaluate the potential for new and original approaches, including original glazes</p> <p>1.4 Refine ideas through play, experimentation and testing</p>
2. Modify and test existing glaze recipes	<p>2.1 Investigate and respond to <i>safety issues</i> for glaze work</p> <p>2.2 Modify and <i>test</i> existing glaze recipes on selected clay bodies, in a variety of firing conditions</p> <p>2.3 Select and use ingredients and <i>materials</i> for <i>glaze making</i> for different purposes based on selected recipes</p> <p>2.4 Develop and test glazes on various clay bodies and in various kiln firings</p> <p>2.5 Achieve different effects through exploration and experimentation with a broad range of advanced <i>glazing techniques, tools and equipment</i></p> <p>2.6 Label and store glazes safely</p>
3. Formulate original glaze recipes	<p>3.1 Inform ideas for original glaze recipes through analysis of glaze science and chemistry</p> <p>3.2 Research raw ingredients and formulas to achieve different effects</p> <p>3.3 Formulate own glaze recipes that aim to achieve predictable fired results</p>
4. Create a body of glazed work	<p>4.1 Use different <i>glaze application techniques</i> and safely modify application according to effect required</p> <p>4.2 Decorate surfaces with glaze using methodologies, techniques and tools selected from own experimentation</p> <p>4.3 Evaluate and respond to potential for changes in application methods</p> <p>4.4 Fire the glazed form at the appropriate temperature and kiln atmosphere</p> <p>4.5 Modify glazes to correct faults and <i>technical problems</i></p> <p>4.6 Maintain accurate <i>records and data</i></p>
5. Evaluate glaze work	<p>5.1 Evaluate glaze work from an aesthetic and functional perspective</p>

	<p>5.2 Evaluate development of own glaze work with others and seek feedback</p> <p>5.3 Reflect on the particular ways that experimentation with different work has informed own practice</p> <p>5.4 Identify <i>ways in which technique may be further developed</i> as part of a professional ceramics practice and build ideas into future work</p>
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## Required Skills and Knowledge

*This section describes the skills and knowledge required for this unit.*

### Required skills

- communication skills to liaise with others about glaze work
- critical thinking and analytical skills to:
  - analyse glaze science and chemistry
  - evaluate the needs of particular work projects, including design briefs for work
  - research and evaluate historical and contemporary glaze work to inform ideas
- literacy skills to:
  - interpret product labels
  - read specifications and requirements
- problem-solving skills to identify and solve technical glaze problems
- numeracy skills to work with chemical formulas and measurements for the mixing and modification of different glazes
- self-management, planning and organising skills to organise resources and work space for glazing.

### Required knowledge

- historical development of ceramic glazes
- properties, types and purpose of glazes and different colouring agents
- chemical principles relevant to the glaze-making process
- benefits and disadvantages of in-glaze, on-glaze and under-glaze decoration
- techniques to decorate green ware or fired ware surfaces
- effects of heat on glaze
- ways to make and test a glaze using chemical formulas
- glaze analysis techniques, including molecular formulas and percentage analysis
- ways to identify and correct glaze faults
- properties and characteristics of clay body types, including commercial clay, naturally occurring clay and materials used in clay bodies – and their effects on glazes
- drying characteristics of clay body and dried sample at various firing stages
- characteristics, composition and function of slips and engobes
- intellectual property issues and legislation for ceramics work
- sustainability considerations in working with glaze materials
- OHS requirements for glaze work.

## Evidence Guide

*The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.*

<b>Overview of assessment</b>	
<b>Critical aspects for assessment and evidence required to demonstrate competency in this unit</b>	<p>Evidence of the ability to:</p> <ul style="list-style-type: none"> <li>• produce a body of ceramic work that shows command of selected advanced glazing methodologies, techniques and tools</li> <li>• make and test original glazes for own work</li> <li>• evolve and refine glaze work through a demonstrated process of experimentation and problem solving</li> <li>• maintain accurate records of glaze work</li> <li>• research glaze practice and history as a source of ideas for own work.</li> </ul>
<b>Context of and specific resources for assessment</b>	<p>Assessment must ensure access to:</p> <ul style="list-style-type: none"> <li>• a safe ceramics work space</li> <li>• ceramic materials, tools and equipment for glazing work.</li> </ul>
<b>Method of assessment</b>	<p>A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:</p> <ul style="list-style-type: none"> <li>• evaluation of glazing skills within a body of work produced by the candidate</li> <li>• evaluation of processes used by the candidate to evolve and refine glazing technique</li> <li>• questioning and discussion about candidate's intentions and the work outcome</li> <li>• review of portfolios of evidence</li> <li>• review of third-party reports from experienced practitioners.</li> </ul> <p>Assessment methods should closely reflect work place demands (e.g. literacy) and the needs of particular groups (e.g. people with disabilities, and people who may have literacy or numeracy difficulties, such as speakers of languages other than English, remote communities and those with interrupted schooling).</p>
<b>Guidance information</b>	Holistic assessment with other units relevant to the industry

