



Level 3 Advanced Technical Certificate in Animal Management (0172-30)

January 2018 Version 1.4

Qualification Handbook

Qualification at a glance

Industry area	Animal Care
City & Guilds qualification number	0172-30
Age group	16-19 (Key stage 5), 19+
Entry requirements	Centres must ensure that any pre-requisites stated in the <i>What is this qualification about?</i> section are met.
Assessment	<p>To gain this qualification, candidates must successfully achieve the following assessments:</p> <ul style="list-style-type: none">• One externally set, externally moderated assignment• One externally set, externally marked exam, sat under examination conditions• One portfolio of evidence• One unit assignment• Optional unit assessments as required
Additional requirements to gain this qualification	Employer involvement in the delivery and/or assessment of this qualification is essential for all candidates and will be externally quality assured.
Grading	<p>This qualification is graded Pass/Merit/Distinction/Distinction*</p> <p>For more information on grading, please see Section 7: Grading.</p>
Approvals	These qualifications require full centre and qualification approval
Support materials	Sample assessments Guidance for delivery Guidance on use of marking grids
Registration and certification	Registration and certification of this qualification is through the Walled Garden, and is subject to end dates.
External quality assurance	This qualification is externally quality assured by City & Guilds, and its internally marked assignments are subject to external moderation. There is no direct claim status available for this qualification.

Title and level	Size (GLH)	TQT	City & Guilds qualification number	Ofqual accreditation number
Level 3 Advanced Technical Certificate in Animal Management	360	600	0172-30	601/7518/7

Version and date	Change detail	Section
1.1 May 2016	Small typographical errors	Throughout
	TQT added for qualifications	1. Introduction
	Assessment component titles amended	
	Employer involvement guidance updated throughout	4. Employer involvement
	Summary of assessment methods and conditions	5. Assessment
	Moderation and standardisation of assessment updated throughout	6. Moderation and standardisation of assessment
	Awarding individual assessments	7. Grading
	Awarding grades and reporting results	
1.2 December 2016	Enquiries about results	8. Administration
	Re-sits and shelf-life of assessment results Malpractice Access arrangements and special consideration	
1.3 July 2017	301 and 306 assessments changed to centre marked assignment. Test specs and weighting updated	1. Introduction 5. Assessment
	307 updated	Units
1.3 July 2017	Unit 301 Aim updated	Units
	Addition of the examination paper based module numbers	1. Introduction – Assessment requirements and employer involvement 5. Assessment 5. Assessment – exam Specification 7. Grading – Awarding grades and reporting results
	Removal of AO 6-8 from Synoptic Assignments and the readjusted approximate weightings (only if applicable)	5. Assessment – Assessment Objectives

	Revised Exam Specification, Exam Duration and AO weightings	5. Assessment – Exam Specification
	Addition of Provisional Grade Boundaries for the Synoptic Assignment	7. Grading
	Branding Changes	City and Guilds Logo
1.4 January 2018	Amendment to summary of assessment methods and conditions table	5. Assessment

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1 Introduction

What is this qualification about?

The following purpose statement relates to the **Level 3 Advanced Technical Certificate in Animal Management**.

Area	Description
OVERVIEW	
Who is this qualification for?	This qualification is for you if you are 16 years or older and want to work with animals. It provides you with the core practical skills and knowledge which will equip you to seek employment or further learning and training within the animal care and management industries.
What does this qualification cover?	<p>This qualification enables you to gain the core skills and knowledge required for working with and caring for animals. Good practical skills are really important when looking after animals. You will learn how to work safely around animals, be responsible for the planning and carrying out animal husbandry health and handling, and feeding and nutrition. You will also learn about animal behaviour, animal breeds and welfare.</p> <p>Centres and providers work with local employers who will contribute to the knowledge and delivery of training. Employers will provide demonstrations and talks on the industry and where possible work placements will also be provided by the employers. This practically based training is ideal preparation for gaining employment in the animal care and management industry or specialist further study.</p>
WHAT COULD THIS QUALIFICATION LEAD TO?	
Will the qualification lead to employment, and if so, in which job role and at what level?	<p>You might progress into work as an:</p> <ul style="list-style-type: none">• Animal care worker• Animal care assistant• Maintenance worker in an animal care setting• Apprentice in an animal care business.
Why choose this qualification over similar qualifications?	<p>This qualification is typically delivered alongside other qualifications such as GCSEs, AS or A Levels. It provides an introduction to the core skills and knowledge required to enter employment in the animal care and management industries and opens first steps to a career in working with animals. Working with animals requires hard work and dedication and these core skills could set you off on your career.</p> <p>City & Guilds offers four sizes of Level 3 qualification in Animal Management: Certificate, Diploma (540), Extended Diploma (720) and Extended Diploma (1080). You would take the Certificate if you want an introductory qualification to develop some of the core skills and knowledge</p>

required by employers in the animal care and management industries. The Certificate is likely to be taken alongside other programmes such as GCSEs or AS Levels over a one-year course of study.

You would take the Diploma (540) if you want a qualification to develop some of the skills and knowledge that can lead to specific roles required by employers in the animal care and management industries. The Diploma is likely to be taken alongside other programmes such as GCSEs or AS Levels over a one-year course of study.

You would take the Extended Diploma (720) if you want to specialise, to develop most of the skills and knowledge required by employers in the animal care and management industries. The Extended Diploma (720) is likely to be taken as part of a full-time two year programme of study, or alongside other qualifications such as AS or A Levels over a longer period of time.

You would take the Extended Diploma (1080) if you want to specialise and develop the skills and knowledge required by employers in the animal care and management industries. The Extended Diploma (1080) is likely to be taken as a full-time programme of study over two years. By taking this large qualification, you will be exposed to, and have the opportunity to gain experience in, the wider animal care and management sector. This will enable you to progress to a diverse range of employment opportunities, as you will have gained hands-on experience over 2 years, which employers really value.

Will the qualification lead to further learning?

You may wish to progress onto an Advanced Apprenticeship in Animal Management, which allows you to combine working in a kennel or cattery, pet store, welfare centre or in a similar business, and typically attending one day a week at college or with a training provider.

You may wish to progress onto further learning within a Higher Education Institution. You could study a course such as an Animal Management Foundation Degree

Qualification structure

For the **Level 3 Advanced Technical Certificate in Animal Management** the teaching programme must cover the content detailed in the structure below:

Unit number	Unit title	GLH
Mandatory		
301	Principles of Health and Safety	30
302	Undertake and Review Work Related Experience in the Land-base Industries	30
303	Animal Health and Husbandry	60
304	Animal Feeding and Nutrition	60
305	Animal Behaviour and Communication	60
307	Animal Welfare and Breeding	60
Optional – Learners must be taught at least 60 GLH from units 306, 362 or 364		
306	Biological Systems of Animals	60
362	Undertake Estate Skills	60
364	Business Management in the Land-Based Sector	60

Total qualification time (TQT)

Total Qualification Time (TQT) is the total amount of time, in hours, expected to be spent by a Learner to achieve a qualification. It includes both guided learning hours (which are listed separately) and hours spent in preparation, study and assessment.

Title and level	GLH	TQT
Level 3 Advanced Technical Certificate in Animal Management	360	600

Assessment requirements and employer involvement

To achieve the **Level 3 Advanced Technical Certificate in Animal Management** candidates must successfully complete **all** the mandatory assessment components **as well as** the optional assessment components for their chosen optional units.

Component number	Title
Mandatory	
030	Level 3 Animal Management - Synoptic assignment (1)
031 or 531	Level 3 Animal Management - Theory exam (1)
301	Level 3 Principles of health and safety – Theory exam
302	Level 3 Undertake and review work related experience in the land-based industries - Portfolio
Optional	
306	Level 3 Biological systems of animals – Assignment
362	Level 3 Undertake estate skills - Assignment
364	Level 3 Business management in the Land-Based sector - Assignment

In addition, candidates **must** achieve the mandatory employer involvement requirement for this qualification **before** they can be awarded a qualification grade. For more information, please see guidance in *Section 4: Employer involvement*.

Employer involvement

Component number	Title
Mandatory	
830	Employer involvement

2 Centre requirements

Approval

New centres will need to gain centre approval. Existing centres who wish to offer this qualification must go through City & Guilds' **full** Qualification Approval Process. There is no fast track approval for this qualification. Please refer to the City & Guilds website for further information on the approval process: www.cityandguilds.com

Resource requirements

Centre staff should familiarise themselves with the structure, content and assessment requirements of the qualification before designing a course programme.

Centre staffing

Staff delivering these qualifications must be able to demonstrate that they meet the following requirements:

- be technically competent in the areas in which they are delivering
- be able to deliver across the breadth and depth of the content of the qualification being taught
- have recent relevant teaching and assessment experience in the specific area they will be teaching, or be working towards this
- demonstrate continuing CPD.

Physical resources

Centres must be able to demonstrate that they have access to the equipment and technical resources required to deliver this qualification and its assessment.

Centres must have access to a range of animal species and have sufficient animals so that animal welfare standards are kept. Assessment of technical skills will be carried out against **both** small and large animals.

Internal Quality Assurance

Internal quality assurance is key to ensuring accuracy and consistency of tutors and markers. Internal Quality Assurers (IQAs) monitor the work of all tutors involved with a qualification to ensure they are applying standards consistently throughout assessment activities. IQAs must have, and maintain, an appropriate level of technical competence and be qualified to make both marking and quality assurance decisions through a teaching qualification or recent, relevant experience.

Learner entry requirements

Centres must ensure that all learners have the opportunity to gain the qualification through appropriate study and training, and that any prerequisites stated in the *What is this qualification about?* section are met when registering on this qualification.

Age restrictions

This qualification is approved for learners aged 16 – 19, 19+.

3 Delivering technical qualifications

Initial assessment and induction

An initial assessment of each learner should be made before the start of their programme to identify:

- if the learner has any specific learning or training needs,
- support and guidance they may need when working towards their qualification,
- the appropriate type and level of qualification.

We recommend that centres provide an introduction so that learners fully understand the requirements of the qualification, their responsibilities as a learner, and the responsibilities of the centre. This information can be recorded on a learning contract.

Employer involvement

Employer involvement is essential to maximise the value of each learner's experience. Centres are required to involve employers in the delivery of technical qualifications at Key Stage 5 and/or their assessment, for every learner. This must be in place or planned before delivery programmes begin in order to gain qualification approval. See *Section 4: Employer involvement* for more detail.

Support materials

The following resources are available for this qualification:

Description	How to access
Sample assessments	Available on the qualification pages on the City & Guilds Website: www.cityandguilds.com
Technical Qualifications: Guide to Teaching, Learning and Assessment	Available on the City and Guild website: https://www.cityandguilds.com/techbac/technical-qualifications/resources-and-support#teaching
Technical Qualifications: Marking and Moderation Guide	Available on the City and Guild website: https://www.cityandguilds.com/techbac/technical-qualifications/resources-and-support#teaching

4 Employer involvement

Employer involvement is a formal component of Key Stage 5 Technical qualifications. It does not contribute to the overall qualification grading, but is a mandatory requirement that all learners must meet. As such it is subject to external quality assurance by City & Guilds.

Department for Education (DfE) requirements state:

Employer involvement in the delivery and/or assessment of technical qualifications provides a clear 'line of sight' to work, enriches learning, raises the credibility of the qualification in the eyes of employers, parents and students and furthers collaboration between the learning and skills sector and industry.

[Technical qualifications] must:

- *require all students to undertake meaningful activity involving employers during their study; and*
- *be governed by quality assurance procedures run by the awarding organisation to confirm that education providers have secured employer involvement for every student.*

Extract from: **Vocational qualifications for 16 to 19 year olds, 2017 and 2018 performance tables: technical guidance for awarding organisations, paragraphs 89-90**

City & Guilds will provide support, guidance and quality assurance of employer involvement.

Qualification approval

To be approved to offer City & Guilds technicals, centres must provide an Employer Involvement planner and tracker showing how every learner will be able to experience meaningful employer involvement, and from where sufficient and suitable employer representatives are expected to be sourced.

Centres must include in their planner a sufficient range of activities throughout the learning programme that provide a range of employer interactions for learners. Centres must also plan contingencies for learners who may be absent for employer involvement activities, so that they are not disadvantaged.

As part of the approval process, City & Guilds will review this planner and tracker.

Centres which cannot show sufficient commitment from employers and/or a credible planner and tracker will be given an action for improvement with a realistic timescale for completion. **Approval will not be given** if employer involvement cannot be assured either at the start of the qualification, or through an appropriate plan of action to address this requirement before the learner is certificated.

Monitoring and reporting learner engagement

Employer involvement is a formal component of this qualification and is subject to quality assurance monitoring. Centres must record evidence that demonstrates that each learner has been involved in meaningful employer based activities against the mandatory content before claiming the employer involvement component for learners.

Centres must record the range and type of employer involvement each learner has experienced and submit confirmation that all learners have met the requirements to City & Guilds. If a centre cannot provide evidence that learners have met the requirements to achieve the component, then the learner will not be able to achieve the overall Technical Qualification.

Types of involvement

Centres should note that to be eligible, employer involvement activities **must** relate to one or more elements of the mandatory content of this qualification. This does not mean that employer involvement in the optional units is not valuable, and centres are encouraged to consider this wherever appropriate.

As the aim of employer involvement is to enrich learning and to give learners a taste of the expectations of employers in the industry area they are studying, centres are encouraged to work creatively with local employers.

Employers can identify the areas of skills and knowledge in their particular industry that they would wish to see emphasised for learners who may apply to work with them in the future. Centres and employers can then establish the type of input, and which employer representative might be able to best support these aims.

To be of most benefit this must add to, rather than replace the centre's programme of learning. Some examples of meaningful employer involvement are listed below. Employer involvement not related to the mandatory element of the qualification, although valuable in other ways, does not count towards this element of the qualification.

The DfE has provided the following examples of what does and does not count as meaningful employer involvement, as follows^{1,2}:

The following activities meet the requirement for meaningful employer involvement:

- *students undertake structured work-experience or work-placements that develop skills and knowledge relevant to the qualification*³;
- *students undertake project(s), exercises(s) and/or assessments/examination(s) set with input from industry practitioner(s);*
- *students take one or more units delivered or co-delivered by an industry practitioner(s). This could take the form of master classes or guest lectures;*
- *industry practitioners operate as 'expert witnesses' that contribute to the assessment of a student's work or practice, operating within a specified assessment framework. This may be a specific project(s), exercise(s) or examination(s), or all assessments for a qualification.*

In all cases participating industry practitioners and employers must be relevant to the industry sector or occupation/occupational group to which the qualification relates.

The following activities, whilst valuable, do not meet the requirement for meaningful employer involvement:

- *employers' or industry practitioners' input to the initial design and content of a qualification;*

¹ As extracted from: Vocational qualifications for 16 to 19 year olds
2017 and 2018 performance tables: technical guidance for awarding organisations

²This list has been informed by a call for examples of good practice in employer involvement in the delivery and assessment of technical qualifications - **Employer involvement in the delivery and assessment of vocational qualifications**

³ **DfE work experience guidance**

- employers hosting visits, providing premises, facilities or equipment;
- employers or industry practitioners providing talks or contributing to delivery on employability, general careers advice, CV writing, interview training etc;
- student attendance at career fairs, events or other networking opportunities;
- simulated or provider-based working environments eg hairdressing salons, florists, restaurants, travel agents, small manufacturing units, car servicing facilities;
- employers providing students with job references.

