Level 3 Certificate, Subsidiary Diploma, 90-Credit Diploma, Diploma and Extended Diploma in Horse Management (0079-03)

www.cityandguilds.com
August 2017 Version 3.1

Qualification handbook for centres
500/8565/7
500/8714/9
600/6114/5
500/8709/5
500/8708/3

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Level 3 Certificate, Subsidiary Diploma, 90-Credit Diploma, Diploma and Extended Diploma in Horse Management (0079-03)

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Qualification title	Number	QAN
Level 3 Certificate in Horse Management	0079-03	500/8565/7
Level 3 Subsidiary Diploma in Horse Management	0079-03	500/8714/9
Level 3 90-Credit Diploma in Horse Management	0079-03	600/6114/5
Level 3 Diploma in Horse Management	0079-03	500/8709/5
Level 3 Extended Diploma in Horse Management	0079-03	500/8708/3

Version and date	Change detail	Section
3.1 August 2017	Added GLH & TQT details Removed QCF	Introduction to the qualification Qualification structure, Summary of Units and Appendix 2

Contents

1 Introduction to the qualifications

Qualification title and level	GLH	TQT	City & Guilds qualification number	Qualification accreditation number
Level 3 Certificate in Horse Management	180	300	0079-03	500/8565/7
Level 3 Subsidiary Diploma in Horse Management	360	600	0079-03	500/8714/9
Level 3 90-Credit Diploma in Horse Management	540	900	0079-03	600/6114/5
Level 3 Diploma in Horse Management	720	1200	0079-03	500/8709/5
Level 3 Extended Diploma in Horse Management	1080	1800	0079-03	500/8708/3

Qualification summary

Qualification title and level	Credits	Guided Learning Hours (GLH)
Level 3 Certificate in Horse Management	30	180
Level 3 Subsidiary Diploma in Horse Management	60	360
Level 3 90-Credit Diploma in Horse Management	90	540
Level 3 Diploma in Horse Management	120	720
Level 3 Extended Diploma in Horse Management	180	1080

These qualifications meet the needs of learners in a centre-based environment who may wish to work within the horse industry or progress to further learning and/or training. These qualifications allow learners to develop underpinning knowledge whilst practising skills that could be used within employment in the horse industry. These qualifications replace the Level 3 Advanced National Certificate in Horse Management (0346-13) (QAN 500/2982/4) and the Level 3 Advanced National Diploma in Horse Management (0346-14) (QAN 500/3047/4) which expired on 31 December 2010.

These qualifications were developed in association with Lantra SSC, Landex and the industry.

Specialist Learning (SL)

Specialist Learning (SL) offers young people the opportunity to study a particular topic in more depth or broaden their studies through complementary learning. The Level 3 Certificate and Subsidiary Diploma in Horse Management have been approved as SL by the Environmental and Land-based Diploma DDP and Ofqual for the Advanced Diploma in Environmental and Land-based Studies. They have been designed to:

- complement principal learning within the Advanced Diploma in Environmental and Land-based studies
- provide a broad background understanding of the equine sector and an introduction to the practical skills and knowledge required
- provide an awareness of the range of jobs and work settings in the equine sector
- enable learners to make an informed assessment of their own aptitude for work in this sector and to make informed decisions about careers

- encourage learners to reach a level of knowledge and skills that will facilitate progress into further vocational learning or to potential employment in the sector
- introduce learners to the discipline of the working environment and to encourage mature attitudes to the community in general
- encourage learners to value continued learning and remain in the learning process
- allow learners to learn, develop and practise selected skills required for progression in the sector
- provide opportunities for progression to the Advanced Diploma in Environmental and Land-based and other related qualifications in the sector.

1.1 Qualification structure

Level 3 Certificate

To achieve the **Level 3 Certificate in Horse Management**, learners are required to achieve 30 credits from any combination of units in the table below.

