



National Unit specification: general information

Unit title: Husbandry and Maintenance of Laboratory Animals
(SCQF level 6)

Unit code: F9XH 12

Superclass: SN

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Summary

This Unit has been designed to give candidates the practical skills required to carry out routine husbandry and maintenance tasks in an animal facility. Candidates are required to demonstrate correct handling techniques for a range of animal species in designated circumstances, to sex animals and be able to identify them individually. The candidate will become familiar with the different breeding strategies related to laboratory animals. The candidate will acquire an understanding of the design of animal facilities related to their specific purpose which will ensure they obtain a comprehensive view of the necessary husbandry and maintenance. Throughout the Unit emphasis is placed on studying the animal facility and species which are familiar to the candidate and comparing this information with other species and techniques used in facilities designed for alternative purposes. Emphasis is placed on the requirement for the candidate to be able to use, care and maintain equipment that is in common use in an animal facility. Legislation which is pertinent to the daily work of a candidate in an animal facility will be reviewed as it applies to their daily duties.

It is expected that candidates will have current experience of working in an animal laboratory facility.

Outcomes

- 1 Maintain laboratory animals on a daily basis.
- 2 Handle laboratory animals for specific procedures
- 3 Describe the range and operation of animal facilities in relation to their purpose.
- 4 Use and maintain equipment in an animal facility.
- 5 Maintain laboratory animals in compliance with statutory legislation.

General information (cont)

Recommended entry

While entry is at the discretion of the centre, candidates would normally be expected to have attained one of the following, or equivalent:

- ◆ Standard Grade Biology at grade 1 or 2
- ◆ Standard Grade Science at grade 1 or 2

Credit points and level

1 National Unit credit at SCQF level 6: (6 SCQF credit points at SCQF level 6*)

**SCQF credit points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification in the Framework is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from Access 1 to Doctorates.*

Core Skills

Opportunities to develop aspects of Core Skills are highlighted in the support notes of this Unit specification.

There is no automatic certification of Core Skills or Core Skill component in this Unit.

National Unit specification: statement of standards

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Acceptable performance in this Unit will be the satisfactory achievement of the standards set out in this part of the Unit specification. All sections of the statement of standards are mandatory and cannot be altered without reference to SQA.

Outcome 1

Maintain laboratory animals on a daily basis.

Performance Criteria

- (a) Appropriate environmental conditions are provided for laboratory animals.
- (b) Breeding strategies used for a given species are described correctly.
- (c) The correct housing and bedding for a species are described correctly.
- (d) The food and water requirements appropriate for the life stage of the animal are described correctly.
- (e) Daily maintenance procedures are correctly carried out.

Outcome 2

Handle laboratory animals for specific procedures.

Performance Criteria

- (a) Sex, weight and stage of development are correctly determined.
- (b) Describe correctly the appropriate identification methods used for individual animals.
- (c) Animals are restrained in a manner appropriate for the specific procedure and the species.
- (d) Animals are handled in a manner to ensure the safety of both the animal and the handler.

Outcome 3

Describe the range and operation of animal facilities in relation to their purpose.

Performance Criteria

- (a) Operational procedures are clearly described.
- (b) Common types of specialist facilities are clearly described.
- (c) The design of conventional animal facilities is clearly described in relation to the operational routines employed.

Outcome 4

Use and maintain equipment in an animal facility.

Performance Criteria

- (a) The equipment for routine environmental monitoring is correctly used.
- (b) Equipment for routine care is used and maintained correctly.
- (c) Health and safety procedures for all equipment are correctly described.

National Unit specification: statement of standards (cont)

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Outcome 5

Maintain laboratory animals in compliance with statutory legislation.

Performance Criteria

- (a) Relevant statutory legislation relating to working with animals in an animal facility are correctly described.
- (b) Sections of relevant statutory legislation which relate directly to the management and organisation of animal facilities are correctly applied.
- (c) Sections of the relevant statutory legislation which relate to record keeping and transport of animals are correctly applied.

Evidence Requirements for this Unit

Outcome 1

- ◆ Candidates must provide evidence that they have correctly monitored and recorded environmental conditions (which must include temperature and humidity within the range for the species) for one animal room for a period of a week.
- ◆ Candidates must describe correctly at least three breeding strategies for the given species
- ◆ Candidates must describe correctly the appropriate housing and bedding for the given species
- ◆ Candidates must describe correctly the food and water requirements appropriate to the life stage of the given species
- ◆ Candidates must provide evidence that they have recorded all appropriate daily maintenance procedures (which must include births, deaths, weans and cage cleaning) for one animal room for a period of week.

