



Higher National Unit specification

General information for centres

Unit title: Small Animal Breeding

Unit code: F3V9 34

Unit purpose: This Unit is designed to enable candidates to develop knowledge and understanding to effectively select and plan the breeding process of small animals, dogs cats and rabbits. The Unit should give the candidate the underpinning knowledge that is needed to work in the animal care industry.

On completion of the Unit the candidate should be able to:

- 1 Explain the reproductive anatomy and physiology of a range of small animal species.
- 2 Explain the organisation of the breeding process for small animals.
- 3 Describe the most commonly encountered reproductive problems in small animals.
- 4 Describe the postnatal care of small animals.

Credit points and level: 1 HN credit at SCQF level 7: (8 SCQF credit points at SCQF level 7*)

**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.*

Recommended prior knowledge and skills: Access to this Unit is at the discretion of the centre. However, it would be beneficial if the candidate had completed NQ Animal Care or a range of appropriate units and/or had experience of working with or caring for animals.

Core Skills: There are opportunities to develop the written component of the Core Skill *Communication* at SCQF level 6 in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

Context for delivery: If this Unit is delivered as part of a Group Award, it is recommended that it should be taught and assessed within the subject area of the Group Award to which it contributes.

Assessment: The Unit is assessed by two closed book assessments for Outcome 1 and 3. Outcomes 2 and 4 could be assessed by a case study or appropriate assignment.

If delivered as part of Animal Care HNC, centres may wish to consider integration of Outcome 1's assessment with that used for Outcome 3 of the HN Unit *Companion Animal Anatomy and Physiology*.

Higher National Unit specification: statement of standards

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The sections of the Unit stating the Outcomes, Knowledge and/or Skills, and Evidence Requirements are mandatory.

Where evidence for Outcomes is assessed on a sample basis, the whole of the content listed in the Knowledge and/or Skills section must be taught and available for assessment. Candidates should not know in advance the items on which they will be assessed and different items should be sampled on each assessment occasion.

Outcome 1

Explain the reproductive anatomy and physiology of a range of small animal species

Knowledge and/or Skills

- ◆ The reproductive anatomy of male and non-pregnant female animals
- ◆ The oestrus cycle
- ◆ Artificial manipulation
- ◆ The basic physiology of pregnancy
- ◆ The male reproductive physiology

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can, using example from a range of dogs, cats and rabbits:

- ◆ identify correctly the anatomical parts of male and non-pregnant female animals for a range of small animal species. A minimum of six male and six female parts are required to be correctly identified.
- ◆ explain the stages of the oestrus cycle and types of oestrus cycle. The explanation must include artificial manipulation, induced and spontaneous ovulation.
- ◆ explain the basic physiology of pregnancy. Any explanation must include three of the following: fertilisation, basic embryological development, implantation, placentation and hormones.
- ◆ describe the male reproductive physiology. Any description must include Spermatogenesis.

The assessment for this conducted under closed book conditions.

Assessment Guidelines

The Outcome could be assessed by 10 restricted response questions.

Higher National Unit specification: statement of standards (cont)

Unit title: Small Animal Breeding

Outcome 2

Explain the organisation of the breeding process for small animals

Knowledge and/or Skills

- ◆ Breeding Criteria
- ◆ Breeding systems
- ◆ Practical processes
- ◆ Confirmation of pregnancy methods
- ◆ Pregnancy care requirements
- ◆ Parturition
- ◆ Health and Safety

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- ◆ explain at least five different breeding criteria used to select male and female animals for a range of different purposes. Criteria to be chosen from size; conformation; colour; coat type; temperament; fertility; mothering ability.
- ◆ describe three different breeding systems and the problems encountered using each of the three chosen systems. The breeding systems to be chosen from cross breeding, line breeding, in-breeding, out breeding, hybrid vigour or genetic 'improvement.' The description of problems encountered must include hip and elbow dysplasia.
- ◆ describe at least three practical processes, relating to mating, the description must include oestrus detection, the timing and frequency of the mating.
- ◆ describe at least three different methods of pregnancy confirmation from Abdominal palpation, blood tests, ultrasound and radiography.
- ◆ describe aspects of care relating to the pregnant animal. The description must include worming, vaccination, nutrition and exercise.
- ◆ describe the different stages of labour and the common routines required at time of parturition.
- ◆ explain the importance of at least two Health and Safety issues that relate to the breeding process. The explanation must include two from the following risk of infection, risk of injury from over protective dams, zoonotic potential of Ascarid worms.

