

## ENVIRONMENTAL AND LAND-BASED STUDIES

### Unit 4: Animal management and care: nutrition, growth, breeding and handling



## Environmental and Land-based Studies

### Level 2 Unit 4: Animal management and care: nutrition, growth, breeding and handling

#### Sample scheme of work

This is an example of a scheme of work. You can adjust it or extract content to create a scheme of work to suit your delivery needs. It can also be adjusted by adding theory workshops to support learners who have/need additional learning time.

This unit is assessed through a centre set and marked assignment, which will be externally moderated.

<b>Total GLH</b>	60
<b>Delivery model</b>	Based on teaching three-hour sessions.
<b>Aim</b>	Learners will understand how the welfare and care of animals are managed and how these two may be affected by the purpose for which the animals are kept. They will learn where the legal obligations and responsibilities for welfare lie and how to handle a range of animals safely, appropriately and in line with the current legislative guidelines and codes of practice.
<b>Notes</b>	<p>This is a practical unit containing opportunities for learners to work directly with animals. Assessment needs to be implemented early in this unit.</p> <p>Each session should have some practical elements to ensure that learners are given the opportunity to achieve the assessment criteria and carry out parts of their animal care plans. Their plans will need to be evaluated regularly in order to implement any necessary changes.</p> <p>There should be an assessment plan so that students are aware of when they will be observed. Assessment of LO4 needs to be carried out throughout the delivery of this unit.</p>

Topic	Activities, assignments, assessments	LO and AC	PLTS	FS	GLH	Resources and other comments
<p><b>1</b> Animal unit</p>	<p>Introduce learners to the animal unit in which they will gain practical experience. Outline the health and safety requirements. This session should cover manual handling, COSHH assessments and waste disposal. Identify the tools learners will need to use. Demonstrate their purposes and how to use them safely.</p> <p>Using model animals, learners should practise handling and moving animals with the appropriate equipment. Then ask them to identify the risks present in the area in which the practical work will take place.</p> <p>Ask learners to complete a risk assessment for a set activity that they will carry out during their practical tasks.</p>	AC4a, b	TW1, 3, 4 IE3	SL1 W3	3	<p>Resources required: PPE, tools and equipment to handle animals, model animals and access to an animal unit.</p> <p>Links to Unit 2: Working in the environmental and land-based sector.</p>
<p><b>2</b> Manual handling, COSHH assessments and waste disposal</p>	<p>Discuss general health and safety at work.</p> <p>Ask learners to identify the correct methods to move a range of given objects.</p> <p>Give learners a range of workplace activities for specific situations. Ask them to state the required PPE for each situation and explain its purpose.</p> <p>Outline the general principles of COSHH and produce a list of substances that may be used within the sector that will be governed by COSHH. Explain what RIDDOR is and how it affects the workplace.</p> <p>For a series of given scenarios of accidents at work, ask learners to calculate the cost to the businesses of each.</p>	AC3a	CT1, 2, 4 IE3, 6	SL4 W1	3	<p>Resources required: SMART Board, COSHH forms, risk assessment forms, objects to view for the lifting task, samples of PPE and access to an animal unit.</p> <p>Links to Unit 2: Working in the environmental and land-based sector.</p>

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<b>3</b> Introduction to work on the animal unit and what daily care may be involved	This should be a practical session. Under supervision, learners will need to clean, feed and move animals. They must maintain the required care records by recording the activities they have undertaken.	AC4a–c	TW1–5 SM5		3	Resources required: PPE and access to an animal unit.
<b>4</b> Maintaining records of animal care	<p>Explain the need to maintain records of animal care. Learners must know what information is required and why it is important.</p> <p>Review the current records from the animal unit. As a group, identify how to complete these in detail, using appropriate language.</p> <p>Share samples of records used by other enterprises within the industry, such as farms, zoos and veterinary surgeries.</p> <p>Discuss what information learners feel should be requested when managing the care of animals.</p> <p>Working in pairs, ask learners to design a good practice care plan along with records to complete and monitor.</p>	AC5a, b	TW1, 2, 4 CT1, 3	SL2 W3	3	Resources required: access to records.

