



**Australian Government**

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

# **MEM19005B Produce three-dimensional precision items**

**Release: 1**

## MEM19005B Produce three-dimensional precision items

### Modification History

Not Applicable

### Unit Descriptor

<b>Unit descriptor</b>	This unit covers producing one-off, three-dimensional handmade jewellery items using a range of metals and techniques.
------------------------	--

### Application of the Unit

<b>Application of the unit</b>	<p>This unit applies to the production of one-off three-dimensional precision jewellery items including rings, pendants, brooches, earrings, bracelets and other decorative pieces from metals common to industry practice.</p> <p>Where lathes are used, Unit MEM07005C (Perform general machining) should also be selected. Where soldering is required, Unit MEM05006B (Perform brazing and/or silver soldering) should also be selected. Production of three-dimensional precision jewellery masters is covered by Unit MEM19013B (Prepare jewellery metal masters).</p> <p><b>Band: A</b></p> <p><b>Unit Weight: 8</b></p>
--------------------------------	---

### Licensing/Regulatory Information

Not Applicable

## Pre-Requisites

Prerequisite units		
<b>Path 1</b>	MEM13003B	Work safely with industrial chemicals and materials
	MEM13004B	Work safely with molten metals/glass
	MEM18001C	Use hand tools
	MEM18002B	Use power tools/hand held operations
	MEM18003C	Use tools for precision work

## Employability Skills Information

<b>Employability skills</b>	This unit contains employability skills.
-----------------------------	--

## Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	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.
---	--

## Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine item requirements	1.1.Item production information is identified. 1.2.Process/technique is selected for production of item. 1.3.Item material/s is selected. 1.4.Appropriate tools, equipment and processes are selected.
2. Produce one-off design/item	2.1.Construction plan is developed to meet specifications/stages of process. 2.2.Item components are prepared using appropriate techniques/procedures. 2.3.Design/item is produced/assembled.
3. Finish and inspect work	3.1.Item is checked for compliance with specifications. 3.2.Product data is recorded using appropriate documentation. 3.3.Final finish and storage procedures are applied.

## Required Skills and Knowledge

### REQUIRED SKILLS AND KNOWLEDGE

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

#### Required skills

Look for evidence that confirms skills in:

- interpreting design specifications and following instructions (oral or written)
- interpreting drawings
- weighing and measuring
- selecting appropriate tools and equipment
- selecting appropriate materials and manufacturing techniques
- applying appropriate fabrication and finishing procedures, which may include electroplating
- identifying alternative metals/materials
- meeting compliance specifications
- reading and interpreting routine information on written job instructions, specifications and standard operating procedures. May include drawings
- entering routine and familiar information onto proformas and standard workplace forms

**REQUIRED SKILLS AND KNOWLEDGE****Required knowledge**

Look for evidence that confirms knowledge of:

- reasons for selecting particular metals, construction methods, manufacturing and finishing techniques
- tools and equipment matched to processes
- planning/process stages
- working properties of precious and non-precious metals
- fine detail manufacturing processes
- knowledge of workplace hazards and emergency procedures
- various components of jewellery items
- appropriate measuring devices and recording methods
- procedures for final treatment/safe handling and storage of items
- occupational health and safety procedures
- use and application of personal protective equipment
- safe work practices and procedures
- relevant hazards and control measures related to the competency

## Evidence Guide

<b>EVIDENCE GUIDE</b>	
<p>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.</p>	
<b>Overview of assessment</b>	<p>A person who demonstrates competency in this unit must be able to produce three-dimensional jewellery items. Competency in this unit cannot be claimed until all prerequisites have been satisfied.</p>
<b>Critical aspects for assessment and evidence required to demonstrate competency in this unit</b>	<p>Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.</p>
<b>Context of and specific resources for assessment</b>	<p>This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate.</p> <p>This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with jewellery manufacture or other units requiring the exercise of the skills and knowledge covered by this unit.</p>
<b>Method of assessment</b>	<p>Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency. The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.</p>
<b>Guidance information for</b>	

**EVIDENCE GUIDE**

assessment

**Range Statement****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.

<b>Items</b>	Items involving a range of fabrication processes and techniques, for example various rings, broaches, bracelets, neckpieces
<b>Material/s</b>	<ul style="list-style-type: none"> <li>• Precious and non-precious metals</li> <li>• Consumables including solders and fluxes, drills and blades, polishing compounds, cleaning and finishing materials, adhesives</li> </ul>
<b>Tools, equipment</b>	All hand and power tools appropriate to construction and repair of jewellery items and personal protective equipment
<b>Appropriate preparation and fabrication techniques</b>	<ul style="list-style-type: none"> <li>• Cutting, folding, bending, curving, dapping, drawing, rolling, doming, annealing, melting, granulation</li> <li>• Primarily by brazing/silver soldering but may include other methods such as riveting</li> </ul>
<b>Documentation</b>	Job packet, work instructions and procedures, parts and components reference material, materials and consumables used, time and record sheets, drawings/illustrations, customer verbal/written specifications
<b>Final finish</b>	Filing, emery finishing, high and satin polish, various embellishment finishes (sandblasting, brushed, burring, reticulation, burnishing etc.)

**Unit Sector(s)**

<b>Unit sector</b>	
--------------------	--

**Co-requisite units**

<b>Co-requisite units</b>		

**Competency field**

<b>Competency field</b>	Jewellery and horological
-------------------------	---------------------------