Unit accreditation number	City & Guilds unit number	Unit title	Credit value	Excluded combination of units (if any)
Optional Units				
D6009365	**301**	**Understand and Promote Animal Health**	**10**	**60**
F6010332	303	Select, Fit and Evaluate Horse Tack and Equipment	10	60
T6009372	304	Plan and Monitor Animal Feeding	5	30
K6012513	305	Prepare Horses for Presentation	5	30
J6010378	306	Undertake Stable and Yard Management	10	60
L6010320	309	Understand the Principles of Horse Behaviour and Welfare	10	60
T6010389	310	Working Horses from the Ground	10	60
R6009136	311	Understand Grassland Management	10	60
R6010335	312	Understand and Apply the Principles of Horse Fitness	10	60
L6010303	313	Prepare and Provide Care for Competition Horses	10	60

J6010347	314	Understand the Principles of Horse Rehabilitation and Therapy	10	60
Y6010305	315	Understand the Principles and Practices of an Equine Stud	10	60
F6010377	316	Introduction to the Principles of Young Horse Handling, Training and Backing	10	60
L6010351	317	Riding and Exercising Horses	10	60
M6009810	318	Understand the Principles of Animal Nutrition	10	60
L6011516	319	Introduction to the Horse Driving Industry	10	60
R6011520	320	Introduction to the Horse Racing Industry	10	60

Level 3 Subsidiary Diploma

To achieve the **Level 3 Subsidiary Diploma in Horse Management** learners must achieve 60 credits from any combination of the optional units

Unit accreditation number	City & Guilds unit number	Unit title	Credit value	Excluded combination of units (if any)
Optional Units				
D6009365	**301**	**Understand and Promote Animal Health**	**10**	**60**
F6010332	303	Select, Fit and Evaluate Horse Tack and Equipment	10	60
T6009372	304	Plan and Monitor Animal Feeding	5	30
K6012513	305	Prepare Horses for Presentation	5	30
J6010378	306	Undertake Stable and Yard Management	10	60
J6009389	307	Understand the Principles of Animal Biology	10	60
K6009367	308	Understand Animal Anatomy and Physiology	10	60
L6010320	309	Understand the Principles of Horse Behaviour and Welfare	10	60
T6010389	310	Working Horses from the Ground	10	60
R6009136	311	Understand Grassland Management	10	60
R6010335	312	Understand and Apply the Principles of Horse Fitness	10	60

L6010303	313	Prepare and Provide Care for Competition Horses	10	60
J6010347	314	Understand the Principles of Horse Rehabilitation and Therapy	10	60
Y6010305	315	Understand the Principles and Practices of an Equine Stud	10	60
F6010377	316	Introduction to the Principles of Young Horse Handling, Training and Backing	10	60
L6010351	317	Riding and Exercising Horses	10	60
M6009810	318	Understand the Principles of Animal Nutrition	10	60
L6011516	319	Introduction to the Horse Driving Industry	10	60
R6011520	320	Introduction to the Horse Racing Industry	10	60
A6010359	321	Riding Horses on the Flat	10	60
T6010361	322	Riding Horses over Fences	10	60
K6010308	323	Understand the Principles of Equitation	10	60
M6009709	324	Business Management in the Land-based Sector	10	60
M6010021	325	Undertake an Investigative Project in the Land-based Sector	10	60
Y6009610	326	Undertake Estate Skills	10	60

A6009812	327	Undertake Retail Merchandising for the Land-based Sector	10	60
F6010380	328	Undertake Equestrian Teaching	10	60
F6011514	329	Contribute to Managing an Equine Event	10	60
M6010746	335	Prepare Horses for Transportation	5	30

Level 3 90-Credit Diploma

To achieve the **Level 3 90-Credit Diploma in Horse Management** learners must achieve 90 credits from any combination of the optional units.

Unit accreditation number	City & Guilds unit number	Unit title	Credit value	Excluded combination of units (if any)
Optional Units				
D6009365	**301**	**Understand and Promote Animal Health**	**10**	
R6009394	302	Undertake and Review Work Related Experience in the Land-based Industries	10	
F6010332	303	Select, Fit and Evaluate Horse Tack and Equipment	10	
T6009372	304	Plan and Monitor Animal Feeding	5	
K6012513	305	Prepare Horses for Presentation	5	
J6010378	306	Undertake Stable and Yard Management	10	
J6009389	307	Understand the Principles of Animal Biology	10	
K6009367	308	Understand Animal Anatomy and Physiology	10	
L6010320	309	Understand the Principles of Horse Behaviour and Welfare	10	
T6010389	310	Working Horses from the Ground	10	
R6009136	311	Understand Grassland Management	10	