Assessment Guidelines

This Outcome could be assessed in conjunction with Outcome 4 in the form of a Case Study which covers all the Evidence Requirements of the two Outcomes.

Higher National Unit specification: statement of standards (cont)

Unit title: Small Animal Breeding

Outcome 3

Describe the most commonly encountered reproductive problems in small animals

Knowledge and/or Skills

- ◆ Infertility
- ◆ Parturition Problems
- ◆ Postpartum problems

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- ◆ describe reasons for infertility in males and females from a range of small animals. The range must include dog, cat, rabbit and one other, and at least one different reason for each sex.
- ◆ describe at least three problems associated with parturition. The description must include malpresentation, uterine inertia and excessive haemorrhage and include reference as to why some of these conditions may have occurred.
- ◆ describe at least four problems associated with postpartum care from hypothermia, cleft palate, heart defects, umbilical hernias, eclampsia, mastitis, fading syndromes.

The assessment for this Outcome must be conducted under closed book conditions.

Assessment Guidelines

The Outcome could be assessed by 10 restricted response questions.

Higher National Unit specification: statement of standards (cont)

Unit title: Small Animal Breeding

Outcome 4

Describe the postnatal care of small animals

Knowledge and/or Skills

- ◆ Postnatal care
- ◆ Neonates
- ◆ Dam

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- ◆ describe at least three different factors from environmental control, worming, nutrition and weaning relating to the postnatal care neonates for a range of small animals. The range must include dog, cat, rabbit and one other animal.
- ◆ describe at least two different factors that affect postnatal care of the dam from: environmental control, worming, nutrition and weaning relating to the neonates along with nutrition, worming and exercise considerations for a range of small animals.

Assessment Guidelines

This Outcome could be assessed in conjunction with Outcome 2 in the form of a Case Study which covers all the Evidence Requirements of the two Outcomes.

This may be a real or fictional document which covers the requirements of breeding animals from the range, for specific purposes. The case study must cover all Evidence Requirements of Outcome 2 and Outcome 4.

Administrative Information

Unit code: F3V9 34
Unit title: Small Animal Breeding
Superclass category: SH
Original date of publication: August 2008
Version: 01

History of changes:

Version	Description of change	Date

Source: SQA

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Higher National Unit specification: support notes

Unit title: Small Animal Breeding

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 is intended for candidates who are working in or seeking a career in the animal care industry or for candidates who have an interest in factors relating to the breeding of a range of small animals. The teaching and learning should be delivered in this context. Animals in the range must include dogs, cats, rabbits and at least one other, and examples of these animals are expected to be used to meet the criteria below.

Health and safety procedures should always be followed, for example when considering handling and zoonosis. Additional information relating to each Outcome is given below:

- 1 This Outcome covers the anatomy and physiology of the reproductive parts of small animals from the range. A range of diagrams, models and possibly real tissues could be used to tutor the candidate. The candidate should have a basic working knowledge of the reproductive tracts of both male and female animals and enough to understand the reproductive process in terms of timing of mating, reproductive problems etc.

For the oestrus cycle, examples from animals across the range may be used. Aspects covered must include, Stages, types of cycle, induced and spontaneous ovulation, artificial manipulation . It is expected that both the cat and dog oestrus cycle be studied closely.

The physiology of pregnancy could cover aspects such as fertilisation, basic embryological development, implantation, placentation, and hormonal effect. The male reproductive physiology could primarily cover spermatogenesis and hormone production.

- 2 Breeding criteria require to be investigated, Size, breed, age, working ability, speed, conformation, colour, coat type, temperament, fertility, mothering ability, rate of maturation, legal restrictions, governing body guidance could all be included in subject delivery.

Breeding systems and some problems associated should include investigations of cross breeding, line breeding, in-breeding, out breeding, hybrid vigour, genetic 'improvement'. Associated problems must cover hip and elbow dysplasia, eye defects, respiratory problems, temperament problems and skin problems. Investigation of the BVA testing scheme will cover a lot of breeding related problems.

For the practical process of mating, videos and visits may be used but methods of oestrus detection, the timing and frequency of the mating process and even the location should all be covered.

Pregnancy confirmation could include the current popular methods of diagnosis but reference should be made to methods less frequently used. Abdominal palpation, blood tests, ultrasound and radiography should all be covered.

Higher National Unit specification: support notes (cont)

Unit title: Small Animal Breeding

During gestation, care requirements such as worming, vaccination, nutrition and exercise could all be discussed and the stages and process of Parturition could be investigated in detail.

