



**Australian Government**

# **MSL975015 Prepare animal and plant material for display**

**Release: 1**

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## **Modification History**

Release 1. Supersedes and is equivalent to MSL975015A Prepare animal and plant material for display

## **Application**

This unit of competency covers the ability to perform a range of techniques to collect and preserve animals and plant material for both public and scientific research display. Personnel are required to assist clients to clarify their display requirements, select the most appropriate collection and preservation procedures and display configuration and then assemble and conserve the display items. The unit does not cover techniques and procedures for handling vertebrates that are subject to national and state/territory animal care and ethics regulations.

This unit of competency is applicable to technical assistants and technical officers in research and teaching institutions, museums, herbariums, commercial taxidermy, forestry, zoos and fauna park industry sectors. This unit of competency is relevant to technicians who may work individually or as part of a team. The workplace will need to equip its personnel with relevant animal handling skills should they be required.

While no specific licensing or certification requirements apply to this unit at the time of publication, laboratory operations are governed by relevant legislation, regulations and/or external accreditation requirements. Local requirements should be checked.

## **Pre-requisite Unit**

Nil

## **Competency Field**

Testing

## Unit Sector

### Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1	<b>Confirm the requirements of the display and plan the work</b>	1.1	Clarify the purpose and design of the display in consultation with other staff
		1.2	Determine suitable methods of collection, preservation and display in order to meet the display requirements
2	<b>Work safely according to the legal and regulatory framework</b>	2.1	Ensure work practices and personal actions conform to all relevant legislation, regulations, codes and guidelines
		2.2	Identify hazards and workplace safety procedures associated with the specimens, samples, collection and preservation methods, reagents and equipment
		2.3	Select, fit and use personal protective equipment (PPE)
		2.4	Address hazards and incidents as they arise
		2.5	Ensure the safe disposal of biohazardous materials and other waste
3	<b>Collect plants and animal material</b>	3.1	Assemble equipment required for collection and preservation
		3.2	Collect specimens to meet display requirements
		3.3	Check identification of specimens and assess their suitability for the display
		3.4	Label specimens and accurately record data to ensure traceability of specimen from the source through to the final display
		3.5	Store specimens during transportation to ensure it retains the required characteristics

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|---|---|-----|--|
| 4 | <b>Preserve plant and animal material</b> | 4.1 | Confirm the identification of specimens and suitability for the purpose                        |
|   |   | 4.2 | Examine the specimens and record data  |
|   |   | 4.3 | Take samples from the specimens and prepare them for preservation                              |
|   |   | 4.4 | Preserve the specimens using workplace procedures  |
|   |   |     |  |
| 5 | <b>Display plant and animal material</b>  | 5.1 | Ensure the specimen is conserved to minimise deterioration                                     |
|   |   | 5.2 | Place the preserved specimen in the display to meet the display plan and security requirements |

## Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

## Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

### **Standards, codes, procedures and/or workplace requirements**

Standards, codes, procedures and/or workplace requirements include the latest version of one or more of:

- Australian and international standards, guidelines and codes covering safety in laboratories; occupational protective equipment; labelling of workplace substances; storage, handling and transport of dangerous goods; environmental management; biological safety cabinets, and physical containment levels and facility types
- national work health and safety (WHS) standards, animal welfare legislation and codes of practice, and permits for wildlife capture and handling
- specific codes, regulations, guidelines, procedures and methods, such as gene technology regulations, Australian Dangerous Goods Code, animal welfare legislation and codes of practice, Australian Quarantine and Inspection Service (AQIS) Import Guidelines, and principles of good laboratory practice (GLP)

### **Staff**

Staff include, but are not limited to, one or more of:

- curator
- conservator
- design exhibition project officer
- project manager
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### **Requirements of a display plan**

Requirements of a display plan include, but are not limited to, one or more of:

- purpose (public display or part of a collection for research purposes)
- length of time (permanent or temporary)
- accessibility (static or interactive)
- type (diorama, live or preserved specimens and additions to existing showcase)
- two- or three-dimensional
- exclusion of pests
- specific features of the specimen to be demonstrated
- lighting that is sympathetic to the conservation of the specimen
- security (particularly for valuable, vulnerable or irreplaceable specimens)