R6010335	312	Understand and Apply the Principles of Horse Fitness	10	
L6010303	313	Prepare and Provide Care for Competition Horses	10	
J6010347	314	Understand the Principles of Horse Rehabilitation and Therapy	10	
Y6010305	315	Understand the Principles and Practices of an Equine Stud	10	
F6010377	316	Introduction to the Principles of Young Horse Handling, Training and Backing	10	
L6010351	317	Riding and Exercising Horses	10	
M6009810	318	Understand the Principles of Animal Nutrition	10	
L6011516	319	Introduction to the Horse Driving Industry	10	
R6011520	320	Introduction to the Horse Racing Industry	10	
A6010359	321	Riding Horses on the Flat	10	
T6010361	322	Riding Horses over Fences	10	
K6010308	323	Understand the Principles of Equitation	10	
M6009709	324	Business Management in the Land-based Sector	10	
M6010021	325	Undertake an Investigative Project in the Land-based Sector	10	

Y6009610	326	Undertake Estate Skills	10	
A6009812	327	Undertake Retail Merchandising for the Land-based Sector	10	
F6010380	328	Undertake Equestrian Teaching	10	
F6011514	329	Contribute to Managing an Equine Event	10	
M6010746	335	Prepare Horses for Transportation	5	

Level 3 Diploma

To complete the **Level 3 Diploma in Horse Management** learners must gain 40 credits from the mandatory units and 80 credits from the optional units. A total of 120 credits must be achieved.

Unit accreditation number	City & Guilds unit number	Unit title	Credit value	Excluded combination of units (if any)
Mandatory Units				
D6009365	**301**	**Understand and Promote Animal Health**	**10**	**60**
R6009394	302	Undertake and Review Work Related Experience in the Land-based Industries	10	60
F6010332	303	Select, Fit and Evaluate Horse Tack and Equipment	10	60
T6009372	304	Plan and Monitor Animal Feeding	5	30
K6012513	305	Prepare Horses for Presentation	5	30
Optional Units				
J6010378	306	Undertake Stable and Yard Management	10	60
J6009389	307	Understand the Principles of Animal Biology	10	60
K6009367	308	Understand Animal Anatomy and Physiology	10	60
L6010320	309	Understand the Principles of Horse Behaviour and Welfare	10	60
T6010389	310	Working Horses from the Ground	10	60

R6009136	311	Understand Grassland Management	10	60
R6010335	312	Understand and Apply the Principles of Horse Fitness	10	60
L6010303	313	Prepare and Provide Care for Competition Horses	10	60
J6010347	314	Understand the Principles of Horse Rehabilitation and Therapy	10	60
Y6010305	315	Understand the Principles and Practices of an Equine Stud	10	60
F6010377	316	Introduction to the Principles of Young Horse Handling, Training and Backing	10	60
L6010351	317	Riding and Exercising Horses	10	60
M6009810	318	Understand the Principles of Animal Nutrition	10	60
L6011516	319	Introduction to the Horse Driving Industry	10	60
R6011520	320	Introduction to the Horse Racing Industry	10	60
A6010359	321	Riding Horses on the Flat	10	60
T6010361	322	Riding Horses over Fences	10	60
K6010308	323	Understand the Principles of Equitation	10	60
M6009709	324	Business Management in the Land-based Sector	10	60

M6010021	325	Undertake an Investigative Project in the Land-based Sector	10	60
Y6009610	326	Undertake Estate Skills	10	60
A6009812	327	Undertake Retail Merchandising for the Land-based Sector	10	60
F6010380	328	Undertake Equestrian Teaching	10	60
F6011514	329	Contribute to Managing an Equine Event	10	60
M6010746	335	Prepare Horses for Transportation	5	30

Level 3 Extended Diploma

To achieve the **Level 3 Extended Diploma in Horse Management**, learners must successfully gain 70 credits from the mandatory units and a further 110 credits from the optional units. A total of 180 credits is required to achieve the qualification.

Unit accreditation number	City & Guilds unit number	Unit title	Credit value	Excluded combination of units (if any)
Mandatory Units				
D6009365	**301**	**Understand and Promote Animal Health**	**10**	**60**
R6009394	302	Undertake and Review Work Related Experience in the Land-based Industries	10	60
F6010332	303	Select, Fit and Evaluate Horse Tack and Equipment	10	60
T6009372	304	Plan and Monitor Animal Feeding	5	30
K6012513	305	Prepare Horses for Presentation	5	30
J6010378	306	Undertake Stable and Yard Management	10	60
J6009389	307	Understand the Principles of Animal Biology	10	60
K6009367	308	Understand Animal Anatomy and Physiology	10	60
Optional Units				
L6010320	309	Understand the Principles of Horse Behaviour and Welfare	10	60
T6010389	310	Working Horses from the Ground	10	60