Types of evidence

For each employer involvement activity, centres are required to provide evidence of which learners undertook it, e.g. a candidate attendance register. The types of additional evidence required to support a claim for this component will vary depending on the nature of the involvement. Eg for a guest lecture it is expected that a synopsis of the lecture and register would be taken which each learner and the guest speaker will have signed; expert witnesses will be identified and will have signed the relevant assessment paperwork for each learner they have been involved in assessing; evidence of contribution from employers to the development of locally set or adapted assignments.

Quality assurance process

As the employer involvement component is a requirement for achieving the KS5 Technical qualifications, it is subject to external quality assurance by City & Guilds at the approval stage and when centres wish to claim certification for learners.

Evidence will be validated by City & Guilds before learners can achieve the employer Involvement component. Where employer involvement is not judged to be sufficient, certificates cannot be claimed for learners.

Sufficiency of involvement for each learner

It is expected that the centre will plan a range of activities that provide sufficient opportunities for each learner to interact directly with a range of individuals employed in the related industry. Centres must also provide contingencies for learners who may be absent for part of their teaching, so they are not disadvantaged. Any absence that results in a learner missing arranged activities must be documented. Where learners are unable to undertake all employer involvement activities due to temporary illness, temporary injury or other indisposition, centres should contact City & Guilds for further guidance.

Live involvement

Learners will gain most benefit from direct interaction with employers and/or their staff; however the use of technology (eg the use of live webinars) is encouraged to maximise the range of interactions. Where learners are able to interact in real time with employers, including through the use of technology, this will be classed as 'live involvement'.

It is considered good practice to record learning activities, where possible, to allow learners to revisit their experience and to provide a contingency for absent learners. This is not classed as live involvement however, and any involvement of this type for a learner must be identified as contingency.

Timing

A learner who has not met the minimum requirements cannot be awarded the component, and will therefore not achieve the qualification. It is therefore important, that centres give consideration to scheduling employer involvement activities, and that enough time is allotted throughout delivery and assessment of the qualification to ensure that requirements are fully met.

5 Assessment

Summary of assessment methods and conditions

Component numbers	Assessment method	Description and conditions
030	Synoptic assignment	<p>The synoptic assignment is externally set, internally marked and externally moderated. The assignment requires candidates to identify and use effectively in an integrated way an appropriate selection of skills, techniques, concepts, theories, and knowledge from across the content area. Candidates will be judged against the assessment objectives.</p> <p>Assignments will be released to centres as per dates indicated in the Assessment and Examination timetable published on our website.</p> <p>Where seasonality is a factor in the timing of the assignment the assignment will be released early to ensure that candidates can take the assignment to fit in with the seasonal requirements.</p> <p>Centres will be required to maintain the security of all live assessment materials. Assignments will be password protected and released to centres through a secure method.</p> <p>There will be one opportunity within each academic year to sit the assignment. Candidates who fail the assignment will have one re-sit opportunity. The re-sit opportunity will be in the next academic year, and will be the assignment set for that academic year once released to centres. If the re-sit is failed, the candidate will fail the qualification.</p> <p>Please note that for externally set assignments City & Guilds provides guidance and support to centres on the marking and moderation process.</p>

031 or 531	Externally marked exam	<p>The exam is externally set and externally marked, and will be taken online through City & Guilds' computer-based testing platform.</p> <p>The exam is designed to assess the candidate's depth and breadth of understanding across content in the qualification at the end of the period of learning, using a range of question types and will be sat under invigilated examination conditions. See JCQ requirements for details: http://www.jcq.org.uk/exams-office/ice---instructions-for-conducting-examinations</p> <p>The exam specification shows the coverage of the exam across the qualification content.</p> <p>Candidates who fail the exam at the first sitting will have one opportunity to re-sit. If the re-sit is failed the candidate will fail the qualification. For exam dates, please refer to the Assessment and Examination timetable.</p>
301	Unit assignment	<p>The unit assignments are externally set, internally marked and externally moderated. The assignments require candidates to identify and use effectively skills, knowledge and understanding from across the unit content area. Candidates will be judged against the unit grading criteria</p> <p>This assessment is available on our website. The assessment can be taken at any point during the academic year, but evidence must be submitted on to the Moderation Portal by the deadline in Assessment and Examination timetable, published on our website.</p> <p>Centres will be required to maintain the security of all live assessment materials. Assessments will be password protected and released to centres through a secure method.</p> <p>There is no re-sit limit for these assessment. If a learner fails an assignment they can re-sit a different version. Assessors should allow seven days before resubmission or reassessment.</p>

Optional units , 306 362 364	Unit Assignment	<p>The unit assignments are externally set, internally marked and externally moderated. The assignments require candidates to identify and use effectively skills, knowledge and understanding from across the unit content area. Candidates will be judged against the unit grading criteria</p> <p>Assignments are available on our website. The assignments can be taken at any point during the academic year, but evidence must be submitted on to the Moderation Portal by the deadline in Assessment and Examination timetable, published on our website.</p> <p>Centres will be required to maintain the security of all live assessment materials. Assignments will be password protected and released to centres through a secure method.</p> <p>There is no re-sit limit for these assignments. If a learner fails an assignment they can re-sit a different version. Assessors should allow seven days before resubmission or reassessment.</p>
302	Portfolio	<p>This unit will be assessed by a portfolio of evidence, externally moderated by City & Guilds.</p>

What is synoptic assessment?

Technical qualifications are based around the development of a toolkit of knowledge, understanding and skills that an individual needs in order to have the capability to work in a particular industry or occupational area. Individuals in all technical areas are expected to be able to apply their knowledge, understanding and skills in decision making to solve problems and achieve given outcomes independently and confidently.

City & Guilds technical qualifications require candidates to draw together their learning from across the qualification to solve problems or achieve specific outcomes by explicitly assessing this through the synoptic assignment component.

In this externally set, internally marked and externally moderated assessment the focus is on bringing together, selecting and applying learning from across the qualification rather than demonstrating achievement against units or subsets of the qualification content. The candidate will be given an appropriately levelled, substantial, occupationally relevant problem to solve or outcome to achieve. For example this might be in the form of a briefing from a client, leaving the candidate with the scope to select and carry out the processes required to achieve the client's wishes, as they would in the workplace.

Candidates will be marked against assessment objectives (AOs) such as their breadth and accuracy of knowledge, understanding of concepts, and the quality of their technical skills as well as their ability to use what they have learned in an integrated way to achieve a considered and high quality outcome.

How the assignment is synoptic for this qualification

The typical assignment brief could be to carry out husbandry tasks for different animal species and at particular life stages and research and report on how these link to animal welfare. This will require the candidate to use husbandry and handling skills and apply their knowledge and understanding of how the different life stage of an animal effect diet, accommodation and health status and following animal care industry standards. They will need to draw on their skills and knowledge from across the qualification to complete animal management records.

External exam for stretch, challenge and integration

The external assessment will draw from across the mandatory content of the qualification, using a range of shorter questions to confirm breadth of knowledge and understanding. Extended response questions are included, giving candidates the opportunity to demonstrate higher level understanding and integration through discussion, analysis and evaluation, and ensuring the assessment can differentiate between 'just able' and higher achieving candidates.

Optional unit assessments and integration into the synoptic qualification content

While the mandatory units for this qualification provide the main skills and knowledge required to work in animal care, the optional units provided give centres flexibility when devising programmes to meet local employment needs, where the purpose of the qualification demands this.

The assessments for the optional units will require that the candidate has experienced the full breadth of mandatory learning of the qualification in order to better demonstrate the rounded performance expected at higher grades.

Assessment objectives

The assessments for this qualification are set against a set of assessment objectives (AOs) which are used across all City & Guilds Technicals to promote consistency among qualifications of a similar purpose. They are designed to allow judgement of the candidate to be made across a number of different categories of performance.

Each assessment for the qualification has been allocated a set number of marks against these AOs based on weightings recommended by stakeholders of the qualification. This mark allocation remains the same for all versions of the assessments, ensuring consistency across assessment versions and over time.

The following table explains all AOs in detail, including weightings for the synoptic assignments. In some cases, due to the nature of a qualification's content, it is not appropriate to award marks for some AOs. Where this is the case these have been marked as N/A. Weightings for exams (AOs 1, 2 and 4 only) can be found with the exam specification.

Assessment objective	Level 3 Technical Certificate in Animal Management Typical expected evidence of knowledge, understanding and skills	Approximate weighting
AO1 Recalls knowledge from across the breadth of the qualification.	Relevant legislation, signs of health, diseases and disorders, animal accommodation, risk assessments, husbandry and breeding.	20%
AO2 Demonstrates understanding of concepts, theories and processes from across the breadth of the qualification.	Animal pathogens and preventative treatments, animal welfare, animal behaviour, nutrition and feeding requirements and breeding strategies.	25%
AO3 Demonstrates technical skills from across the breadth of the qualification.	Calculating animal feed rations, animal handling, accommodation maintenance, health checks, and husbandry skills.	25%
AO4 Applies knowledge, understanding and skills from across the breadth of the qualification in an integrated and holistic way to achieve specified purposes.	Bringing together all knowledge and research, evaluation of management plans, links to animal welfare.	20%
AO5 Demonstrates perseverance in achieving high standards and attention to detail while showing an understanding of wider impact of their actions.	Justification and suggestions of areas for improvements, links between husbandry, welfare needs and behaviour and reports.	10%

Exam specifications

AO weightings per exam

AO	Exam 031 or 531 weighting (approx. %)	Exam 301 weighting (approx. %)	Exam 306 weighting (approx. %)
AO1 Recalls knowledge from across the breadth of the qualification.	25	70	30
AO2 Demonstrates understanding of concepts, theories and processes from across the breadth of the qualification.	55	30	70
AO4 Applies knowledge, understanding and skills from across the breadth of the qualification in an integrated and holistic way to achieve specified purposes.	20	N/A	N/A

The way the exam covers the content of the qualification is laid out in the table below:

Assessment type: Examiner marked, written exam, delivered online or paper based *

Assessment conditions: Invigilated examination conditions

Grading: X/P/M/D

Synoptic written exam 031/531	Duration: 2 hours		
Unit		Number of marks	%
303 Animal Health and Husbandry	LO1 Recognise indicators of health in animals	17	28
	LO2 Understand common disease and disorders, their treatment and prevention		
	LO4 Recognise how to deliver and record basic animal treatments		
304 Animal Feeding and Nutrition	LO1 Understand the basics of nutrition	16	27
	LO2 Understand nutritional values and properties of different food types		
	LO3 Understand the feeding requirements of animals at different life stages		
	LO4 Plan, monitor, record and evaluate diets and feeding regimes for animals		

305 Animal Behaviour and Communication	LO1 Understand behaviour patterns in animals	15	25
	LO3 Understand the factors influencing behaviour		
	LO4 Understand social behaviour and animal communication		
N/A	Integration across the units	12	20
Total		60	100

*These exams are sat under invigilated examination conditions, as defined by the JCQ:
<http://www.jcq.org.uk/exams-office/ice---instructions-for-conducting-examinations>.

*Entry for exams can be made through the City & Guilds Walled Garden.

6 Moderation and standardisation of assessment

City & Guilds' externally set assignments for technical qualifications are designed to draw from across the qualifications' content, and to contribute a significant proportion towards the learner's final qualification grade. They are subject to a rigorous external quality assurance process known as external moderation. This process is outlined below. For more detailed information, please refer to 'Marking and moderation - Technicals centre guidance' available to download on the City & Guilds website.

Supervision and authentication of internally assessed work

The Head of Centre is responsible for ensuring that internally assessed work is conducted in accordance with City & Guilds' requirements.

City & Guilds requires both tutors and candidates to sign declarations of authenticity. If the tutor is unable to sign the authentication statement for a particular candidate, then the candidate's work cannot be accepted for assessment.

Internal standardisation

For internally marked work⁴ the centre is required to conduct internal standardisation to ensure that all work at the centre has been marked to the same standard. It is the Internal Quality Assurer's (IQA's) responsibility to ensure that standardisation has taken place, and that the training includes the use of reference and archive materials such as work from previous years as appropriate.

Provision for reworking evidence after submission for marking by the tutor

It is expected that in many cases a candidate who is struggling with a specific piece of work may themselves choose to restart and rectify the situation during their normal allocated time, and before it gets to the stage of it being handed in for final marking by the tutor.

In exceptional circumstances however, where a candidate has completed the assignment in the required timescales, and has handed it in for marking by the tutor but is judged to have significantly underperformed, may be allowed to rework or supplement their original evidence for remarking prior to submission for moderation. For this to be allowed, the centre must be confident that the candidate will be able to improve their performance without additional feedback from their tutor and within the required timescales ie the candidate has shown they can perform sufficiently better previously in formative assessments.

The reworked and/or supplemented original evidence must be remarked by the tutor in advance of the original moderation deadline and the moderator informed of any candidates who have been allowed to resubmit evidence.

The process must be managed through the IQA. The justification for allowing a resubmission should be recorded and made available on request. The use of this provision will be monitored by City & Guilds.

⁴ For any internally assessed optional unit assignments, the same process must be followed where assessors must standardise their interpretation of the assessment and grading criteria.

Internal appeal

Centres must have an internal process in place for candidates to appeal the marking of internally marked components, ie the synoptic assignment and any optional unit assignments. This must take place before the submission of marks for moderation. The internal process must include candidates being informed of the marks (or grades) the centre has given for internally assessed components, as they will need these to make the decision about whether or not to appeal.

Centres cannot appeal the outcome of moderation for individual candidates, only the moderation process itself. A request for a review of the moderation process should be made to **appeals@cityandguilds.com**.

Moderation

Moderation is the process where external markers are standardised to a national standard in order to review centre marking of internally marked assessments. These markers are referred to as 'moderators'. Moderators will mark a representative sample of 'candidate work' from every centre. Their marks act as a benchmark to inform City & Guilds whether centre marking is in line with City & Guilds' standard.

Where moderation shows that the centre is applying the marking criteria correctly, centre marks for the whole cohort will be accepted.

Where moderation shows that the centre is either consistently too lenient or consistently too harsh in comparison to the national standard, an appropriate adjustment will be made to the marks of the whole cohort, retaining the centre's rank ordering.

Where centre application of the marking criteria is inconsistent, an appropriate adjustment for the whole cohort may not be possible on the basis of the sample of candidate work. In these instances a complete remark of the candidate work may be necessary. This may be carried out by the centre based on feedback provided by the moderator, or carried out by the moderator directly.

Moderation applies to all internally marked assignments. Following standardisation and marking, the centre submits all marks and candidate work to City & Guilds via the moderation platform. The deadline for submission of evidence will be available on Walled Garden. See the *Marking and moderation - Technicals Centre Guidance* document for full details of the requirements and process.

In most cases candidate work will be submitted directly to the moderator for moderation, this includes written work, photographic and pictorial evidence, or video and audio evidence. For some qualifications there will be a requirement for moderators to visit centres to observe practical assessments being undertaken. This will be for qualifications where the assessment of essential learner skills can only be demonstrated through live observation. The purpose of these visits is to ensure that the centre is assessing the practical skills to the required standards, and to provide the moderators with additional evidence to be used during moderation. These visits will be planned in advance with the centre for all relevant qualifications.