- user-friendliness for both visitors and maintenance staff

**Collection**

Collection includes, but is not limited to, one or more of:

- collecting live specimens from the wild
- accessing specimens from existing collections in the base or other institutions
- netting, trapping and light traps
- use of euthanasia techniques, such as shooting, stunning, anaesthetics, gases and chemicals

**Identification**

Identification includes, but is not limited to, one or more of:

- collection access number
- tags and labels on existing specimens
- use of field guides, keys and taxonomic charts
- collaboration with experts

**Suitability of specimen**

Suitability of specimen includes, but is not limited to, one or more of:

- whole or part
- sex, age and breeding condition
- type and characteristics
- level of preservation
- whether dead or alive
- inclusion of features for identification, such as flowers, fruit, roots and leaves

**Data to be recorded**

Data to be recorded includes, but is not limited to, one or more of:

- collection information such as location, time, date, collector, behaviour, environment, depth, altitude, weather and habitat
- reference photographs of the environment in the field
- reference drawings to characterise colour and shape
- identification number, collection access number, collection database and catalogue details
- characteristics of the specimen, such as:
  - standard measurements (mass, length and size)
  - plumage characteristics (age, pattern and colour)
  - flesh characteristics (skin tone, naked flesh texture and internal organs)

- sex
- X-rays and scans
- manual or electronic data

**Samples**

Samples include, but are not limited to, one or more of:

- DNA
- tissue
- bone fragments
- stomach contents
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**Preparation for preservation**

Preparation for preservation includes, but is not limited to, one or more of:

- treatment of the specimen (dissection, mounting, pinning, use of backing boards, fixing, staining, colour retention, latex injection and vascular preservation)
- preparation of the display (painting, making of wet boxes, choice of vessel and storage fluid, planning of mould sections and lay up)
- maceration of tissue from skeletons by sand, invertebrates, cold or warm water, enzymes, physical removal or chemical treatment

**Preservation**

Preservation includes, but is not limited to, one or more of:

- temporary (freezing)
- wet (whole mounts in formalin and tissue staining)
- dry (freeze and air drying), pressing, taxidermy, including exhibition quality mounts, study skins, tanning and plastination techniques, such as dry mounting of seeds, bird skins, pin mounted invertebrates and pressing of plants
- skeletal involving maceration, degreasing, bleaching, articulation and mounting or sectioning (e.g. whale skeletons)
- mould and cast (alignate, plaster, stone plaster, polyester, latex, silicone, Vinamould, gelatine, urethane elastomers, glass and carbon fibre), such as for fish, amphibians and reptiles
- embedding by encapsulation in clear plastic or resin using wet or dry techniques

**Detailing of specimens**

Detailing of specimens includes, but is not limited to, one or more of:

- cleaning
- touch up
- addition of false eyes

**Conservation**

Conservation involves:

- minimisation of deterioration which can be caused by pests, light and/or humidity

**Workplace safety procedures**

Workplace safety procedures include, but are not limited to, one or more of:

- ensuring access to service shut-off points
- recognising and observing hazard warnings and safety signs
- using material safety data sheets (MSDS)
- labelling of samples, reagents, aliquoted samples and hazardous materials
- handling and storage of all hazardous materials and equipment in accordance with labelling, MSDS and manufacturer instructions
- identifying and reporting operating problems or equipment malfunctions
- cleaning and decontaminating equipment and work areas regularly using recommended procedures
- using PPE, such as hearing protection, sunscreen lotion, gloves, safety glasses, face guards, coveralls, gowns and safety boots
- reporting abnormal emissions, discharges and airborne contaminants, such as noise, light, solids, liquids, water/wastewater, gases, smoke, vapour, fumes, odour and particulates, to appropriate personnel
- following established procedures for handling animals

**WHS and environmental management requirements**

WHS and environmental management requirements include:

- complying with WHS and environmental management requirements at all times, which may be imposed through state/territory or federal legislation. These requirements must not be compromised at any time
- applying standard precautions relating to the potentially hazardous nature of samples
- accessing and applying current industry understanding of infection control issued by the National Health and Medical Research Council (NHMRC) and State and Territory Departments of Health, where relevant



## **Unit Mapping Information**

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## **Links**

MSA Training Package Implementation Guides - <http://mskills.org.au/training-packages/info/>