



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	Confirm the requirements of the display and plan the work	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

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| 2 | Work safely according to the legal and regulatory framework | <div>2.1 Ensure work practices and personal actions conform to all relevant legislation, regulations, codes and guidelines</div> <div>2.2 Identify hazards and workplace safety procedures associated with the specimens, samples, collection and preservation methods, reagents and equipment</div> <div>2.3 Select, fit and use personal protective equipment (PPE)</div> <div>2.4 Address hazards and incidents as they arise</div> <div>2.5 Ensure the safe disposal of biohazardous materials and other waste</div> |
| 3 | Collect plants and animal material | <div>3.1 Assemble equipment required for collection and preservation</div> <div>3.2 Collect specimens to meet display requirements</div> <div>3.3 Check identification of specimens and assess their suitability for the display</div> <div>3.4 Label specimens and accurately record data to ensure traceability of specimen from the source through to the final display</div> <div>3.5 Store specimens during transportation to ensure it retains the required characteristics</div> |
| 4 | Preserve plant and animal material | <div>4.1 Confirm the identification of specimens and suitability for the purpose</div> <div>4.2 Examine the specimens and record data</div> <div>4.3 Take samples from the specimens and prepare them for preservation</div> <div>4.4 Preserve the specimens using workplace procedures</div> |
| 5 | Display plant and animal material | <div>5.1 Ensure the specimen is conserved to minimise deterioration</div> |

- 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 •
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

WHS and environmental management requirements include:

management requirements

- 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

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

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5c63a03b-4a6b-4ae5-9560-1e3c5f462baa>

Assessment Requirements for MSL975015 Prepare animal and plant material for display

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Performance Evidence

Evidence of competence in this unit must satisfy all of the requirements of the elements and performance criteria, and include demonstration of:

- safely collecting and preserving five (5) different examples of animal and plant material for display
- assisting clients to clarify their display requirements
- selecting appropriate collection, preservation and display techniques to suit particular display requirements
- recognising, identifying and collecting suitable animal and plant specimens
- storing and transporting specimens safely while maintaining their wellbeing, viability and/or integrity, as appropriate
- preserving and preparing animal and plant specimens for a range of display purposes
- assembling and conserving the display items
- preparing displays that meet client and security requirements
- complying with all legislative, regulatory and workplace requirements
- keeping records to provide chain of custody of specimens and samples through collection, storage, preservation and display
- following workplace safety procedures.

Knowledge Evidence

Must provide evidence that demonstrates knowledge of:

- classification/taxonomy/flora and fauna recognition and identification methods
- legislative limitations on collection of flora and fauna
- specimen preparation methods relevant to job role, such as fixation and preservation techniques, and preparation of skeletal material
- workplace processes and procedures for creation of displays relevant to job role
- relevant hazards, work health and safety (WHS) and environment requirements.

Assessment Conditions

- Judgment of competence must be based on holistic assessment of the evidence. Assessment methods must confirm consistency of performance over time, rather than a single assessment event.

- This unit of competency is to be assessed in the workplace or a simulated workplace environment. A simulated workplace environment must reflect realistic operational workplace conditions that cover all aspects of workplace performance, including the environment, task skills, task management skills, contingency management skills and job role environment skills.
- Foundation skills are integral to competent performance of the unit and should not be assessed separately.
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.
- Knowledge evidence may be collected concurrently with performance evidence or through an independent process, such as workbooks, written assessments or interviews (provided a record is kept in each case).
- This unit of competency may be assessed with:
 - MSL975017 Perform laboratory-based ecological techniques
- Holistic assessment methods include:
 - review of display plans prepared by the candidate (or as part of a team)
 - examination of animal and plant displays prepared by the candidate
 - observation of the candidate collecting, preserving and mounting specimens
 - oral and written tests to assess required knowledge of legislative, regulatory and workplace requirements and techniques for preparing animal and plant material for display.
- Access is required to instruments, equipment, materials, workplace documentation, procedures and specifications associated with this unit, including, but not limited to:
 - a standard laboratory equipped with equipment and reagents
 - workplace procedures for the collection, storage, preservation, mounting and documentation of specimens and preparation of displays.
- Assessors must satisfy the assessor competency requirements that are in place at the time of the assessment as set by the VET regulator.
- The assessor must demonstrate both technical competence and currency.
- Technical competence can be demonstrated through:
 - relevant VET or other qualification/Statement of Attainment AND/OR
 - relevant workplace experience.
- Currency can be demonstrated through:
 - performing the competency being assessed as part of current employment OR
 - having consulted with a laboratory about performing the competency being assessed within the last twelve months.

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