Outcome 2

- ◆ Candidates must demonstrate that they can correctly determine the sex, weight and stage of development for a given species.
- ◆ Candidates must correctly describe at least one appropriate identification method for each of the following: rodents, rabbits, dogs, cats and primates.
- ◆ Candidates must demonstrate the correct methods of restraint appropriate to a given procedure and species.
- ◆ Candidates must demonstrate appropriate animal handling procedures ensuring the safety of both animal and handler.

Outcome 3

- ◆ Candidates must correctly describe the operational procedures for a barrier facility and a conventional facility (which must include the following procedures appropriate to both: bio-security, entrance procedures, movement of animals)
- ◆ Candidates must correctly describe the common types of specialist facilities, which must include reference to animal entry procedures for each type of facility.
- ◆ Candidates must produce a design for a conventional animal facility. The design must correctly cover the appropriate operational needs of the chosen facility.

National Unit specification: statement of standards (cont)

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Outcome 4

- ◆ Candidates must provide evidence that they have correctly used the appropriate equipment used for routine environmental monitoring in the facility.
- ◆ Candidates must describe the correct procedures for the maintenance and use of equipment for routine care. (this equipment must include cage wash and auto clean)
- ◆ Candidates must correctly describe the appropriate health and safety procedures for all relevant equipment used.

Outcome 5

- ◆ Candidates must demonstrate an understanding of the relevant statutory legislation relating to working with animals in an animal facility by correctly describing how to source the legislation.
- ◆ Candidates must demonstrate an understanding of the relevant statutory legislation which relate directly to the management and organisation of animal facilities by correctly describing an animal room that meets the housing and environmental conditions of a given species.
- ◆ Candidates must demonstrate an understanding of the relevant statutory legislation which relate to record keeping and transport of animals by describing the statutory records that must be maintained.

National Unit specification: support notes

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This part of the Unit specification is offered as guidance. The support notes are not mandatory.

While the exact time allocated to this Unit is at the discretion of the centre, the notional design length is 40 hours.

Guidance on the content and context for this Unit

This Unit contains many practical tasks which can only be carried out within the workplace. When there is no available assessor in the workplace, witness statements along with a workplace diary may be adequate evidence if supported by oral questioning by the assessor. Persons working as witnesses should be provided with comprehensive details of the task and the criteria for assessment. They should be suitably qualified in the area of work which is being assessed and in most cases be the superior to the candidate.

On completion of the Unit the candidate will have demonstrated their ability to carry out routine husbandry and maintenance tasks with one species kept as laboratory animals and to have demonstrated their knowledge of other laboratory species and animal facilities. Methods of identification, sexing and the correct handling techniques for a range of procedures will have been covered. An overview of the requirements of some specialised facilities should be included. The function and correct use of common equipment to maintain the functioning of a laboratory animal facility should be demonstrated. Legislation affecting the daily work of an Animal Technician will be covered in overview with areas directly related to their daily work described in detail. Candidates working in laboratories are often only trained in one type of facility with one species of animal. The concepts explored in this Unit should be in a generalised format to enable the candidate to gain basic information which can be adapted to other species or animal facilities in which they might be working. The Health and Safety aspects of working with laboratory animals should be taken into account throughout the Unit as should the welfare and well-being of the laboratory animal.

Outcome 1

This Outcome is to ensure candidates are aware of the variety of housing available and the dimensions required for various species, ages and sizes of animal. The merits of various construction materials should be discussed. Both animals kept in colonies and those housed by necessity individually should be covered as should the specialised housing requirements of animals on clinical trials. The daily operational procedures should be given as an overview in this Unit with emphasis placed on the routine procedures required to maintain the functioning of the facility.

Although this Outcome specifies a very distinct range the overall perspective of the candidate should be to ensure that the environment and management of an individual animal or a group of animals is appropriate to the species, age, condition and scientific purpose of the animal or colony. The ability to determine the relative merits of various methods of housing, types of bedding and provision of daily requirements for food and water must be shown to be appropriate for the individual animal or colony.