Post-moderation procedures

Once the moderation process has been completed, the confirmed marks for the cohort are provided to the centre along with feedback from the moderator on the standard of marking at the centre, highlighting areas of good practice, and potential areas for improvement. This will inform future marking and internal standardisation activities.

City & Guilds will then carry out awarding, the process by which grade boundaries are set with reference to the candidate evidence available on the platform.

Centres retaining evidence

Centres must retain assessment records for each candidate for a minimum of three years. To help prevent plagiarism or unfair advantage in future versions, candidate work may not be returned to candidates. Samples may however be retained by the centre as examples for future standardisation of marking.

7 Grading

Awarding individual assessments

Individual assessments will be graded, by City & Guilds, as pass/merit/distinction where relevant. The grade boundaries for pass and distinction for each assessment will be set through a process of professional judgement by technical experts. Merit will usually be set at the midpoint between pass and distinction. The grade descriptors for pass and distinction, and other relevant information (eg archived samples of candidate work and statistical evidence) will be used to determine the mark at which candidate performance in the assessment best aligns with the grade descriptor in the context of the qualification's purpose. Boundaries will be set for each version of each assessment to take into account relative difficulty.

Please note that as the Merit grade will usually be set at the arithmetical midpoint between pass and distinction, there are no descriptors for the Merit grade for the qualification overall.

Grade descriptors

To achieve a pass, a candidate will be able to

- Demonstrate the knowledge and understanding required to work in the occupational area, its principles, practices and legislation.
- Describe some of the main factors impacting on the occupation to show good understanding of how work tasks are shaped by the broader social, environmental and business environment it operates within.
- Use the technical industry specific terminology used in the industry accurately.
- Demonstrate the application of relevant theory and understanding to solve non-routine problems.
- Interpret a brief for complex work related tasks, identifying the key aspects, and showing a secure understanding of the application of concepts to specific work related tasks.
- Carry out planning which shows an ability to identify and analyse the relevant information in the brief and use knowledge and understanding from across the qualification (including complex technical information) to interpret what a fit for purpose outcome would be and develop a plausible plan to achieve it.
- Achieve an outcome which successfully meets the key requirements of the brief.
- Identify and reflect on the most obvious measures of success for the task and evaluate how successful they have been in meeting the intentions of the plan.
- Work safely throughout, independently carrying out tasks and procedures, and having some confidence in attempting the more complex tasks.

To achieve a distinction, a candidate will be able to

- Demonstrate the excellent knowledge and understanding required to work to a high level in the occupational area, its principles, practices and legislation.
- Analyse the impact of different factors on the occupation to show deep understanding of how work tasks are shaped by the broader social, environmental, and business environment it operates within.
- Demonstrate the application of relevant theory and understanding to provide efficient and effective solutions to complex and non-routine problems.
- Analyse the brief in detail, showing confident understanding of concepts and themes from across the qualification content, bringing these together to develop a clear and stretching plan that would credibly achieve an outcome that is highly fit for purpose.
- Achieve an outcome which shows an attention to detail in its planning, development and completion, so that it completely meets or exceeds the expectations of the brief to a high standard.

- Carry out an evaluation in a systematic way, focussing on relevant quality points, identifying areas of development/ improvement as well as assessing the fitness for purpose of the outcome.

Awarding grades and reporting results

The overall qualification grade will be calculated based on aggregation of the candidate's achievement in each of the assessments for the mandatory units, taking into account the assessments' weighting. The **Level 3 Advanced Technical Certificate in Animal Management** will be reported on a four grade scale: Pass, Merit, Distinction, Distinction*.

All assessments **must** be achieved at a minimum of Pass for the qualification to be awarded. Candidates who fail to reach the minimum standard for grade Pass for an assessment(s) will not have a qualification grade awarded and will not receive a qualification certificate.

The approximate pass grade boundary for the synoptic assignment(s) in this qualification are:

Synoptic Assignment	Pass Mark (%)
Synoptic Assignment (030)	40%

The contribution of assessments towards the overall qualification grade is as follows:

Assessment method	Grade scale	% contribution
Synoptic Assignment (030)	X/P/M/D	60%
Exam (031 or 531)	X/P/M/D	40%

Both synoptic assignments and exams are awarded (see 'Awarding individual assessments', at the start of Section 7, above), and candidates' grades converted to points. The minimum points available for each assessment grade is listed in the table below. A range of points between the Pass, Merit and Distinction boundaries will be accessible to candidates. For example a candidate that achieves a middle to high Pass in an assessment will receive between 8 and 10 points, a candidate that achieves a low to middle Merit in an assessment will receive between 12 and 14 points. The points above the minimum for the grade for each assessment are calculated based on the candidate's score in that assessment.

	Pass	Merit	Distinction
Exam (031 or 531): 40%	6	12	18
Assignment (030): 60%	6	12	18

The candidate's points for each assessment are multiplied by the % contribution of the assessment and then aggregated. The minimum points required for each qualification grade are as follows:

Qualification Grade	Minimum points
Distinction*	20.5
Distinction	17
Merit	11
Pass	6

Candidates achieving Distinction* will be the highest achieving of the Distinction candidates.

8 Administration

Approved centres must have effective quality assurance systems to ensure valid and reliable delivery and assessment of qualifications. Quality assurance includes initial centre registration by City & Guilds and the centre's own internal procedures for monitoring quality assurance procedures.

Consistent quality assurance requires City & Guilds and its associated centres to work together closely; our Quality Assurance Model encompasses both internal quality assurance (activities and processes undertaken within centres) and external quality assurance (activities and processes undertaken by City & Guilds).

For this qualification, standards and rigorous quality assurance are maintained by the use of:

- internal quality assurance
- City & Guilds external moderation.

In order to carry out the quality assurance role, Internal Quality Assurers (IQAs) must have and maintain an appropriate level of technical competence and have recent relevant assessment experience. For more information on the requirements, refer to *Section 2: Centre requirements* in this handbook.

To meet the quality assurance criteria for this qualification, the centre must ensure that the following procedures are followed:

- suitable training of staff involved in the assessment of the qualification to ensure they understand the process of marking and standardisation
- completion by the person responsible for internal standardisation of the Centre Declaration Sheet to confirm that internal standardisation has taken place
- the completion by candidates and supervisors/tutors of the record form for each candidate's work.

External quality assurance

City & Guilds will undertake external moderation activities to ensure that the quality assurance criteria for this qualification are being met. Centres must ensure that they co-operate with City & Guilds staff and representatives when undertaking these activities.

City & Guilds requires the Head of Centre to

- facilitate any inspection of the centre which is undertaken on behalf of City & Guilds
- make arrangements to receive, check and keep assessment material secure at all times,
- maintain the security of City & Guilds confidential material from receipt to the time when it is no longer confidential and
- keep completed assignment work and examination scripts secure from the time they are collected from the candidates to their dispatch to City & Guilds.

Enquiries about results

The services available for enquiries about results include a review of marking for exam results and review of moderation for internally marked assessments.

For further details on enquiries and appeals process and for copies of the application forms,, please visit the **appeals page** of the City & Guilds website at **www.cityandguilds.com**.

Re-sits and shelf-life of assessment results

Candidates who have failed an assessment or wish to re-take it in an attempt to improve their grade, can re-sit assessments **once only**. The best result will count towards the final qualification. See guidance on individual assessment types in Section 5.

Factors affecting individual learners

If work is lost, City & Guilds should be notified immediately of the date of the loss, how it occurred, and who was responsible for the loss. Centres should use the JCQ form, JCQ/LCW, to inform City & Guilds Customer Services of the circumstances.

Learners who move from one centre to another during the course may require individual attention. Possible courses of action depend on the stage at which the move takes place. Centres should contact City & Guilds at the earliest possible stage for advice about appropriate arrangements in individual cases.

Malpractice

Please refer to the City & Guilds guidance notes *Managing cases of suspected malpractice in examinations and assessments*. This document sets out the procedures to be followed in identifying and reporting malpractice by candidates and/or centre staff and the actions which City & Guilds may subsequently take. The document includes examples of candidate and centre malpractice and explains the responsibilities of centre staff to report actual or suspected malpractice. Centres can access this document on the City & Guilds website.

Examples of candidate malpractice are detailed below (please note that this is not an exhaustive list):

- falsification of assessment evidence or results documentation
- plagiarism of any nature
- collusion with others
- copying from another candidate (including the use of ICT to aid copying), or allowing work to be copied
- deliberate destruction of another's work
- false declaration of authenticity in relation to assessments
- impersonation.

These actions constitute malpractice, for which a penalty (eg disqualification from the assessment) will be applied.

Where suspected malpractice is identified by a centre after the candidate has signed the declaration of authentication, the Head of Centre must submit full details of the case to City & Guilds at the earliest opportunity. Please refer to the form in the document *Managing cases of suspected malpractice in examinations and assessments*.

Access arrangements and special consideration

Access arrangements are adjustments that allow candidates with disabilities, special educational needs and temporary injuries to access the assessment. and demonstrate their skills and knowledge without changing the demands of the assessment. These arrangements must be made before assessment takes place.

It is the responsibility of the centre to ensure at the start of a programme of learning that candidates will be able to access the requirements of the qualification.

Please refer to the *JCQ access arrangements and reasonable adjustments and Access arrangements - when and how applications need to be made to City & Guilds* for more information. Both are available on the City & Guilds website: <http://www.cityandguilds.com/delivering-our-qualifications/centre-development/centre-document-library/policies-and-procedures/access-arrangements-reasonable-adjustments>

Special consideration

We can give special consideration to candidates who have had a temporary illness, injury or indisposition at the time of the examination. Where we do this, it is given after the examination.

Applications for either access arrangements or special consideration should be submitted to City & Guilds by the Examinations Officer at the centre. For more information please consult the current version of the JCQ document, *A guide to the special consideration process*. This document is available on the City & Guilds website: <http://www.cityandguilds.com/delivering-our-qualifications/centre-development/centre-document-library/policies-and-procedures/access-arrangements-reasonable-adjustments>

Unit 301

Principles of Health and Safety

UAN:	A/507/4634
Level:	3
GLH:	30

What is this unit about?

This unit aims to provide learners with an understanding of the principles of health and safety and identify how these can be applied in practice within land-based or related industries. This unit is primarily aimed at learners within a centre-based setting looking to progress into the sector or further education and training.

Learners will be able to recognise common health and safety practices and processes which they will encounter within the workplace. The land-based sector has one of the worst fatal accident records of any major industrial sector and a lack of basic training and/or competency is often a contributory factor. There is a need for new entrants to these industries to gain essential health and safety knowledge in order to minimise harm to themselves and to improve attitudes and behaviour in the workplace. In addition, the learners have the opportunity to consider factors which are specific to their workplace.

This unit must be taught alongside **all** technical units within the qualification ensuring learners gain an appreciation of its importance and so that they are equipped with knowledge and understanding to protect themselves and others when working in the industry.

Learning outcomes:

In this unit, learners will be able to:

1. Understand health and safety legislation
2. Understand the risk assessment process
3. Understand first aid requirements
4. Understand the principles of safe manual handling
5. Understand the use of fire extinguishers

Scope of content

This section gives details of the scope of content to be covered in the teaching of the unit to ensure that all the learning outcomes can be achieved.

Learning outcome:

1. Understand health and safety legislation

Topics

- 1.1 Impact of good and bad practice upon individuals and businesses
- 1.2 Key legislation relating to health, safety and welfare
- 1.3 Statutory duties of employers, employees and the self-employed
- 1.4 Consequences of not complying with statutory duties
- 1.5 How individuals can contribute to establishing a good health and safety culture

Topic 1.1

Learners will know direct and indirect consequences of poor standards of workplace health and safety practice on both businesses and individuals, to include:

Financial eg:

- prosecution fines and legal fees
- compensation claims
- repairs/replacement of equipment
- recruit and train new staff
- increased insurance premiums

Emotional eg:

- guilt and grief
- stress

Reputation eg:

- loss of reputation
- bad publicity

Employees eg:

- reduced staff morale and productivity
- increased staff turnover and sickness

Social eg:

- loss of independence
- reduced social activity

Topic 1.2

Learners will know key legislation relating to health, safety and welfare within the workplace, for example, Health and Safety at Work etc. Act 1974 and the Management of Health and Safety at Work Regulations 1999. Learners will understand the importance of accident and incident reporting in accordance with the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) 2013. Learners will understand the legal status and practical implications of approved codes of practice and industry specific best practice guidance.

Topic 1.3

Learners will know the statutory duties of employers, employees and the self-employed, to include:

Employers:

- provide a safe working environment

- provide safe equipment and systems of work.
- provide information, instruction, training and supervision.
- arrange for the safe storage, transport and use of articles and substances.
- provide adequate welfare facilities.

Employees:

- take reasonable care of their own health and safety.
- take reasonable care of other people who may be affected by what they do or don't do at work.
- cooperate with their employer on health and safety.
- not interfere with or misuse anything provided for their health, safety or welfare

Topic 1.4

Learners will know the powers of health and safety enforcement officers (eg inspection, investigation and guidance) and identify the range of enforcement actions and penalties that may be imposed (eg prohibition and improvement notices, intervention fee and prosecutions).

Topic 1.5

Learners will understand how individuals can contribute to establishing a good health and safety culture within their workplace, for example:

- prompt reporting of defective safety equipment or other matters of concern
- always use control measures and personal protective equipment (PPE) as instructed
- help others to work safely by sharing knowledge and good practice
- set a good example to others by always working safely
- follow instructions and safe working procedures

Learning outcome:

2. Understand the risk assessment process

Topics

2.1 Principles of risk assessment

2.2 Workplace hazards

2.3 Risk assessment

Learning outcome 2 provides learners with the knowledge on the requirements and importance of carrying out risk assessments. Learners will be expected to carry out risk assessments in practice when performing their industry specific activities as required.

Topic 2.1

Learners will understand the legal requirement to carry out suitable and sufficient risk assessments. They will understand the responsibilities of the employer, self-employed and employee within the risk assessment process and identify when expert advice and guidance may be required (eg lack of experience or knowledge).

Topic 2.2

Learners will know common hazards associated with a workplace which could result in serious harm to themselves or others (eg visitors, colleagues, members of the public).

Topic 2.3

Learners will understand how to undertake a detailed risk assessment within the context of their

workplace, following the Health and Safety Executive 'Five Steps to Risk Assessment', to include:

- identification of the hazards
- identification of who might be harmed and how they might be harmed
- evaluation of the risks and decide how the level of risk may be controlled
- recording and implementation of the results, as well as communication to others who may be affected
- reviewing risk assessments and suggesting when risk assessments should be reviewed.

Learners will also know the hierarchy of risk control:

- elimination
- substitution
- safe working procedures
- training, instruction and supervision
- personal and respiratory protective equipment (PPE/RPE).

Learning outcome:

3. Understand first aid requirements

Topics

3.1 Planning for emergencies and first aid provision in the workplace

3.2 Procedures when encountering an accident or medical emergency

3.3 First aid for common emergencies

In this outcome learners will explore the importance of planning to and subsequently how to manage common first aid emergencies which may arise in the workplace, with emphasis upon their workplace. Learners should be aware of the aims of first aid (ie, preserve life, prevent injuries worsening and promote recovery) Evidence towards this outcome could come from a current first aid training qualification (ie, appointed persons or first aid at work).