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<p><b>5</b> Introduction to basic animal health</p>	<p>Explain how the common signs of good and poor health can be recognised by looking at:</p> <ul style="list-style-type: none"> <li>• the skin and body covering (eg fur, feather, scales)</li> <li>• movement</li> <li>• appetite and water intake</li> <li>• the condition of the eyes, ears, nose and mouth</li> <li>• the appearance of urine and faeces</li> <li>• temperament</li> <li>• the signs for common diseases, parasites and disorders.</li> </ul> <p>Provide learners with two outlines of an animal. Learners should annotate the outlines, showing the signs of good health on one and poor health on the other.</p> <p>As a group, brainstorm husbandry techniques and routine preventive health treatments that can be used to maintain good health.</p> <p>Working in pairs, ask learners to a conduct a visual health check on a selected animal and complete health check records in sufficient detail to meet industry requirements.</p>	AC1c	TW1 IE1 CT1, 2	W2, 3	3	<p>Resources required: A4 paper with animal outline drawn on; multimedia images of examples of poor animal health.</p> <p>SMART Board</p> <p>Access to animals for health check; animal records; health check charts.</p>

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<b>6</b> Introduction to the assessment	<p>For the assignment learners must choose two species with different digestive systems. They will need to research the required daily care and start putting together a guide for routine care of these animals. The care plan must include:</p> <ul style="list-style-type: none"> <li>• details of how tasks should be carried out</li> <li>• supporting documents to record necessary information so that the well-being of the animals could be monitored effectively</li> <li>• a detailed explanation of good and poor health for these animals.</li> </ul> <p>Learners must ensure the five freedoms are maintained.</p>	AC5	SM2 CT1, 2 IE2, 4	IT W1, 2, 4–6 R1	3	
<b>7</b> Relationship between physical characteristics and diet	<p>In pairs, learners should outline how common physical characteristics of animals differ depending on their diet.</p> <p>Working in groups, ask learners to research feeding patterns and identify how the physical characteristics of these animals are designed to allow them to gather their food.</p> <p>For both of these activities, learners should look at different breeds of the same species to see if there is any variation in physical characteristics and feeding patterns.</p> <p>Ensure that each group chooses a different animal and that as a class the digestive systems outlined in the Principal Learning document are covered. Learners should present their findings to the class.</p> <p>The above activities could be tied to a feeding time on the animal unit so that learners can observe the differences in a range of animals.</p>	AC1a, b	IE4, 6 CT4 TW1, 2, 4, 5	SL2–4 Use ICT 1.1 –1.3 ICT 1.1, 2.1, 2.2	3	Resources required: pictures of the digestive system to use comparatively and skeletons to look at dental make up.

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<b>8</b> Digestive systems: anatomy	<p>Introduce the four digestive tracts: ruminants or polygastrics, simple-stomached animals, monogastric herbivores and avian.</p> <p>Ask learners to compare these four digestive systems and identify the differences. As a group, discuss the reasons for these differences.</p> <p>Recap activity: learners to label the four different digestive tracts.</p>	AC1b	CT2	SL1 W2	3	Resources required: virtual dissections, large anatomy posters, SMART Board, pictures of the digestive system to use comparatively and skeletons to look at dental make up.
<b>9</b> Digestive systems: physiology Assessment	<p>Discuss the functions of the mouth, stomach, small intestine and large intestine.</p> <p>Assessment: Working in pairs, ask learners to make a collage of the four digestive systems and annotate the functions of each.</p>	AC1b	TW1, 2 CT3	W2, 3 SL1	3	Resources required: paper and resources to make a collage of a digestive system.
<b>10</b> Feeding animals reared for commercial use	<p>This session will look at how commercial organisations feed animals in an efficient and cost-effective way.</p> <p>Arrange a visit to a piggery to view feeding methods and relate these to the animal's life cycle. Ensure learners see the farrowing crates, weaning pens and the dry sow house and take note of the different types of feed.</p> <p>After the visit, provide learners with scenarios for two other establishments and ask them to report back on the feeding methods used.</p>	AC2a	IE6 CT1, 2	SL1 W1, 4–6	3	Resources required: transport to visit, data sheets on feed programmes that learners will see.  Links to visit in Unit 1, week 12.

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11 Nutrition	<p>Introduce the five food groups and the roles they play in maintaining good health in animals.</p> <p>Working in groups, ask learners to identify how nutrients are received by animals reared for commercial use and those fed naturally, with reference to the four digestive systems.</p>	AC1a	CT2 TW1	SL1 W1 R1, 2	3	Resources required: SMART Board, handouts, books on natural feeding habits and packaging from commercial food.
12 Life cycles	<p>Outline the different stages in an animal's life cycle. Then, using a game for learners to do in pairs, ask them to identify how the nutritional requirements differ at each stage.</p> <p>Present the reasons why nutritional requirements change as the animal progresses through the life cycle.</p> <p>Using scenario cards, ask learners to select the appropriate feed for a range of animals.</p> <p>Follow with a quiz to recap the session.</p>	AC1a, c AC5a, b	CT1, 5	SL1	3	Resources required: scenario cards and types of feed.
13 Assessment	<p>Learners should continue with their work at the animal unit.</p> <p>Extend the time spent on the practical if necessary, so that learners can be confident in their use of tools.</p> <p>Learners should review and evaluate and make any necessary adjustments to their care plans.</p> <p>Using what they have learned about life cycles, ask learners to produce a report on the changes in feeding habits and nutritional requirements for the animals in their care plans.</p> <p>Explain how ELB businesses manage and meet these requirements.</p>	AC4a–c, AC5b	TW1 SM2, 3, 5 CT5, 6	SL1	3	Resources required: learners to work on the animal unit.