National Unit specification: support notes (cont)

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Outcome 2

The ability to handle animals safely is essential. The safety of both the handler and the animal should be emphasised to prevent stress, damage or deterioration of the animal's condition. The candidate should appreciate the degree of restraint required with respect to the particular animal and the procedure to be carried out. The candidate should be able to assess the sex of an animal by recognised methods at varying stages of development. They should be able to assess whether an animal's weight is appropriate for the age and sex of the particular animal species. Appropriate identification methods should be applied by the candidate. Candidates should also be able to select an appropriate identification method for species in the range.

Outcome 3

It is essential that the candidate appreciates the general requirements for keeping laboratory animals then applies this knowledge to animal species with which they are working. The use of specialised units should be covered only to ensure the candidate is aware of the other types of facility available. Record systems are essential to the functioning of any animal facility and completion of adequate and accurate records should be emphasised. The benefits of computerised record systems should be emphasised and could be associated with the means of identification of animals.

Outcome 4

Candidates should be aware of the purpose and benefit of all the environmental monitoring equipment. The importance of care and regular maintenance of equipment and the Health and Safety requirements of working with it should be emphasised. The use of automated equipment should be backed up by knowledge of manual alternatives.

Outcome 5

The candidate is not required to have an in depth knowledge of legislation but only of the effect specific Acts of Parliament have on their daily work. Details pertinent to the daily running of an animal facility should be covered but the specifics of the Animal Procedures Act etc are not required.

It is more important that the candidate recognises the legal restrictions on their work than demonstrate an ability to recount the details of legislation.

Guidance on learning and teaching approaches for this Unit

Introductory classes should cover the theory as required and the necessary legislation. Practical demonstrations should be employed wherever possible and extended to give candidates the opportunity to cover as much of the range as possible.

National Unit specification: support notes (cont)

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Opportunities for the use of e-assessment

Outcome 1

A diary covering the routine care and maintenance of one species in the range would be an appropriate method of assessment along with witness statements and oral questioning by an assessor.

The importance of recognising the individual requirements from the wide diversity available could be assessed by a structured project on a species other than those with which the candidate works along with multiple choice and short answer questions.

Outcome 2

Witness statements of handling five animals within one species should cover all Performance Criteria and the range relevant to that species. The remainder of the range could be covered by assessor questioning. It is essential that handling sessions are repeated several times with different animals to ensure complete competency. It may be extremely difficult to arrange for the whole of the laboratory animal range to be handled by the candidate but this is the level which should be strived for. Simulation is only acceptable to cover the range if a practical is not possible. Assessment of competence should include the handling of fractious animals if possible.

Weight curves during growth, pregnancy, lactation and if appropriate age should be recorded over an appropriate period which will vary with the species concerned.

Outcome 3

Candidates might be assessed by a project to describe a basic animal facility for a species which they are not familiar with from the range. The design should incorporate dimensions and construction details of the animal room, including the provision of the correct environment, selection of cage type and layout, provision of basic care facilities including food, water, bedding. The remainder of the range could be covered by multiple choice questions. The design of specialised facilities is above the level of this qualification and should be assessed to determine the candidate's ability to check any specialised facility for the required provision. In PC (a) provision of records from the workplace should be adequate but an alternative approach would be the use of short answer questions.

Outcome 4

Practical assessment over a period of two or three months would be appropriate. Alternatively the use of a diary with witness statements should be considered. Simulation for less commonly used equipment would be acceptable. Multiple choice questions may be appropriate to ensure the range is adequately covered.

Outcome 5

Candidates should apply the relevant statutory legislation to all aspects of husbandry and maintenance.

An assignment to cover the relevant statutory legislation would be appropriate.

Multiple choice or restricted response questions would be appropriate. The use of simulation of a workplace to evaluate the areas where legislation restricts or directs work may be appropriate.

National Unit specification: support notes (cont)

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E-assessment may be appropriate for some assessments in this Unit. By e-assessment we mean assessment which is supported by Information and Communication Technology (ICT), such as e-testing or the use of e-portfolios or e-checklists. Centres which wish to use e-assessment must ensure that the national standard is applied to all candidate evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. Further advice is available in *SQA Guidelines on Online Assessment for Further Education (AA1641, March 2003)*, *SQA Guidelines on e-assessment for Schools (BD2625, June 2005)*.

Disabled candidates and/or those with additional support needs

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering whether any reasonable adjustments may be required. Further advice can be found on our website www.sqa.org.uk/assessmentarrangements

History of changes to Unit

Version	Description of change	Date

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