Topic 3.1

Learners will understand the importance of emergency planning, especially for lone or isolated working, and the responsibilities of a first aider. Learners will also know the minimum requirements for first aid at work and identify supplementary arrangements which may be appropriate for their workplace.

Topic 3.2

Learners will know the procedures to follow when encountering an accident or medical emergency. Learners will know how to check the incident site to minimize risk to themselves, assess the situation, and how and when to contact the emergency services and identify prioritisation of activities (eg, 'DRABC').

Topic 3.3

Learners will know how to manage the following common situations as well as other significant situations appropriate to their workplace:

- wounds and burns
- choking
- severe bleeding
- shock
- concussion

- unconscious casualties
- falls from height
- suspected broken limbs and dislocations
- heart attacks.

Learners will know how to recognise their own limitations and explain how to monitor the condition of the casualty and prevent an injury from worsening.

Learning outcome:

4. Understand the principles of safe manual handling

Topics

4.1 Principles of safe manual handling

4.2 Safe manual handling of common items

In this outcome learners will need to investigate the principles of risk assessment relevant to manual handling in order to plan for and safely move a range of common items associated with their workplace. Learners should have access to a range of common mechanical aids and these should be used as appropriate.

Topic 4.1

Learners will understand how manual handling at work should be minimised and identify appropriate alternatives and mechanical aids. They will know the common causes of injuries associated with poor manual handling within the workplace.

Topic 4.2

Learners will understand how to safely move a range of common items within their workplace. They will know appropriate mechanical aids for a range of common manual handling activities within their workplace.

Learning outcome:

5. Understand the use of fire extinguishers

Topics

5.1 Use of fire extinguishers

Topic 5.1

Learners will know the types, use and colours of portable fire extinguishers, to include:

- water
- dry powder
- foam
- CO₂.

Learners will know how to recognise their own limitations in managing fires in the workplace.

Guidance for delivery

On completion of this unit, the learner will have developed an understanding of some of the key underlying principles and practices of health and safety to help prepare them to enter the workplace. It will be important that delivery relates to example situations that are vocationally relevant to the learners.

Visiting speakers eg paramedics, health and safety consultants or inspectors could enhance the relevance of the subject to learners.

Suggested learning resources

Books

- Farmwise - Your Essential Guide to Health and Safety in Agriculture Health and Safety Executive
Published by: Health and Safety Executive Books, 2013
ISBN: 0717665097
- Health & Safety at Work Essentials Chadder, P &
Duncan, M
Published by: Lawpack Publishing Ltd., 8th Edition, 2014
ISBN: 1910143006
- Health and Safety at Work: An Essential Guide for Managers Stranks, J
Published by: Kogan Page, 9th edition, 2010
ISBN: 0749461195

Websites

Health and Safety Executive (HSE) www.hse.gov.uk
The Royal Society for the Prevention of Accidents (ROSPA) www.rosipa.com/

Unit 302

Undertake and Review Work Related Experience in the Land-based Industries

UAN:	F/507/4635
Level:	3
GLH:	30

What is this unit about?

The aim of this unit is to give learners the skills needed to identify, participate in and review work experience in the environmental and land-based sector. The unit is primarily aimed at learners within a centre-based setting looking to progress into the sector or further education and training.

Learning outcomes

In this unit, learners will be able to

1. Determine employment opportunities in the environmental and land-based industries
2. Prepare for a work-based experience in the environmental and land-based industry
3. Understand the importance of effective interpersonal skills in the workplace
4. Review a work-based experience in the environmental and land-based sector

Scope of content

This section gives details of the scope of content to be covered in the teaching of the unit to ensure that all the learning outcomes can be achieved.

Learning outcome:

1. Determine employment opportunities in the environmental and land-based industries

Topics

1.1 Career and progression opportunities within an environmental and land-based industry

In this outcome, learners will explore the different job roles and responsibilities, and the job titles commonly associated with them in their specialist sector. This background understanding is likely to require some formal classroom teaching. Learners should be encouraged to explore the range of employment opportunities and career paths within their specialist sector. Learners will then consider the skills and qualifications that are required for appropriate jobs for themselves and should be encouraged to think about skills and qualifications that they may need to acquire to achieve their employment and careers ambitions. This should help them to identify suitable work experience.

Topic 1.1

Learners will know the job roles relevant to the land based sector, to include:

- managerial
- supervisory
- team worker
- trainee
- volunteer
- common job titles within the relevant sector,
- main duties and responsibilities.

Learners will also know the skills, qualifications and experience needed to fulfil duties and responsibilities of appropriate jobs, to include:

- job specific
- vocational
- personal.

Learning outcome:

2. Prepare for a work-based experience in the environmental and land-based industry

Topics

2.1 Appropriate work-based experience and the application process

2.2 Interview skills

This outcome involves learners going through the process of applying for work experience. They will need to locate suitable job adverts or work experience opportunities, but can be supported by centres suggesting suitable placements. When applying for work experience learners should produce, as a minimum, a detailed curriculum vitae and letter of application using a computer. It will be beneficial for learners to attend a real or simulated interview, and reflect on their performance outlining how they could improve their effectiveness.

Topic 2.1

Learners will find a suitable job opportunity based on existing skills, experience, qualifications, development of skills and experience to achieve future employment goals. They will use a range of sources of information about work opportunities eg trade magazines, websites. Learners will , complete an application form (if applicable), curriculum vitae and letter of application.

Topic 2.2

Learners will know how to prepare for an interview eg research the business and job role, suitable dress and personal presentation, information to find out and suitable questions to ask.

Learners will also know how to behave in an interview, eg:

- attend punctually
- dressed appropriately
- answering questions
- completion of other test (eg practical, aptitude)
- reflection on interview performance.

Learning outcome:

3. Understand the importance of effective interpersonal skills in the workplace

Topics

3.1 The importance of effective interpersonal skills in the workplace

It would be appropriate for employers to be invited to outline to learners their expectations in the workplace.

Topic 3.1

Learners will understand the importance of effective interpersonal skills in the workplace when dealing with customers and colleagues, to include:

- effective communication (eg addressing others face to face, appropriate telephone manner, effective written communication, use of social media)
- courtesy and helpfulness
- appropriate dress and body language
- product knowledge
- use of technical terms.

Learning outcome:

4. Review a work- based experience in the environmental and land-based sector

Topics

4.1 Present evidence of activities and achievements during a work-based experience

4.2 Review a work-based experience, identifying strengths and areas for improvement

4.3 Evaluate future career aspirations

In this outcome, learners will use evidence from their work experience to present a report (eg written or visual), on their work experience business, job role, learning and achievements. They will then review the effectiveness of the workplace, making realistic and justified suggestions for improvement. Review of their own workplace performance and achievements should include all of the content identified, with reference to relevant evidence, eg reports, progress reviews, and the extent to which their aims, objectives/targets have been achieved. Learners should consider further

training and experience that will help them to achieve their career ambitions.

Topic 4.1

Learners will present evidence of activities and achievements during a work-based experience to include, as appropriate: name of work experience provider, nature of the organisation (type of business, products or services, customers), organisation structure chart, main duties and responsibilities, regular daily working routine, evidence of safe working practices (eg PPE, risk assessments).

Topic 4.2

Learners will review their work-based experience, identifying strengths and areas for improvement, to include:

- work rate
- work quality and effectiveness
- punctuality
- attendance
- reliability
- dress and personal presentation
- working relationships with others work experience aims
- objectives and targets.

Topic 4.3

Learners will evaluate career aspirations, to include:

- advantages and disadvantages of identified pathways
- suitability to personal interests
- skills and qualifications.

Guidance for delivery

Learners on vocational courses should have experience of the type of work that they hope to do, and of the expectations of potential future employers.

Ideally this unit should be undertaken in a real business environment relevant to the subject interest of the learner, but actual work experience may be gained by a number of routes, eg as part of an industrial placement whilst within the programme, whilst working on a planned daily or weekly basis on the centre's commercial and/or educational facilities, whilst undertaking voluntary work within the industry, as previous relevant and current work experience in the industry or as a member of a group of learners invited to carry out practical work on a suitable business.

Throughout the unit, the emphasis should be on safe working. It is expected that learners will be aware of safe working practices and familiar with accepted practices and behaviours within the context in which they are working.

Learners should complete a minimum of 150 hours of work experience to achieve this unit. If work experience is in the industry, centres should be mindful of their responsibilities for ensuring that work placements have appropriate supervision, insurance and health and safety policies in place.

It is recommended that a summary report is completed by the employer at the end of the work placement.

Unit 303

Animal Health and Husbandry

UAN:	L/507/7103
Level:	3
GLH:	60

What is this unit about?

The purpose of this unit is to provide learners with an understanding of the principles of animal health and how these can be put into practice. This unit is primarily aimed at learners within a centre-based setting looking to progress into the sector or to further education and training.

The learner will be able to recognise the signs of good and ill health in animals and evaluate these as indicators of health status. The learner will carry out health checks on a range of animals and produce animal health plans. The structure and role of pathogenic organisms will be examined and prevention and treatment of a range of diseases and disorders covered. The learner will be able to carry out routine and non-routine treatments for animals.

Learning outcomes

In this unit, learners will be able to

1. Recognise indicators of health in animals
2. Understand common disease and disorders, their treatment and prevention
3. Monitor and record the health and wellbeing of animals
4. Recognise how to deliver and record basic animal treatments
5. Carry out animal husbandry tasks

Scope of content

This section gives details of the scope of content to be covered in the teaching of the unit to ensure that all the learning outcomes can be achieved.

Throughout the unit, the emphasis should be on safe working. It is expected that the learners are guided towards safe working practices and maintaining the welfare of the animals by recognising and minimising stress.

The unit should cover a range of species as appropriate to the area of study:

- Horse care - horses, ponies (and donkeys if appropriate)
- Animal care: companion (dog or cat), small mammal (rabbit and rodents), exotics, large mammals (goat, camelids, donkey, pig, other available large mammals).

Learning outcome:

1. Recognise indicators of health in animals

Topics

1.1 Signs of health in animals

1.2 Legislation that relates to animal health

Learners will be required to recognise signs of health in animals. It is accepted that this outcome will require some formal delivery but it should also be delivered in practical situations where learners are visually assessing animals for health and undertaking health checks. Learners should be encouraged to handle a range of animals, with the emphasis on safe working practices and dealing with animals in a way which reduces stress and minimises injury to the learner, animals and others.

Topic 1.1

Learners must be able to recognise and demonstrate the following health indicators in animals, to include the normal range of the following:

- Temperature: procedure for taking and recording, including the use of digital and mercury thermometers
- Pulse Rate: procedure for taking and recording appropriate to animal species
- Respiration rate: procedure for taking and recording
- Capillary refill time (CRT): procedure for taking and recording.

Learners will need to be able to demonstrate and record routine health checks, to include:

- Appetite and water intake
- Behaviour
- Movement and gait
- Appearance of eyes, ears, nose, mouth / teeth
- Appearance of mucous membranes - identify different mucous membrane colours and give an example of a condition related to the colour – white, pink, red, blue and yellow
- Appearance of skin/ fur/ feathers/ scales
- Limbs/feet
- Faeces and urine
- Genitals and anal area
- Signs of coughing, sneezing or vomiting
- Body condition
- Weight.

Learners need to know who to inform of any ill-health or problems recorded.

Topic 1.2

Learners must be able to summarise the aims and purpose of the following legislation, linking to other learning outcomes within this unit.

The following is a guided list of the legislation that applies in the Animal Care sector. For purposes of assessment, there is no requirement for detail; however learners should be able to summarise the aims and purpose of the legislation, linking to other learning outcomes within this unit.

Centres should be up to date with legislation, policies and codes of practice used in the taught content.

Legislation

- Animal Welfare Act 2006 and Animal Health and Welfare Act (Scotland) (2006)
- Welfare of Animals (Transport) Order 2006
- The Welfare of Animals at Market Order 1993
- The Veterinary Surgeons Act 1966
- The Welfare of Farmed Animals Regulations 2007
- The Welfare of Animals Regulations 1999 (slaughter or killing).

For horse care, they would also need to cover:

- Animal Welfare Act 2006 and Animal Health and Welfare act (Scotland) (2006)
- Welfare of Animals (Transport) Order 2006
- The Welfare of Animals at Market Order 1993
- The Veterinary Surgeons Act 1966
- Horse Passport Regulations 2009
- The Welfare of Animals Regulations 1999 (slaughter or killing).

Learners may look at other legislation appropriate to their selected species.

Learning outcome:

2. Understand common disease and disorders, their treatment and prevention

Topics

- 2.1 The role of pathogenic organisms in animal disease
- 2.2 Common diseases and disorders in animals and their impact on health and welfare
- 2.3 Reasons and methods of preventative care and treatment measures used for animals
- 2.4 Causes, signs and treatment of animal nutritional deficiencies, excesses and disorders

Learners will cover a wide range of diseases and disorders that affect animals.

Topic 2.1

Learners must understand the role and relationship between the following pathogenic organisms and the immune system.

Pathogenic organisms:

Learners need to differentiate between the following pathogens, for each pathogen they need to include common types, structure and replication:

- Bacteria
- Viruses
- Fungi
- Protozoa
- Parasites.

Learners need to have a greater understanding of parasites to include:

- Endoparasites and ectoparasites – to include worms, fleas, , ticks, mites, lice
- Lifecycles of the parasites
- Symptoms, treatment and prophylaxis.

Learners need to be able to identify how diseases spread and their symptoms to the disease, to include:

- Methods of disease transmission – direct, indirect, airborne, vectors, fomites, inhalation, ingestion, environment
- Immunity (passive, natural, active and artificial)
- Symptoms (asymptomatic carrier).

Topic 2.2

Learners need to be able differentiate between a notifiable disease and zoonotic disease, making reference to DEFRA and the procedure for notification.

Learners need to explain the following in relation to the named diseases:

- Signs and symptoms
- Treatment
- Prevention and control of disease.

Notifiable diseases to include (relevant to species):

- Rabies
- Avian flu
- Swine Flu
- Bovine Spongiform Encephalopathy (BSE)
- Tuberculosis
- Bluetongue
- Foot and Mouth
- Newcastle Disease
- Equine Infectious Anaemia.

Zoonotic diseases to include (relevant to species):

- Ringworm
- Salmonella
- Campylobacter
- Cat Scratch Fever
- Leptospirosis
- Lymes Disease
- Psittacosis
- Cheyletiella

- Sarcoptic mange
- Toxoplasmosis.

Learners should be able to identify and explain of common diseases and disorders specific to chosen specie, to include:

- Signs and symptoms
- Treatment
- Control.

Topic 2.3

Learners must identify the different types and frequency of vaccination administration and diseases that the following animals are vaccinated against, which may include:

- Dog
- Cat
- Rabbit
- Horses.

Topic 2.4

Learners will be able to describe causes, signs and treatment of nutritional disorders relevant to species which may include:

- Anorexia
- Obesity
- Vitamins deficiencies and excess
- Minerals deficiencies and excess
- Protein deficiency (Taurine and Arachidonic acid)
- Constipation
- Diabetes
- Urolithiasis
- Laminitis
- Equine metabolic syndrome.