Throughout the Outcome reference must be made to Health and Safety issues that may affect those working with breeding animals. At least two notable Health and Safety issues that relate to the breeding process could be covered examples may include risk of infection, risk of injury from over protective dams, zoonotic potential of Ascarid worms.

- 3 This Outcome could cover a broad range of reproductive problems appropriate to animals from the range.

Reasons for infertility could be covered and should include some common infections that may cause problems. Sperm quality and genetic problems could be considered along with some of the more obvious problem of the timing of the mating.

Parturition problems could be covered in appropriate detail, malpresentation, uterine inertia and excessive haemorrhage must be considered with some reference being made as to why some of these conditions may have occurred.

Postpartum problems such as hypothermia, cleft palate, heart defects, umbilical hernias, eclampsia, mastitis, fading syndromes must all be considered as reasons for possible loss of neonates.

- 4 Postnatal care could be covered up to and around normal weaning. Care for both the neonates and the dam must be considered. Subject material could include: environmental control, worming, nutrition and weaning relating to the neonates along with nutrition, worming and exercise considerations for the dam.

This list is the recommended minimum and the tutors should include any other appropriate conditions that they deem relevant at the time.

Guidance on the delivery and assessment of this Unit

This Unit is likely to be part of a Group Award providing candidates with the ability to work in the animal care industry. It could also be a standalone Unit for those wishing to improve their knowledge and understanding of breeding small animals. The Unit is linked to other HNC/HND Units such as *Animal Welfare* and *Animal Nutrition*, where care of small animals during pregnancy and care of the neonate are covered. Also, *Animal Care Facility Management* considers the management of breeding establishments.

Photographs, videos, slides, visits to specialist facilities and presentations by visiting speakers could all enhance this Unit. These may reinforce learning and widen candidates' range of experience.

The first Outcome uses a closed book assessment. This could be a series of short answer questions using diagrams, where appropriate. If delivered as part of Animal Care HNC, centres may wish to consider integration of Outcome 1's assessment with that used for the HN Unit *Companion Animal Anatomy and Physiology* (Outcome 3 Reproductive Systems).

Higher National Unit specification: support notes (cont)

Unit title: Small Animal Breeding

Assessment of the second and fourth Outcomes may be integrated. There is the opportunity for a variety of assessment methods but a case study/assignment is likely to be the most appropriate method.

The third Outcome uses a closed book assessment and could be in the form of a series of short answer questions.

Opportunities for developing Core Skills

There are opportunities to develop the written component of the Core Skill of *Communication* at SCQF level 6 in this Unit, although there is no automatic certification of Core Skills or Core Skills components

The delivery and assessment of this Unit (Outcomes 2 and 4) could contribute towards the component Written Communication of the Core Skill of *Communication* at SCQF level 5, particularly by use of a report or research project as the instrument of assessment. The general skills of the component are 'read, understand and evaluate written communication' for its reading element and 'produce well-structured written communication' for its written element.

Open learning

The bulk of this unit could be delivered by distance learning; however it would require planning by the centre to ensure the sufficiency and authenticity of candidate evidence.

Candidates with disabilities and/or additional support needs

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering alternative Outcomes for Units. Further advice can be found in the SQA document *Guidance on Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs* (www.sqa.org.uk).

General information for candidates

Unit title: Small Animal Breeding

This Unit is intended to prepare you for work in the animal care industry but is equally valuable if you have an interest in the breeding of small animals.

There are four Outcomes in the Unit.

In this first Outcome, your study will primarily concentrate on the anatomy and physiology of the reproductive systems relating to dogs, cats and rabbits. You will learn about the reproductive hormones and their basic functions, along with body changes in pregnancy and the development of sperm in the male.

Outcome two concentrates on the breeding processes and selection of appropriate animals for breeding purposes. You will learn the importance of the aspects of breed selection and some of the systems used to ensure only the best animals are used for breeding.

Outcome three looks at problems relating to the breeding process. You will learn how some of these problems may be caused by human action whereas others may relate to the physical state, health or genetics of animals.

Outcome four looks at the postnatal care of both mother and neonates and some of the important aspects to consider to ensure survival of the young, in different situations.

When completed, the material covered in this Unit should be used as a useful guide to the successful instigation of the breeding process for a range of small animals.

There are likely to be two assessments under closed book conditions for Outcomes 1 and 3, and a report or case study for Outcomes 2 and 4.

There are opportunities to develop the written component of the *Communication* Core Skill at SCQF level 6 in this Unit.