<b>for assessment</b>	sector, workplace and job role is recommended, for example: <ul style="list-style-type: none"><li>• CUVACD510A Manage kiln operations.</li></ul>
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## 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, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.*

<p><b>References</b> may include:</p>	<ul style="list-style-type: none"> <li>• art critics, cultural theorists, philosophers and social commentators</li> <li>• art history texts</li> <li>• exhibitions, museums and galleries</li> <li>• films</li> <li>• images, objects and artworks</li> <li>• internet</li> <li>• journal articles</li> <li>• own experience</li> <li>• performances and presentations</li> <li>• technical or medium-specific information</li> <li>• writings.</li> </ul>
<p><b>Intellectual property requirements</b> may include:</p>	<ul style="list-style-type: none"> <li>• copyright</li> <li>• extent to which the work may be used</li> <li>• form of acknowledgement or credit</li> <li>• procedures for seeking permission to use the work of others, including systems for the administration of copyright</li> <li>• protocols for the adaptation of work by others.</li> </ul>
<p><b>Safety issues</b> include:</p>	<ul style="list-style-type: none"> <li>• correct lifting techniques</li> <li>• safe disposal of waste and recycling</li> <li>• hazards associated with glaze work:             <ul style="list-style-type: none"> <li>• respiratory</li> <li>• ingestion</li> <li>• eye hazards</li> <li>• dermatological</li> <li>• physiological</li> </ul> </li> <li>• legislative requirements</li> <li>• requirements of a safe working area</li> <li>• safe use of tools and equipment</li> <li>• use of personal protective equipment (PPE) to protect against such things as:             <ul style="list-style-type: none"> <li>• clay and glaze dust</li> <li>• lustre and thinner fumes.</li> </ul> </li> </ul>

<b>Testing</b> may include firing in different:	<ul style="list-style-type: none"> <li>• atmospheres (neutral or reducing)</li> <li>• kiln types</li> <li>• temperatures.</li> </ul>
<b>Materials</b> may include:	<ul style="list-style-type: none"> <li>• clay bodies</li> <li>• colouring oxides</li> <li>• decorating slips and engobes</li> <li>• glazes</li> <li>• raw materials used to make glazes.</li> </ul>
<b>Glaze making</b> may include:	<ul style="list-style-type: none"> <li>• adding water</li> <li>• blending techniques to achieve specific characteristics</li> <li>• developing glazes that have particular performance characteristics</li> <li>• mixing and screening</li> <li>• preparing from formula</li> <li>• stirring and sieving</li> <li>• weighing materials.</li> </ul>
<b>Glazing techniques</b> may include:	<ul style="list-style-type: none"> <li>• brushing</li> <li>• computer glaze calculation</li> <li>• dipping</li> <li>• dusting</li> <li>• enamels</li> <li>• glaze layering</li> <li>• in-glaze decoration</li> <li>• lustres</li> <li>• on-glaze enamels</li> <li>• pouring</li> <li>• spraying</li> <li>• stamping</li> <li>• trailing</li> <li>• under-glaze.</li> </ul>
<b>Tools and equipment</b> may include:	<ul style="list-style-type: none"> <li>• brushes of varying types</li> <li>• carving tools</li> <li>• decorating tools</li> <li>• electronic equipment used in design work, such as computer, scanner and printer software</li> <li>• kilns</li> <li>• kiln furniture and equipment</li> <li>• knives and blades</li> <li>• measuring devices</li> <li>• mixing and screening equipment</li> <li>• protective clothing</li> </ul>

	<ul style="list-style-type: none"> <li>• rollers</li> <li>• spatulas</li> <li>• storage containers</li> <li>• tongs.</li> </ul>
<i>Glaze application techniques</i> may include:	<ul style="list-style-type: none"> <li>• dipping, pouring and spraying</li> <li>• modifying applications.</li> </ul>
<i>Technical problems</i> may include:	<ul style="list-style-type: none"> <li>• blistering</li> <li>• cracking</li> <li>• crawling</li> <li>• crazing</li> <li>• devitrification</li> <li>• dimpling</li> <li>• pinholing</li> <li>• peeling</li> <li>• running</li> <li>• shivering.</li> </ul>
<i>Records and data</i> may include:	<ul style="list-style-type: none"> <li>• glaze application processes</li> <li>• glaze modifications</li> <li>• glaze recipes and sources</li> <li>• firing schedules.</li> </ul>
<i>Ways in which technique may be further developed</i> may include:	<ul style="list-style-type: none"> <li>• collaboration</li> <li>• further study</li> <li>• intensive workshops</li> <li>• mentored guidance</li> <li>• new projects.</li> </ul>

## Unit Sector(s)

Visual communication – ceramics

## Custom Content Section

Not applicable.