Learning outcome:

3. Monitor and record the health and wellbeing of animals

Topics

3.1 Plans to promote and maintain animal health and wellbeing

3.2 Monitor and record animal health and wellbeing

Learners will be required to develop plans to promote and maintain the wellbeing of animals. The emphasis should be on improving animal health and welfare underpinned by knowledge on disease prevention and control (bio security). Health plans should evolve over a period of time, identifying the current situation, health and welfare targets within given time frames and allow for reassessments over time.

Topic 3.1

Learners should understand the importance to monitor and record animal health and welfare using a health record card. The animal health plans should include:

- Animal identification details
- Date of observation
- Time of observation
- Weight of animal

- Previous history to include: current medication, breeding, allergies
- Medication administered (if applicable)
- Behaviour/temperament
- General demeanour
- Overall health status
- Diet – appetite / thirst
- Urination/defecation/vomiting
- Exercise.

The health plan should be updated over a period of time depending on the species and health status.

Topic 3.2

Learners must be able to design and evaluate an animal health plan.

Learners must implement an animal health plan (this can be issued by the centre) and record appropriately over a period of time using animals from the range.

Learners should have an understanding how the following records are used should an animal require veterinary treatment:

- Veterinary records
- Feeding and water intake records
- Monitoring of clinical signs against expected recovery
- Frequency of defecation and urination
- Pain management
- Adverse reactions.

Learning outcome:

4. Recognise how to deliver and record basic animal treatments

Topics

4.1 How to deliver a range of basic routine and non-routine animal treatments safely in line with codes of practice and legislation

Learners will be able to deliver and record basic treatments to animals. Learners should be allowed the opportunity to cover different types of treatments, including routine, such as those for internal and external parasites and non-routine, such as dealing with accidents and injuries. It is suggested that simulation is used for the delivery of this outcome.

Topic 4.1

Basic routine treatments:

- Routes of medicine administration to include topical, enteral, and parenteral and restraint techniques.
- Frequency of drug administration depending upon the drug choice and route
- Sourcing treatments to include: Vets, pharmacies, SQP, feed merchants
- Assessing animal for adverse reactions and the action to take with a suspected reaction and who to notify.

Non-routine animal treatments:

Learners must have an appreciation of the limitations of responsibilities and expectations in a first

aid situation:

- Aims and rules of first aid
- Limitations of first aid
- Classification of first aid situations – minor, immediate and life threatening condition's
- Assessing the first aid situation
- Examination of an injured animal.

Learners need to be able to identify and state the utilisation of the items needed in a First Aid box, to include (as appropriate for species):

- Selection of bandages
- Cotton wool
- Sterile dressing materials
- Adhesive tape
- Rectal thermometer
- Tweezers
- Gloves
- Scissors
- Hand sanitizer
- Eye wash, antiseptic solution
- Poultice
- Contact details for the local veterinary practice
- Carrier bag
- Blanket.

Learners to suggest appropriate actions for the common first aid situations, which may include:

- Shock
- Road Traffic Collision (RTC)
- Convulsions
- Fractures
- Wounds
- Dislocations
- Choking
- Poisoning
- Burns and scalds
- Bites and stings
- Foreign bodies
- Haemorrhages.

Learners to demonstrate:

- Bandaging techniques (this may include foot, limb, ear / head, abdomen and tail) and the different layers that are used – primary layer, secondary layer and tertiary layer to include padding
- Cleaning of wounds
- Consideration of working with an unpredictable animal and precautions to take
- The use of handling and restraint techniques and equipment.

Learning outcome:

5. Carry out animal husbandry tasks

Topics

5.1 Manage and maintain animal accommodation

5.2 Handle and restrain animals

Learners will be able to manage and maintain animal accommodation to promote animal welfare and maintain animal health. They will also be able to handle and restrain animals appropriately to minimise stress and maintain safety of animal and themselves.

Topic 5.1

Learners will identify the animal requirements and plan the accommodation to include:

- Animal welfare requirements:
 - Space
 - Size
 - Stocking densities
 - Social needs of animals
 - Life stages of animals
 - Opportunities for movement and exercise
 - Purpose for which the animal is being kept
 - Minimising stress
 - Provision of food and water
 - Enrichment.

- Environmental factors:
 - Humidity
 - Ventilation
 - Pollution
 - Prevailing weather
 - Temperature
 - Sunlight

- Accommodation plans:
 - Location taking into account predator/ prey contact
 - Location of services eg electricity, water
 - Weather elements eg direct sunlight, rain, extremes of temperature
 - Ease of access
 - Waste disposal
 - Security
 - Design and construction
 - Fixtures and fittings
 - Costs.

Learners will need to prepare and maintain suitable accommodation for chosen animal species, to include:

- Preparation:
 - Standard and alternative fixtures and fittings
 - Bedding materials
 - Lifestyle

- Life stage of animal
- Number of animals to minimise stress and to promote animal welfare
- Suitable for long or short term use
- Enrichment.
- Maintenance:
 - Safety and security checks; safe for animals, self and others, prevent escape
 - Regular checks for: security, insecure fittings, broken fixtures, protrusions, faulty or damaged electrical and lighting sources, damage due to damp, oxidisation, accident, wear and tear
 - Cleaning routines: complete clean, skip out, when animal accommodation should not be cleaned
 - Use of safe working practices throughout cleaning process in line with Health and Safety recommendations eg health and safety at work act, RIDDOR, COSHH, centre risk assessments.

Learners need to monitor and evaluate animal accommodation and the report the findings to the appropriate person following centre procedures, this may include:

- Safety security
- Environmental factors
- Sex and mix of animals
- Cleanliness and suitability of accommodation
- Health and wellbeing of animals eg signs of stress, stereotypical behaviour
- Suitability of construction materials, fixtures and fittings, bedding materials.

Topic 5.2

Learners need to plan for the handling and restraining of selected animal species, to include:

- Assess temperament
- Identify equipment to be used and size
- Assess if assistance is required
- Location
- Purpose for handling and restraint
- Welfare considerations.

The equipment that could be used for handling and restraining animals may include:

- Collar and lead
- Nets
- Muzzles
- Hooks
- Crush cage
- Goads
- Noose
- Crook
- Pillow case
- Box
- Personal Protective Equipment (PPE) eg steel top cap boots, overalls, gloves, hard hat).

Learners need to plan the movement (from one cage/ pen to another) and transport (from one location to another) of selected animals species, to ensure that legislation and animal welfare codes of practice are met, to include:

- Reasons for movement eg exercise, change enclosure
- Methods of movements
- Equipment available
- Time of day for move

- Size and weight of animal(s) being moved
- Health status of animal(s)
- Safety of area
- Available persons and their skills/ knowledge
- Legislation eg EU Regulation 1/2005 – The Welfare of Animals (Transport) Order 2006, Dangerous Wild Animals Act (1976) , Animal Welfare Act 2006
- Codes of practice eg, PETS Travel Scheme, Five Animal Welfare Needs.

Learners must handle, restrain and move selected animal species using correct techniques and equipment, complying with relevant legislation, codes of practice and minimises stress and injury.

Guidance for delivery

This unit is designed to provide the learner with sound knowledge and skills required to promote and maintain health in animals. Depending upon which qualification this unit is delivered through, the context of teaching will differ.

Throughout the unit, the emphasis should be on safe working. It is expected that learners will be aware of safe working practices and familiar with accepted practices and behaviours within the context in which they are working. Emphasis needs to be placed on the duty of care of learners to the animals with which they are working, and at no time should any of the activities have a negative impact upon animal welfare, as far as is possible.

Learners working towards level 3 are likely to have experience of animal health and welfare. This unit aims to extend the learners knowledge and skills involved with ensuring the health and welfare of animals. Emphasis should be placed not only on 'doing', but also upon the importance of planning and strategies to promote health and welfare for animals nationally in accordance with government regulations and not only for those situations within their charge. It is important that the learner understands current legislation and Codes of Practice in relation to animal health and welfare.

It is accepted that formal lectures will be necessary at Level 3 but for this unit it is recommended that they are they are linked directly with interactive lessons in a real environment. Learners must be given the opportunity to deal with a range of animals in different situations which reflects current industry practice.

Unit 304

Animal Feeding and Nutrition

UAN:	D/507/7106
Level:	3
GLH:	60

What is this unit about?

The purpose of this unit is for learners to develop their knowledge and understanding of the different nutritional needs of animals. The learner will be able to describe the function, digestion and absorption of the major nutrients. Learners will explore the nutritional values of different food types and be able to calculate the dietary requirements for animals at different life stages. This will be used to design, monitor, record and evaluate feeding regimes. Learners will also investigate nutritionally responsive disorders, the effect these have on animals and the impact on their dietary requirements.

Learning outcomes

In this unit, learners will be able to

1. Understand the basics of nutrition
2. Understand the nutritional values and properties of different food types
3. Understand the feeding requirements of animals at different life stages
4. Plan, monitor, record and evaluate diets and feeding regimes for animals

Scope of content

The unit will be focused on building learner knowledge of the basics of nutrition and working towards an understanding of the functions, digestion and absorption of the major nutrients. Learners will explore the nutritional values of different food types and discuss the suitability of these foods in a variety of species. Once learners have an understanding of the need for a balanced diet, the learner will calculate the energy content of different foods and the energy requirements for animals at different life stages. A further consideration when calculating energy requirements will be the impact of nutritionally responsive disorders on both the animal's health and adjustments to dietary requirements.

As learner understanding builds on individual animal needs, learners will design a feeding regime for a chosen animal, monitor the chosen animal, record the results and evaluate the effectiveness of the regime. The goal is by the end of the unit the learners can explain how and why we provide a balanced diet for a variety of species.

The unit should cover a range of species as appropriate to the area of study:

- Horse care - horses, ponies (and donkeys if appropriate)
- Animal care - Animal care: companion (dog or cat) or, small mammal (rabbit and rodents) or exotics or large mammals (goat, camelids, donkey, pig or other available large mammals).

Throughout the unit, the emphasis should be on safe working. It is expected that the learners are guided towards safe working practices and maintaining the welfare of the animals by recognising and minimising stress.

Centres should be up to date with legislation, policies and codes of practice used in the taught content

Learning outcome:

1. Understand the basics of nutrition

Topics

- 1.1 Contribution of the major nutrients of an animal's diet to maintain health and wellbeing
- 1.2 Functions of the major nutrients within the animal's body
- 1.3 Digestion and absorption of the major nutrients within the animal's body

The learner will investigate the functions of the major nutrients in the diet and how they are used in the body of a monogastric animal and a ruminant. The learner will be expected to describe the chemical structure of monosaccharide, disaccharides, fatty acids, amino acids and dipeptides.

Topic 1.1

The learner will be able to describe the major nutrients required for a balanced diet, to include:

- Carbohydrates (monosaccharide, disaccharides and polysaccharides)
- Proteins (amino acids, peptides and polypeptides)
- Fats/lipids
- Vitamins
- Minerals
- Water.

Topic 1.2

The learner will be able to describe the function of the major nutrients, to include:

- Energy

- Growth and repair
- Storage and insulation.

Topic 1.3

Learners will be able to describe the biological digestion and absorption for monogastric animals and ruminants, to include:

- Biological digestion:
 - Tissue layers of the intestinal wall to include the muscosal ducts and glands, lymph, blood vessels , circular muscle layer, longitudinal muscle layer, serosa.
- Monogastric stomach:
 - Digestive system organs and accessory glands
 - Dentition
 - Role of enzymes (Anabolism and catabolism)
 - Acidic and alkaline secretions
 - Absorption of nutrients and water
 - Hindgut fermenters (Role of microbes in digestion)
- Ruminant
 - Digestive system organs, to include compartments of the stomach, caecum, liver
 - Dentition
 - Role of microbial organisms in fibre fermentation
 - Partition of protein in the rumen.

Learning outcome:

2. Understand the nutritional values and properties of different food types

Topics

2.1 Nutritional components of food, suitability of different types of fresh and prepared foods and the considerations when developing a feeding plan

The learner will be able to compare different feeds with regard to the nutrient content, digestibility and palatability. There is an option to relate to the exotic species or zoological collections unit when looking at species that naturally feed on live prey.

Topic 2.1

Learners should be able to describe the nutritional value and properties of different foods, relating these to the nutritional needs and selection of an appropriate diet for chosen species.

Learners should be able to describe the nutritional content of different types of food, to include:

- Fresh/ natural: eg fruit, vegetables, forage eg grasses, meat (to include public perception and ethics of feeding live food)
- Prepared/ processed: eg dried, tinned, semi-moist, seeds, nuts, mixed compounds.

Learners should explore the influence of nutritional needs on a feeding plan and the effects of feeding an alternative to the planned diet.

Learning outcome:

3. Understand the feeding requirements of animals at different life stages

Topics

3.1 Calculate rations for animal diets

3.2 Dietary requirements for different life stages and conditions, and how these influence the development of a feeding plan

The learner will calculate rations for animals within the range and will explain how the ration may change at different life stages. Reference sources eg food packets, may be required for the students to derive energy and protein requirements. Calculations will be required, so access to calculators will be needed.

Topic 3:1

The learner will be able to calculate the requirements of an individual animal and choose a diet to meet that requirement. The learner will need to include the following in the diet plan:

- Feed items and ingredients
- Calculate the amount and the content eg energy value (Kcal)
- Assess the quality of the food stuffs
- Compare the nutritional values of wet and dry diets
- Gross energy (GE), digestible energy (DE) metabolisable energy (ME),
- Resting energy requirements (RER)/ Basal metabolic rate (BMR)
- Calculate rations of different foods to meet requirements.

Topic 3:2

The learner will need to calculate the energy requirement of animals at different life stages and conditions, choose an appropriate diet to meet that requirement and compare the requirements of different life stages. Life stages and conditions may include:

- Juvenile
- Adult
- Geriatric
- Breeding/pregnancy/ lactation
- Working
- Obesity
- Anorexic
- Specialist veterinary diets eg diabetes, laminitis
- Recuperation.

Learners need to be able to compare the nutritional values of feed given to animals at a variety of life stages and conditions.

Learning outcome:

4. Plan, monitor, record and evaluate diets and feeding regimes for animals

Topics

4.1 Design a feeding plan

4.2 Understand how to monitor, record and evaluate the effectiveness of a feeding plan

The learner is required to plan the diet or feeding regime, including ingredients, quantities and frequency of feeding for each animal and describe the presentation of food and water to animals. The learner is then required to monitor the effectiveness of their feeding regime and evaluate the effectiveness of the feeding plan as a whole, taking into account the health status, quantities of food consumed, cost of feeding etc.

For this outcome, learners may use animals kept at the centre or individual animal kept outside the centre.

Topic 4.1

The learner will be able to design a feeding plan for a selected species, life stage and condition.

The plan should include:

- Fresh water and its delivery
- Choice of diet
- Appropriate quantities of food (eg fresh and dried or pre-prepared and any supplements required)
- Frequencies of delivering food
- Methods of food delivery (eg enrichment activity)
- Alternatives to the plan dependant on food availability.

Record card should include:

- Consumption of food and water
- Health status
- Animal behaviour
- Frequency and turbidity of urination
- Frequency and consistency of defecation.