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<p><b>14</b> Commercial food production</p>	<p>Arrange a visit to a food mill, such as Dobson and Horrell. Ask the representative to talk about how new diets are devised/planned. Ensure learners see the steps taken in the production of a bag of food and the range of food types produced.</p> <p>Lead a discussion on the external pressures that could affect the mill's production.</p> <p>Ask learners to produce a report on one job role within either the piggery (from session 10) or the mill. The report should explain the importance of that specific job within the production of commercial food.</p>	AC2a	CT2	W1, 4–6 SL1	3	<p>Links to Unit 2: Working in the environmental and land-based sector.</p> <p>Links to the visit in Unit 3.</p>
<p><b>15</b> Introduction to breeding</p>	<p>Discuss the methods of breeding that could be used when breeding for commercial purposes, such as natural, artificial insemination and embryo transfer.</p> <p>Multimedia programmes, such as video/DVD, should be used to support the discussion.</p> <p>Devise a fill-in-the-gaps handout to check learners' understanding.</p> <p>Ask learners to choose two animals; one must be for use as a pet and one must be for production purposes. For each animal, learners should write a list of characteristics they would be looking for and why. Compare how the selection criteria of breeding stock differ according to the purpose of the offspring.</p> <p>Arrange a visit to an establishment to view artificial insemination if this was not covered at the piggery.</p>	AC2b	CT1, 2	SL1 W1	3	<p>Links to genetics in Unit 3: Plant management and care: feeding, growing, breeding, selecting and handling.</p>

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<p><b>16</b> Genetic breeding</p>	<p>Define the following terminology: phenotypes, genotypes and dominant and recessive genes.</p> <p>Using the Punnett square, demonstrate how to identify the likely colouration of an offspring from a simple monohybrid cross.</p> <p>Explain F1 offspring ratios.</p> <p>Using a DNA helix, ask learners to complete the movement that occurs in the early genetic make-up of an embryo.</p> <p>Follow with a discussion on line breeding and similar practices and the ethical issues raised by such breeding.</p> <p>Explain pedigree trees.</p>	AC2b	IE1	SL1 W2	3	<p>Resources required: SMART Board.</p> <p>Links to genetics in Unit 3: Plant management and care: feeding, growing, breeding, selecting and handling.</p>
<p><b>17</b> Five freedoms and animal welfare legislation and animal transport legislation</p>	<p>Recap the five freedoms, and then discuss how enterprises ensure that these are met and the consequences of not meeting them.</p> <p>Share images of cases where one of the freedoms has not been maintained and discuss further implications of this. Images should cover a range of enterprises within the sector.</p> <p>Divide the class into groups. Give each group a section of legislation relating to animal welfare. Learners will then prepare short presentations on legislation for the final session.</p>	AC3b	TW1, 2, 4 IE3, 6	Use ICT 1.1–1.3 DPC ICT 1.1, 1.2, 1.5, 2.2, 3.2	3	<p>Resources required: ICT facilities.</p>

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<b>18</b> Outside agencies	In this session learners will appreciate the role that outside agencies play in the welfare of animals.  Arrange for guest speakers from a vets and Defra.  Ask learners to produce a poster that explains the role of Defra. Learners should then investigate and report on one other agency involved in supporting animal welfare.	AC1c AC3a AC5a	TW1	SL1 W1, 3 Use ICT 1.1–1.3	3	Brief the guest speaker so that the required learning outcomes are covered.
<b>19</b> Animal care	Arrange a visit to a zoo to see care feeding and breeding programmes in place.  Evaluate the success of these care plans and make suggestions for any necessary changes.	AC5a–c		SL1	3	Coordinate with the zoo education staff to ensure that tours and talks cover the learning outcomes appropriately.
<b>20</b> Assessment	Learners should review and evaluate their care plans.	AC5c	SM3 IE6	W2, 4–6	3	Resources required: computers.