Topic 4.2

The learner needs to apply and evaluate a given feeding plan over a period of 4 – 6 weeks. The learner will accurately record the results of observations and evaluate effectiveness of the results, to include:

- Health status (Overall health of the selected animal – has the feeding plan provided a balanced diet, has the diet had a positive/negative effect)
- Quantities of food and water consumption (exactly how much is the animal consuming, is it enough to provide a balanced diet)
- Condition (is the animal gaining or losing weight, is it's coat in good condition)
- Calculate costs of feeding against budget and different food types (how much does it cost to feed the animal and is the cost reasonable for the species). This links to topic 3.1 and 3.2.

Guidance for delivery

A wide range of delivery techniques should be possible for this unit. Lectures, discussions, seminar presentations, internet and/or library-based research and practical and interactive lessons can all be employed.

Centres are encouraged to introduce employers and specific professionals from industry to provide interesting and relevant information to the learner. Learners must be given the opportunity to deal with a range of animals in different situations which reflect current industry practice.

Unit 305

Animal Behaviour and Communication

UAN:	M/507/7112
Level:	3
GLH:	60

What is this unit about?

The purpose of this unit is for learners to understand the principles of animal behaviour and communication. The learner will develop skills to interpret animal behaviour and understand the factors which influence such behaviour.

Learning outcomes

In this unit, learners will be able to

1. Understand behaviour patterns in animals
2. Observe animal behaviour
3. Understand the factors influencing behaviour
4. Understand social behaviour and animal communication

Scope of content

This section gives details of the scope of content to be covered in the teaching of the unit to ensure that all the learning outcomes can be achieved.

Throughout the unit, the emphasis should be on safe working. It is expected that the learners are guided towards safe working practices and maintaining the welfare of the animals by recognising and minimising stress.

Centres should be up to date with legislation, policies and codes of practice used in the taught content.

The unit should cover a range of species as appropriate to the area of study:

- Horse care - horses, ponies (and donkeys if appropriate)
- Animal care: companion (dog or cat) ..or, small mammal (rabbit and rodents) or exotics or large mammals (goat, camelids, donkey, pig or other available large mammals).

Learning outcome:

1. Understand behaviour patterns in animals

1.1 Analysis of natural and atypical animal behaviour

1.2 Causes of atypical behaviour in animals

1.3 Behaviour of captive or domestic animal and wild counterpart

Learners will recognise and distinguish between natural and atypical behaviour in animals. The underlying causes of atypical behaviour will also be investigated. Learners will also investigate the difference between the behaviour of an animal in the wild and its domestic or captive counterpart.

Topic 1.1

Learners will need to observe a range of animal species to identify natural and atypical behaviours, to include:

- Foraging
- Hunting
- Sleeping
- Social behaviour
- Grooming
- Courtship
- Territorial
- Hyperactivity
- Excessive inactivity
- Displacement behaviour
- Stereotypic behaviours.

Topic 1.2

Learners will need to be able to identify causes of atypical behaviours relevant to species, to include:

- Confinement
- Unsuitable environment
- Inappropriate social grouping.

Topic 1.3

Learners will need to be able to compare a range of behaviours exhibited by a species in the wild and its domestic or captive counterpart (eg wolf compared to domestic dog, wild wolf compared to a wolf in a zoo, wild cat compared to domestic cat).

Learning outcome:

2. Observe animal behaviour

Topics

2.1 Studying animal behaviour

2.2 Monitoring and recording behaviour in animals

2.3 Interpreting behaviour in animals

Learners will become familiar with reasons and techniques for studying and recording animal behaviour, including the work of noteworthy ethologists, behaviour sampling techniques and analysis of results.

Topic 2.1

Learners will need to have an appreciation of the contribution of noteworthy ethologists eg Lorenz, Darwin, Tinbergen.

Learners need to identify the reasons for studying animal behaviour, which may include:

- Improving captive animal management
- Managing animal populations
- Improving animal welfare.

Learners will need to describe and identify the uses and limitations of behaviour sampling techniques, this may include:

- Focal sampling
- Behaviour sampling
- Scan sampling.

Learners will need to identify behaviour sampling tools and equipment, which may include:

- Video cameras versus in situ observation
- Ethograms
- Recording charts.

Topic 2.2

Learners will need to observe one species of animal for a set period of time and note its behaviours. They will need to recognise whether the behaviours seen are states or events and describe the difference between the two. No interaction with the animal should take place and animal welfare guidelines should be followed.

Topic 2.3

Learners will need to record the behaviour observed using an ethogram. They will need to choose to record either the frequency or duration of behavioural states and events and create an appropriate graph.

Learners will need to produce a report detailing the observation results and offering reasons for behaviours seen.

Learning outcome:

3. Understand the factors influencing behaviour

Topics

- 3.1 Evolution of behaviour
- 3.2 Development of behaviour
- 3.3 Factors influencing behaviour

Learners will investigate how species-specific behaviour have evolved and how behaviour may develop. They will consider how internal and external factors may affect behaviour.

Topic 3.1

Learners will need to investigate how species-specific behaviour have evolved, to include:

- Link between environment and behaviour (adaptation, competition for resources)
- Heredity of behaviour
- Differences between development and evolution
- Darwinian Theory
- Domestication.

Topic 3.2

Learners will need to investigate the development of behaviour, to include:

- Difference between instinctive and learned behaviour
- Trial and error
- Observational learning
- Parental or social teaching
- Cultural behaviour.

Topic 3.3

Learners will need to investigate internal and external factors, these may include:

- Hormones
- Fixed action patterns
- Other animals
- Seasonal variation to include:
 - Food availability
 - Daylight
 - Weather

Learning outcome:

4. Understand social behaviour and animal communication

Topics

- 4.1 Methods of communication
- 4.2 Formation and maintenance of social grouping
- 4.3 Mating and parent-offspring behaviour

Learners will examine social behaviour and communication in animals. The learner will investigate how the senses listed in the unit content are involved in communication and how effective communication is involved in establishing and maintaining social groups and how it can reduce conflict between animals. The differences and similarities between bonding and imprinting and the importance of such mechanisms to survival will also be investigated.

Topic 4.1

Learners will need to define interspecific communication (eg predator-prey) and intraspecific communication.

Learners need to understand the methods of communication, to include:

- Vision (body language, facial expressions)
- Hearing (vocalisations and other sounds)
- Chemical (smell, pheromones, taste)
- Touch (eg allogrooming).

Topic 4.2

Learners will need to have an appreciation of social behaviour, to include:

- Hierarchies (linear versus complex)
- Maintaining dominance relationships (communication methods used by animals to reduce conflict)
- Agonistic behaviour
- Social bonding and affiliative behaviour
- Altruism.

Topic 4.3

Learners will need to have an appreciation of mating systems and strategies:

- Polygamy
- Monogamy
- Non-associative
- Courtship.

Learners will need to have an appreciation of parental behaviour and strategies:

- Biparental
- Intensive
- No parental investment
- Parent-offspring bonding
- Imprinting (to include filial and sexual).

Guidance for delivery

This unit is designed to help the learner to develop their understanding of the behaviour of animal species. They will appreciate how species-specific behaviour evolves and how to distinguish between normal and atypical behaviours in animals. Learners will explore innate and learned behaviour patterns and the factors which influence such patterns.

Throughout the unit, the emphasis should be on safe working practices and follow animal welfare guidelines.

It is expected that learners working towards Level 3 will have some previous awareness of animal behaviour. This unit aims to enhance such knowledge. Where direct observation of animals is not possible, then video footage can be used.

Any direct observations of animals must follow health and safety and animal welfare guidelines.

Unit 306

Biological Systems of Animals

UAN:	F/507/7115
Level:	3
GLH:	60

What is this unit about?

The purpose of this unit is for learners to develop their knowledge and understanding of the anatomical and physiological systems in animals. Learners will also investigate how selected systems, such as sensory organs and the skeleton, have adapted to meet the needs of animals living in different environments.

Learning outcomes

In this unit, learners will be able to

1. Understand the structure and function of biological systems in animals
2. Understand control mechanisms in animals
3. Understand the neural control mechanisms in animals
4. Understand how animals' senses have adapted to their environment

Scope of content

This unit will be focussed on developing learner understanding of how mammalian bodies are structured and how the different biological systems function in a range of animals. The goal is that by the end of this unit, all learners should be able to apply an understanding of adaptations to the structure and function of the biological systems of a range of animals. Learners should be able to explain how and why specific traits arose. The species covered should broadly be mammalian but reference to other living organisms should be made where appropriate.

This unit is designed to provide the learner with knowledge of the anatomical and physiological systems in animals. It will equip the learner with sound knowledge of the basis of how the animal body functions under normal conditions. The unit should cover a range of species as appropriate to the area of study, with reference to other species where indicated in the specification, for comparison purposes.

Unit range

Species should be broadly mammalian but reference to other living organisms to be made where appropriate, to illustrate comparative anatomy.

Learning outcome:

1: Understand the structure and function of biological systems in animals

Topics

- 1.1 Structure and function of the circulatory system
- 1.2 Structure and function of the respiratory system
- 1.3 Structure and function of the reproductive system
- 1.4 Structure and function of the excretory system
- 1.5 Structure and function of the musculoskeletal systems

This learning outcome is to cover the major body systems and reproductive processes in animals. The structures of the body systems can be observed through photographs, preserved specimens, or practical dissections. The use of case studies, comparing healthy organs with diseased or injured counterparts may help learners understand and relate the organs and systems of the functioning animal body. Learners will need to explain the link between the structure and function of the body systems. The learner will appreciate that the animal body has evolved from selective pressures in the natural environment.

Topic 1.1

Learners should be able to identify and describe the components that make up the circulatory system:

- Blood (blood cell formation and composition) – plasma, erythrocytes, leukocytes and platelets
- Components and function of the double circulation system:
 - Heart (four chambers, aorta, vena cava, pulmonary vein, pulmonary artery, bicuspid and tricuspid valves, chordae tendinae, sino-atrial node, atrioventricular node, bundle of His and Purkynje fibres)
 - The role of each of the structures in the heart beat
- Relative structure and function of blood vessels (capillaries, veins and arteries).

Learners should be able to recognise different types of circulatory systems including single circulation; open (eg arthropods and molluscs) and closed (fish and mammals) circulatory systems

Topic 1.2

Learners should be able to describe the structure and function of the respiratory system and how it has adapted in certain species:

- Mammalian structure – nasal chambers, larynx, trachea, bronchi, bronchioles, lungs, alveoli and diaphragm
- Function – gas exchange in the alveoli and ventilation of the lungs.

Learners should be able to have an appreciation of comparative adaptations: Fish (gills), Amphibians (skin), birds (air sacs), Invertebrates (spiracles, tracheae and book lungs).

Topic 1.3

Learners should be able to describe the location, structure and function of the reproductive systems in a range of animals:

- Male: Penis, prepuce, urethra, bulbos glandosus, epididymis, vas deferens, testis (testosterone, oestrogen) and prostate gland
- Female: Vulva, vagina, cervix, uterus, oviduct and ovaries.

Learners should have an appreciation of comparative adaptations (eg, in cats, whales, pigs).

Learners should understand the stages of:

- The oestrus cycle including hormonal control (oestrogen, progesterone, LH and FSH) and human influence on breeding (Eg Hormonal injections in bitches and broodmares)
- Sexual reproduction (copulation, fertilization, implantation, gestation and parturition (prolactin and oxytocin).

Learners should have an appreciation of comparative adaptations (oviparous, viviparous, ovoviviparous, egg-laying mammal and marsupials).

Topic 1.4

Learners must be able to identify the structures which make up the excretory system and describe their functions:

- Kidneys (ultrafiltration and reabsorption), ureters, bladder (voluntary and involuntary control), urethra.

Learners should have an appreciation of comparative adaptations (eg, in birds, desert mammals and aquatic animals).

Topic 1.5

Learners must be able to identify the structure and function of the mammalian musculoskeletal system.

Learners will be able to comment on the advantages and disadvantages of the mammalian skeletal adaptations, as well as applying the basic theory to other animals including extinct species lines. The use of timelines could be used to illustrate the great lengths of time involved in the process of evolution. Case studies comparing normal function of skeletal components against those that are diseased or injured can be useful to highlight the importance of the skeletal system.

Learners should describe skeletal adaptations in animals living in contrasting environments, linking structure to function which may include:

- Aquatic mammals (eg cetaceans)
- Flying mammals (eg bats)

- Hopping mammals (eg rabbits)
- Running mammals (eg horses, cheetah).

Learning outcome:

2. Understand control mechanisms in animals

Topics

- 2.1 Structure and function of hormonal mechanisms in the endocrine system
- 2.2 Structure and function of the lymphatic system
- 2.3 Structure and function and adaptations of the thermoregulatory system

This outcome covers the action and effects of control mechanisms in maintaining equilibrium within the body. This will include understanding of the function of hormones within the endocrine system, as well as the immune system and neural control of homeostasis.

Topic 2.1

Learners must be able to describe the structure and function of hormonal mechanisms in the endocrine system:

- Homeostasis in relation to sugar and water levels in the blood
- Requirement of receptors on cell surface
- Circulating hormones (eg, insulin) versus locally acting hormones (eg histamine).

Learners must also be able to locate the major endocrine glands and describe their function:

- Hypothalamus
- Pituitary gland
- Pancreas
- Adrenal
- Thyroid and para-thyroid
- Ovaries
- Testes.

Topic 2.2

Learners should be able to describe the structure and function of the lymphatic system:

- Structure of glands and vessels
- Functions:
 - Drain excess fluid
 - Aid in fat digestion
 - Transport of materials
 - Immune system (thymus, t-lymphocytes and b-lymphocytes).

Topic 2.3

Learners should be able to describe thermoregulatory systems:

- Homeostasis in relation to temperature control
- Endotherms
- Ectotherms.

Learning outcome:

3. Understand the neural control mechanisms in animals

Topics

- 3.1 Gross anatomy of the brain
- 3.2 Neural control mechanisms in animals

This outcome covers the gross anatomy of the brain and the main components that make up the nervous system. Models or online dissections could be used to illustrate the structures within the brain, with links made as to functions.

Topic 3.1

Learners should be able to identify functions and describe the gross anatomy of the brain, to include:

- Forebrain (thalamus, hypothalamus, cerebral cortex and limbic system)
- Midbrain (reticular formation and neuron receptors)
- Hindbrain (medulla, cerebellum and pons).

Topic 3.2

Learners should be able to identify and describe the main components which make up the central, peripheral and autonomic nervous systems:

- Central Nervous System
- Peripheral Nervous System (afferent and efferent)
- Autonomic Nervous system (sympathetic and parasympathetic actions).

Learning outcome:

4. Understand how animals' senses have adapted to their environment

Topics

- 4.1 How animal's senses are adapted to their environment
- 4.2 Specialised senses

This outcome is to examine the interaction of the animal with its environment. A comparison between predator and prey species should be emphasised at each stage. The structure and function of the mammalian eyes would be enhanced by dissections if facilities allow and simple experiments (eg the blind spot, pupil shape in different animal species).

Topic 4.1

The learner needs to be able to describe the structure and function of the main senses and link them to their stimuli, and also compare between prey and predator:

- Eye (cornea, pupil, iris, ciliary body, lens, sclera, retina (rod and cone cells), choroid, fovea, optic disc, optic nerve, medial and lateral rectus muscles)
- Ear (pinna, auditory meatus, tympanic membrane, malleus, incus, stapes, oval window, round window, cochlea, organ of Corti, cochlear nerve and semi-circular canals)
- Nose (nasal chambers, turbinates, olfactory nerve and olfactory bulb)
- Mouth (taste buds, soft palate and hard palate)
- Touch (skin receptors).

Topic 4.2

The learner needs to describe a range of specialised senses and appreciate why they have evolved, to include two animals in contrasting environments (eg arid/ aquatic, cold/hot, high/ low altitudes, high/ low pressure):

- Tactile organs (Eg Platypus beak, lateral line in fish and vibrissae)
- Taste and smell (Eg Jacobson organ)
- Electroreception (ampullae of Lorenzini)
- Echolocation (bats and dolphins).

Guidance for delivery

Tutors have many opportunities to deliver the unit using a wide range of learning approaches including lectures, discussions, seminar presentations, supervised dissections and live animal handling. Where dissections are used this should be in line with the centres' ethical policies. Tutors should consider integrating the delivery and private study of this unit with other relevant units. It is particularly recommended that the unit covering Cellular Biology should be included for any learner looking to progress in a science based career or further training.

It is expected that learners will be familiar with safe working practices around potentially hazardous equipment, materials and animals. The learner should be taught how to recognise hazards and risks and should also be able to use information to manage potential risks to themselves and others as appropriate.

Throughout the unit, the emphasis should be on safe working. It is expected that the learners are guided towards safe working practices and maintaining the welfare of the animals by recognising and minimising stress.

Unit 307

Animal Welfare and Breeding

UAN:	J/507/7116
Level:	3
GLH:	60

What is this unit about?

The purpose of this unit is for learners to know about evolution, how animals have evolved and the processes of domestication. Learners will investigate the uses of animals in human society and the welfare issues that can arise from this. The learner will have a working knowledge of the current United Kingdom animal welfare legislation and the organisations that aim to promote animal welfare.

Learning outcomes

In this unit, learners will be able to

1. Understand animal evolution and the development of domestic breeds
2. Understand the roles of animals in human society
3. Understand current United Kingdom animal welfare legislation
4. Understand the roles and aims of animal welfare organisations
5. Understand how to manage breed stock and young animals
6. Understand the uses of reproductive technology.

Scope of content

This section gives details of the scope of content to be covered in the teaching of the unit to ensure that all the learning outcomes can be achieved.

Learning outcome:

1. Understand animal evolution and the development of domestic breeds

Topics

1.1 The principles of animal evolution

1.2 Development of selected domesticated breeds

1.3 The effect of domestication on the welfare needs of animals

Topic 1.1

Learners need to outline the principles of animal evolution to include:

- Darwin's theories of evolution
- Natural selection
- Survival of the fittest
- Mutations
- Adaptations.

Learners need to understand the causes of species extinction, to include:

- Pollution
- introduction of non-native species
- habitat destruction and climate change and natural disasters (eg earthquakes, flooding).

Topic 1.2

Learners need to understand the development of selected domestic breeds, to include:

- Processes involved in domestication (eg capturing, taming, selective breeding)
- Selection of breed characteristics: appearance, conformation, behavioural traits, characteristics of working animals and companion animals.

Topic 1.3

Learners need to understand the effect of domestication on the welfare needs of animals, to include:

- Hereditary conditions in breeds (eg progressive retinal atrophy in cats and dogs, hip dysplasia, epilepsy and collie eye anomaly)
- Roles of breed societies and breed improvement on the welfare needs of animals.

Learning outcome:

2. Understand the roles of animals in human society

Topics

2.1 The commercial use of animals and animal products in human society and how their welfare maybe affected

2.2 The role of working animals in human society and how their welfare maybe affected

2.3 The roles of animals in human cultures and how their welfare maybe affected

Topic 2.1

Learners need to understand the commercial use of animals and animal products in human society

and how their welfare maybe affected, to include:

- Agriculture: meat, wool, skin, eggs and milk
- World trade: animal organs, meat, live animals, fur
- Medical: testing of products and medical procedures on animals (for example household products, animal drugs, human drugs).

Topic 2.2

Learners need to understand the role of working animals in human society and how their welfare maybe affected, to include:

- Guide dogs
- Pets as Therapy (PAT) dogs
- Sniffer dogs
- Search and rescue dogs
- Military and police dogs and horses
- Draught animals (equines, oxen, elephants)
- Gun dogs.

Topic 2.3

Learners need to understand the roles of animals in human cultures and how their welfare maybe affected, to include:

- Animals in the media: film, television, advertising, media portrayal
- Animals in sport and leisure, legal rural pursuits, hunting and angling, racing, horse trekking, riding schools and eventing, zoos, aquaria, wildlife parks and circuses
- Influence of culture and religion eg cats in Egypt, Christianity (dominion over animals), Judaism (forbidden to hunt animals), Islam (does not accept animal suffering), Hinduism (animals have souls, cows are very sacred and must not be eaten), dogs and other animals as fashion accessories and status symbols.

Learning outcome:

3. Understand current United Kingdom animal welfare legislation

Topics

3.1 United Kingdom animal welfare legislation

3.2 The objectives of selected current United Kingdom animal welfare legislation

Topic 3.1

Learners need to explain current relevant United Kingdom legislation, to include:

- Animal Welfare Act 2006
- Pet Animals Act 1951
- Animal Boarding Establishments Act 1963
- Riding Establishments Act 1970
- The Breeding of Dogs Act 1973 (as amended 1991)
- The Breeding and Sale of Dogs (Welfare) Act 1999
- The Performing Animals (Regulation) Act 1925
- Dangerous Dogs Act 1991.

Topic 3.2

Learners need to explain the main aims and objectives of current relevant United Kingdom legislation to include:

- Duty of Care and carer's responsibilities

- Definitions
- Exceptions
- Licences
- Penalties.

Learning outcome:

4. Understand the roles and aims of animal welfare organisations

Topics

4.1 Roles and aims of specified animal welfare organisations

4.2 The effectiveness of specified animal welfare organisations in the promotion of animal welfare

Topic 4.1

Learners need to understand the roles in education and increasing public awareness for specific animal welfare organisations, which may include:

- Royal Society for the Prevention of Cruelty to Animals (RSPCA)
- World Society for the Protection of Animals (WSPA)
- International Fund for Animal Welfare (IFAW)
- The League Against Cruel Sports
- British Horse Society (BHS)
- Royal Society for the Protection of Birds (RSPB)
- British Veterinary Association (BVA)
- The Animal Health Trust (AHT)
- The Blue Cross
- People's Dispensary for Sick Animals (PDSA)
- Universities Federation for Animal Welfare (UFAW)
- People for the Ethical treatment of Animals (PETA)
- Greenpeace
- Rare Breeds Survival Trust and breed societies.

Topic 4.2

Learners need to compare organisations' effectiveness, which may include:

- Media attention
- Campaigns
- Role in amending legislation and influences through education eg the banning of cosmetic testing on animals.

Learning outcome:

5. Understand how to manage breed stock and young animals

Topics

5.1 Factors to consider when selecting and managing breed stock

5.2 Management of female from conception to birth

5.3 Potential problems that could occur in the management of the female from conception to birth

5.4 The care requirements of offspring from birth to weaning

5.5 Problems that could occur in the offspring from birth to weaning

Topic 5.1

Learners need to understand the reasons for breeding eg production, pet trade, animal shows, work, companion, endangered species and conservation.

Learners need to understand how breeding stock is selected eg breeding females, stud male, genotypes and phenotypes.

Topic 5.2

Learners need to describe how to manage a female animal from conception to birth, to include:

- The stages of oestrus
- Mating
- Timing of mating
- Stages of pregnancy, parturition, preparation for parturition
- Stages of labour
- Nutrition during pregnancy through lactation and weaning
- Hygiene, health and safety.

Topic 5.3

Learners need to have an appreciation of the potential problems that can occur:

- Infertility, problems with mating (eg non-compatible males and females)
- Eclampsia
- Dystocia
- Post partum problems (eg retained placenta, uterine prolapse)
- Pyometra.

Topic 5.4

Learners need to describe the care requirements of offspring from birth to weaning, to include:

- Rearing
- Importance of colostrum
- Weaning, socialisation
- Early training
- Homing
- Regular checks eg weight gain, size, ears and eyes opening, eating normally and passing of urine and faecal waste.

Topic 5.5

Learners need to have an appreciation of problems that could occur in the offspring from birth to weaning, which may include:

- Congenital abnormalities and hereditary defects
- Orphans
- Hand-rearing
- Fostering
- Weaning
- Fading puppy/kitten syndrome
- Toxic milk syndrome
- Umbilical infection
- Swimmers

- Herpes
- Hernias
- Cleft palate
- Still births.

Learning outcome:

6. Understand the uses of reproductive technology

Topics

6.1 Types of breeding problems that can occur

6.2 Types of reproductive technologies that are available for animal breeders

6.3 How reproductive technologies can be used by animal breeders

Topic 6.1

Learners need to have an appreciation of the types of breeding problems that can occur, which may include:

- Infertility
- Restricted gene pool
- Health problems in the female, eg pseudo-pregnancy, ovarian imbalance, adult acromegaly, ovarian tumours
- Health problems in the male eg balanitis, phimosis, prostate problems, cryptorchidism, monorchidism, orchitis.

Topic 6.2

Learners need to describe the types of reproductive technologies that are available for animal breeders, which may include:

- Infertility treatments
- Superovulation
- Synchronisation
- Ovulation indicators
- Artificial insemination
- Embryo transplants
- Cloning
- Genetic analysis
- Genetic engineering.

Topic 6.3

Learners need to have an appreciation of how reproductive technologies can be used by animal breeders, which may include:

- Breed development and improvement
- Use of animals for breeding (eg use of teaser animals, surrogate mothers)
- To increase productivity
- To ensure timing of births enhances management of offspring.

Guidance for delivery

Throughout the unit, the emphasis should be on safe working. It is expected that learners will be aware of safe working practices and familiar with accepted practices and behaviours within the context in which they are working. The unit should also emphasize animal welfare with due consideration to the Animal Welfare Act 2006 and the duty of care towards animals.

Learning outcome 1 covers the relationship between animal evolution and the development of a domesticated breed. Learners will need to have an appreciation of the effects of domestication of the welfare needs of animals. It is anticipated that this outcome will require formal delivery and discussion with learners. Emphasis should be placed on how the development of a selected breed has been influenced by humans (as opposed to evolution alone).

Learning outcome 2 is likely to be delivered by formal lectures and visits (for example to zoos, animal sanctuaries, city farms and racing stables). Learners should be allowed to explore areas, within the context of the outcome that they are particularly interested in.

Learning outcome 3 is likely to be delivered through formal lectures which could be enhanced by visiting speakers (for example RSPCA Inspectors and local Environmental Health Officers). Learners should have an overview of the range of legislation, though it is not expected that all will be covered in great detail. Specific relevant examples of legislation (for example the Animal Welfare Act 2006) may be covered in more depth.

In Learning outcome 4, learners will research different organisations that aim to promote animal welfare, in order to identify their roles and aims and compare their effectiveness. It is anticipated that this outcome will require some formal delivery, visits (for example to animal rescue centres) and visiting speakers (for example from Guide Dogs, PAT dogs and Police/ Armed Forces Dog and Horse Units).

Learning outcome 5 is likely to be delivered by formal lectures and discussion. Visits to animal breeding establishments (such as farms and rare breed centres) would enhance the delivery of this outcome. Visiting speakers (eg an animal breeder) would also be beneficial. Audio visual material will be useful.

In Learning outcome 6, learners are required to explain the types of breeding problems that can occur in animals. Learners will be required to research different types of reproductive technologies that can be used and identify appropriate uses for those technologies. Visits to animal breeding establishments (such as farms and rare breed centres) would enhance the delivery of this outcome. Visiting speakers (eg an animal breeder or someone who practices artificial insemination) would also be beneficial.

Learners working at level 3 are likely to have some experience in animal welfare. This unit aims to extend the learner knowledge and skills involved in promotion of welfare and management of animals.

Centres are encouraged to introduce employers and specific professionals from industry to provide interesting and relevant information to the learner. Teaching would also benefit from visits to a variety of establishments to add depth to the learner experience.

Unit 362

Undertake Estate Skills

UAN:	K/507/4645
Level:	3
GLH:	60

What is this unit about?

The purpose of this unit is to introduce learners to common estate skills and knowledge and how these can be applied in practice. It is designed for learners in centre-based settings looking to progress into the sector or into further/higher education.

The learner will look at constructing, repairing and maintaining boundaries, structures and surfaces. They will build their experience and confidence in developing practical skills in a range of situations. The learner will be able to contextualise practical management work to a particular habitat that lies within their primary area of learning.

Learning outcomes

In this unit, learners will be able to

1. Construct, repair or maintain boundaries
2. Construct, repair or maintain structures
3. Construct, repair or maintain surfaces
4. Carry out practical habitat management work

Scope of content

This section gives details of the scope of content to be covered in the teaching of the unit to ensure that all the learning outcomes can be achieved.

Learning outcome:

1. Construct, repair or maintain boundaries

Topics

- 1.1 Prepare for work on boundaries
- 1.2 Select equipment and materials
- 1.3 Construct, repair or maintain boundaries

In this outcome learners will develop the practical skills needed to construct, repair or maintain at least **two** different boundaries.

Boundaries, eg:

- Hedge, bank, ditch,
- Fence (post and rail, post and wire, electric, netting)
- Wall (stone, brick).

Topic 1.1

Learners will plan the task, clear debris and prepare the site, ensure livestock and public safety, consider factors associated with the location (eg power supply, waste disposal, equipment and materials storage).

Topic 1.2

Learners will select materials and equipment relevant to the task, taking into account health and safety, sustainable practice and cost implications.

Topic 1.3

Learners will undertake the task safely (eg implementation of risk assessment and appropriate Personal Protective Equipment (PPE)) and to the required standards.

Learning outcome:

2. Construct, repair or maintain structures

Topics

- 2.1 Prepare for work on structures
- 2.2 Select equipment and materials
- 2.3 Construct, repair or maintain structures

In this outcome, learners will construct, repair or maintain at least two different structures. These may typically be constructed from wood, metal, stone or brick. Learners are not expected to be able to fully construct substantial structures such as animal or machinery housing, however, it is anticipated that delivery could include repair and maintenance of such larger structures as would be found in an estate setting.

Structures eg:

- Gate

- Stile
- Horse jump
- Bird box
- Table
- Bench
- Door
- Raised bed
- Composting area or swim platform
- Large structures requiring repair or maintenance may include animal house or pen, machinery or feed store, garden furniture, shed and pergola.

Topic 2.1

Learners will plan the activity, clear debris and prepare the site, ensure livestock and public safety, consider location factors (power supply, waste disposal, equipment and materials storage).

Topic 2.2

Learners will select materials and equipment relevant to the task, taking into account health and safety, sustainable practice and cost implications.

Topic 2.3

Learners will undertake the task safely (eg implementation of risk assessment and appropriate Personal Protective Equipment (PPE)) and to the required standards.

Learning outcome:

3. Construct, repair or maintain surfaces

Topics

3.1 Prepare for work on surfaces

3.2 Select equipment and materials

3.3 Construct, repair or maintain surfaces

In this outcome learners are required to construct, repair or maintain one surface (eg path, road and hard standing) which could be either solid (eg decking, concrete and paving), or loose (eg gravel, wood chippings and sand). Where appropriate, learners should be aware of timeliness considerations, for example preparing concrete at the right time for construction.

Topic 3.1

Learners will plan the task, clear debris and prepare the site, ensure livestock and public safety, consider factors associated with the location (eg power supply, waste disposal, equipment and materials storage).

Topic 3.2

Learners will identify and select materials and equipment relevant to the task, taking into account health and safety, sustainable practice and cost implications.

Topic 3.3

Learners will undertake the task safely (eg implementation of risk assessment and appropriate Personal Protective Equipment (PPE)) and to the required standards.

Learning outcome:

4. Carry out practical habitat management work

Topics

- 4.1 Prepare for habitat management work
- 4.2 Select equipment and materials
- 4.3 Carry out practical habitat management work

In this outcome learners are required to undertake practical habitat management work (eg mowing, renovation, tree and shrub planting, clearing unwanted vegetation, coppicing, pruning, thinning, pond, stream and ditch clearance, and control of invasive species). Where appropriate, learners should be aware of time considerations, for example preparing concrete at the right time for construction.

Topic 4.1

Learners will plan the task, clear debris and prepare the site, ensure livestock and public safety, consider factors associated with the location (eg power supply, waste disposal, equipment and materials storage).

Topic 4.2

Learners will identify and select materials and equipment relevant to the task, taking into account health and safety, sustainable practice and cost implications.

Topic 4.3

Learners will undertake the task safely (eg implementation of risk assessment and appropriate Personal Protective Equipment (PPE)) and to the required standards.

Guidance for delivery

This unit has a very practical focus, and aims to enable learners to develop estate skills which can be applied to a range of situations and circumstances. The unit has been written such that naturally occurring and locally relevant opportunities can be used in selecting sites, structures and surfaces to construct, repair or maintain.

As learners will be engaged in practical activity there should be an emphasis on safe working practices, including the use of appropriate personal protective equipment (PPE), and appropriate risk assessments should be undertaken. At Level 3 it is expected that learners will take an active part in completing risk assessments, so that this becomes an integral part of all practical activity. Learners should also be made aware of the impact on the environment, and sustainability concepts should also be demonstrated where possible.

Learners should have the opportunity to undertake estate skills activity in a land-based setting wherever possible to maximise the vocational relevance. It will be most beneficial if the structures, boundaries and surface selected are for a clear purpose above and beyond delivery of this unit. It is recognised that there will not be opportunities to carry out construction, repair *and* maintenance in each of the categories, but it would be appropriate for the skills of construction, repair and maintenance to each be developed in one aspect of the unit.

It is anticipated that most delivery of this unit will take place in a practical setting, with supervised practice of skills. Delivery will also include some classroom based activity in ensuring learners have a good understanding of planning, materials selection and preparation, and underpinning knowledge.

Suggested learning resources

Books

Dry Stone Walling: A Practical Handbook Published by: The Conservation Volunteers, 1999 ISBN-10: 0946752192	Agate, E (Ed); Brooks, A & Adcock, S
Fencing: A Practical Handbook Published by: The Conservation Volunteers, 2001	Agate, E
Footpaths: A Practical Handbook Published by: The Conservation Volunteer, 2001	Agate, E
Hedging: A Practical Handbook Published by: The Conservation Volunteer, 1998 ISBN-10: 0946752176	Agate, E & Brooks, A
Tree Planting and Aftercare: A Practical Handbook Published by: The Conservation Volunteer, 2001 ISBN-10: 0946752257	Agate, E (Ed)
Tool Care: A Maintenance and Workshop Manual Published by: The Conservation Volunteer, 2000	Agate, E
Waterways & Wetlands: A Practical Handbook Published by: The Conservation Volunteer, 2001	Agate, E
Woodlands: A Practical Handbook Published by: The Conservation Volunteer, 2002 ISBN-10: 0946752338	Agate, E (Ed)
Hedges and Hedgelaying – A Guide to Planting, Management and Conservation Published by: The Crowood Press, 2006 ISBN-10: 1847976174	Maclean, M
Poultry House Construction Published by: Gold Cockerel Books, 1997 ISBN-10: 0947870210	Roberts, M
The Smallholder's DIY Published by: Gold Cockerel Books, 1999 ISBN-10: 0947870172	Roberts, M
Farm and Smallholder Fencing: A Practical Guide to Permanent and Electric Livestock Fencing on the Farm and Smallholding Published by: Gold Cockerel Books, 2005 ISBN-10: 0947870423	Roberts, M.
Health and Safety Overview for Practical Conservation Project: A Guide to Good Practice for Conservation Groups and Land Managers Published by: The Conservation Volunteer, 1999	Stokes, A

Websites

The Conservation Volunteers	www.tcv.org.uk
Department for Environment, Food and Rural Affairs	www.defra.gov.uk
Health and Safety Executive	www.hse.gov.uk
The Wildlife Trusts	www.wildlifetrusts.org
Forestry Commission	www.forestry.gov.uk

Unit 364

Business management in the Land-Based sector

UAN:	A/507/4648
Level:	3
GLH:	60

What is this unit about?

The purpose of this unit is for learners look at the businesses within the land based sector, the role and responsibilities of those employed in land-based businesses and resource requirements.

This unit links closely to Unit 302: Undertake and review work related experience in the Land-based Industries.

Learning outcomes

In this unit, learners will be able to

1. Understand the breadth and importance of an industry in the land-based sector
2. Understand business resources and structures
3. Understand the business marketplace
4. Understand how to use financial and physical record keeping systems

Scope of content

This section gives details of the scope of content to be covered in the teaching of the unit to ensure that all the learning outcomes can be achieved.

Learning outcome:

1. Understand the breadth and importance of an industry in the land-based sector

Topics

1.1 Importance to the economy

1.2 Associated businesses

In this outcome, learners will investigate the size, scope and importance of their specialist sector within the environment and land-based industries, and how this has developed over the last 50 years or so. They will also investigate the range of business types and other organisations that are represented in their sector, including important regulatory, professional or representative organisations. Wherever possible this should be related to specific businesses and organisations.

Topic 1.1

Learners will understand the importance of businesses within the industry to the economy:

- Using measures available to the industry, including:
 - Value of output
 - Contribution to gross domestic product (gdp)
 - Employment
 - Land use
 - Economic and social benefits
 - Trends in importance
- Range of organisations:
 - Typical types of businesses and other organisations (eg representative, regulatory, not-for-profit)
 - Regional variations
 - Changes and developments in the last 50 years.

Topic 1.2

Learners will understand the range of associated businesses allied to the industry, to include:

- Relevant industries in primary, secondary and tertiary industrial sectors (eg suppliers of raw materials, processors, distributors, retailers, service providers)
- Associated organisations:
 - Specific interrelationships between one business and other associated organisations eg:
 - Suppliers of goods and services
 - Representative organisations and professional bodies
 - Regulatory bodies
 - Competitors
 - Customers
 - Aims and roles of important organisations in the sector.

Learning outcome:

2. Understand business resources and structures

Topics

- 2.1 Legal structure and organisation
- 2.2 Physical resource requirements
- 2.3 Job roles and responsibilities

This outcome focuses on the legal and resource implications of constituting a business. Learners will learn about the range of business organisations in the private and public sectors, and the legal and practical implications of different business types. This should be related to the types of business important in their sector. Learners will investigate the physical resource requirements of businesses, and how they are managed.

Topic 2.1

Learners will understand the legal structure and organisation for the following business types:

- Sole trader
- Partnership
- Limited company
- Not-for-profit organization
- Charity
- Public sector organisations
- Organisation staffing structure.

Topic 2.2

Learners will understand the physical resource requirements of a selected land-based business, to include:

- Property ie forms of tenure, appraisal of business potential
- Vehicles and machinery
- Tools and equipment
- Materials ie stocks control procedures
- Insurance of physical resources.

Topic 2.3

Learners will understand different job roles and responsibilities in a selected land-based business.

- Job roles relevant to the sector, including:
 - Director
 - Manager
 - Supervisor
 - Team worker
 - Trainee
 - Administrator
 - Volunteer
 - Sub contractor
- For each of the above job roles, learners will explore:
 - Job description (eg responsibilities for financial physical and human resources, staff motivation and performance management)
 - Person specification (typical skills, qualifications and experience required to fulfil the role)
 - Legal rights and responsibilities in work (eg pay, working hours, holidays, equal opportunities, health and safety, employment protection).

Learners will know relevant employment legislation, including:

- Employment Act 2002
- National minimum wage Act 1998
- Working times regulation Act 1998
- Equality Act 2010.

Learning outcome:

3. Understand the business marketplace

Topics

3.1 Marketplace, customers and competitors

3.2 Supply chain

3.3 Quality management

In this outcome, learners will analyse the market for a specific land-based business. This could involve a case study project and should identify, for that business, information on the content listed. External influences should be relevant and current to that business. Specific competitors should be identified and analysed to identify strengths and weaknesses to the case study business. When investigating the supply chain learners will need to identify the flow of resources from production of raw materials, through relevant manufacture and processing, to end consumers. Quality management will include reference to any formal standards or approvals that are relevant. It should also consider the quality standards required by the industry, any systems and practices that are used to achieve quality, and implications of failing to meet prescribed or assumed levels of quality.

Topic 3.1

Learners will understand the marketplace, customers and competitors for a land-based business by investigating the following:

- Size of market ie value of sales, number of customers
- External influences on the market ie political, economic, socio-cultural, technological
- Customer base ie number, type, characteristics, market segments
- Competitor analysis ie direct and indirect competitors.

Topic 3.2

Learners will understand the importance of efficiency and interdependency in a supply chain in a land-based context, considering the following:

- Suppliers
- Distributors
- Customers
- Supply chain assurance
- Ethics.

Topic 3.3

Learners will understand quality management systems and practices within a land-based business:

- Important aspects of quality in the sector
- Formal quality standards or approval eg BALI approved, Plant Passports, British Standards
- Informal systems and practices to achieve quality
- Problems arising if quality is not achieved.

Learning outcome:

4. Understand how to use financial and physical record keeping systems

Topics

4.1 Financial records

4.2 Physical records

4.3 Monitor business performance and progress

This outcome focuses on the range of financial and physical records that are required to meet legal requirements as well as to ensure effective business operation. Learners will complete a range of financial records. They should be aware of paper-based and computerised systems for financial records but are not expected to become competent in the use of IT accounts software. The range of physical records investigated should be related to the needs of the learners' specialist sector, and should include important current examples of legally required records. In addition to completing a range of records, learners will investigate how specific examples can be used to aid decision making, monitor and control business performance.

Topic 4.1

Learners will understand the importance of keeping accurate financial records for a selected land-based business in relation to legal requirements and management efficiency. Learners will understand the following financial records:

- Purchasing and ordering procedures
- Order forms and orders
- Deliveries and receipts
- Invoices and sales records
- Credit control
- Payment methods
- Bookkeeping ie cash analysis, petty cash, cash flow, budgets, computer accounts programmes
- Basic accounts ie trading account, balance sheet, depreciation
- Taxation ie VAT, income tax PAYE, national insurance contributions, corporation tax
- Wage calculation.

Topic 4.2

Learners will understand the importance of recoding physical records for a selected land-based business, to include:

- Production
- Inputs
- Staffing
- Customers
- Resource use
- Data protection
- Legal requirements to keep records eg pesticide use, veterinary medicines, transport, animal movement, passports.

Topic 4.3

Learners will understand how financial and physical records are used in monitoring business performance and progress, to include:

- Production levels
- Costs of production
- Financial efficiency
- Monitoring against targets
- Budgets
- Previous periods
- Relevant review periods ie weekly, monthly, annually
- Appropriate remedial actions
- Staff roles in recording and analysing information.

Guidance for delivery

This unit is designed to provide the learner with an understanding of the business aspects of their industry. It is applicable to all sectors of the environment and land-based sector and learners focus their study on the sector most relevant to their vocational interests.

Centres are encouraged to introduce employers and specific professionals from industry to provide interesting and relevant information to the learner. Teaching would also benefit from visits to a variety of establishments to add depth to the learner experience.

It is accepted that formal lectures will be necessary at level 3 but for this unit it is recommended that they are they are linked directly with interactive lessons in a real environment.

Appendix 1 Sources of general information

The following documents contain essential information for centres delivering City & Guilds qualifications. They should be referred to in conjunction with this handbook. To download the documents and to find other useful documents, go to the **Centres and Training Providers homepage** on www.cityandguilds.com.

City & Guilds Centre Manual

This document provides guidance for organisations wishing to become City & Guilds approved centres, as well as information for approved centres delivering City & Guilds qualifications. It covers the centre and qualification approval process as well as providing guidance on delivery, assessment and quality assurance for approved centres.

It also details the City & Guilds requirements for ongoing centre and qualification approval, and provides examples of best practice for centres. Specifically, the document includes sections on:

- the centre and qualification approval process
- assessment, internal quality assurance and examination roles at the centre
- registration and certification of candidates
- non-compliance and malpractice
- complaints and appeals
- equal opportunities
- data protection
- management systems
- maintaining records
- internal quality assurance
- external quality assurance.

Our Quality Assurance Requirements

This document explains the requirements for the delivery, assessment and awarding of our qualifications. All centres working with City & Guilds must adopt and implement these requirements across all of their qualification provision. Specifically, this document:

- specifies the quality assurance and control requirements that apply to all centres
- sets out the basis for securing high standards, for all our qualifications and/or assessments
- details the impact on centres of non-compliance

The **centre homepage** section of the City & Guilds website also contains useful information on

Walled Garden: how to register and certificate candidates on line

Events: dates and information on the latest Centre events

Online assessment: how to register for e-assessments.

Useful contacts

UK learners General qualification information	E: learnersupport@cityandguilds.com
International learners General qualification information	E: intcg@cityandguilds.com
Centres Exam entries, Certificates, Registrations/enrolment, Invoices, Missing or late exam materials, Nominal roll reports, Results	E: centresupport@cityandguilds.com
Single subject qualifications Exam entries, Results, Certification, Missing or late exam materials, Incorrect exam papers, Forms request (BB, results entry), Exam date and time change	E: singlesubjects@cityandguilds.com
International awards Results, Entries, Enrolments, Invoices, Missing or late exam materials, Nominal roll reports	E: intops@cityandguilds.com
Walled Garden Re-issue of password or username, Technical problems, Entries, Results, e-assessment, Navigation, User/menu option, Problems	E: walledgarden@cityandguilds.com
Employer Employer solutions, Mapping, Accreditation, Development Skills, Consultancy	E: business@cityandguilds.com

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If you have a complaint, or any suggestions for improvement about any of the services that we provide, email: **feedbackandcomplaints@cityandguilds.com**

About City & Guilds

As the UK's leading vocational education organisation, City & Guilds is leading the talent revolution by inspiring people to unlock their potential and develop their skills. City & Guilds is recognised and respected by employers across the world as a sign of quality and exceptional training.

City & Guilds Group

The City & Guilds Group is a leader in global skills development. Our purpose is to help people and organisations to develop their skills for personal and economic growth. Made up of City & Guilds, City & Guilds Kineo, The Oxford Group and ILM, we work with education providers, businesses and governments in over 100 countries.

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