R6009136	311	Understand Grassland Management	10	60
R6010335	312	Understand and Apply the Principles of Horse Fitness	10	60
L6010303	313	Prepare and Provide Care for Competition Horses	10	60
J6010347	314	Understand the Principles of Horse Rehabilitation and Therapy	10	60
Y6010305	315	Understand the Principles and Practices of an Equine Stud	10	60
F6010377	316	Introduction to the Principles of Young Horse Handling, Training and Backing	10	60
L6010351	317	Riding and Exercising Horses	10	60
M6009810	318	Understand the Principles of Animal Nutrition	10	60
L6011516	319	Introduction to the Horse Driving Industry	10	60
R6011520	320	Introduction to the Horse Racing Industry	10	60
A6010359	321	Riding Horses on the Flat	10	60
T6010361	322	Riding Horses over Fences	10	60
K6010308	323	Understand the Principles of Equitation	10	60
M6009709	324	Business Management in the Land-based Sector	10	60

M6010021	325	Undertake an Investigative Project in the Land-based Sector	10	60
Y6009610	326	Undertake Estate Skills	10	60
A6009812	327	Undertake Retail Merchandising for the Land-based Sector	10	60
F6010380	328	Undertake Equestrian Teaching	10	60
F6011514	329	Contribute to Managing an Equine Event	10	60
R5025536	330	Fundamentals of Science	10	60
D6009463	331	Understand the Principles of Inheritance and Genetic Manipulation	10	60
K5025557	332	Chemistry for Biology Technicians	10	60
J6009439	333	Understand the Principles and Carry Out the Practice of Biochemistry and Microbiology	10	60
A6009714	334	Understand the Principles of Chemistry for Biological and Medical Science	10	60
M6010746	335	Prepare Horses for Transportation	5	30

Total Qualification Time

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 Certificate in Horse Management	180	300
Level 3 Subsidiary Diploma in Horse Management	360	600
Level 3 90-Credit Diploma in Horse Management	540	900
Level 3 Diploma in Horse Management	720	1200
Level 3 Extended Diploma in Horse Management	1080	1800

1.2 Opportunities for progression

On completion of these qualifications learners may progress into employment or to the following City & Guilds qualifications:

- Level 4 and above centre-based qualifications in Horse Management eg. Foundation Degree, Higher National Diploma
- Level 3 or 4 qualifications in Work-based Horse Care and Management
- Other related qualifications

1.3 Qualification support materials

City & Guilds also provides the following publications and resources specifically for these qualifications:

Description	How to access
Assignment guide	www.cityandguilds.com
Marking guide	information@cityandguilds.com
Information sheets	www.cityandguilds.com
Fast track approval forms/generic fast track approval form	www.cityandguilds.com

2 Centre requirements

This section outlines the approval processes for Centres to offer these qualifications and any resources that Centres will need in place to offer the qualifications including qualification-specific requirements for Centre staff.

Centres already offering Level 3 Advanced National Certificate in Horse Management (0346-13) (QAN 500/2982/4) and/or the Level 3 Advanced National Diploma in Horse Management (0346-14) (QAN 500/3047/4)

Centres approved to offer the Level 3 Advanced National Certificate in Horse Management (0346-13) (QAN 500/2982/4) and/or the Level 3 Advanced National Diploma in Horse Management (0346-14) (QAN 500/3047/4) may apply for approval for the new Level 3 Certificate, Subsidiary Diploma, Diploma and Extended Diploma in Horse Management using the **fast track approval form**, available from the City & Guilds website.

Centres may apply to offer the new qualifications using the fast track form

- providing there have been no changes to the way the qualifications are delivered, and
- if they meet all of the approval criteria specified in the fast track form guidance notes.

Fast track approval is available for 12 months from the launch of the qualification. After this time, the qualification is subject to the **standard** Qualification Approval Process. It is the centre's responsibility to check that fast track approval is still current at the time of application.

New centres must apply for centre and qualification approval. Further information on this process is available on the City & guilds website.

Existing City & Guilds centres that do not offer the Level 3 Advanced National Certificate/Diploma in Horse Management (0346-13/0346-14) will need to get specific qualification approval to run these qualifications (contact your City & Guilds Local Office).

2.1 Resource requirements

Human resources

Staff delivering these qualifications must be able to demonstrate that they meet the following occupational expertise requirements. They should:

- be technically competent in the areas for which they are delivering training and/or have experience of providing training. This knowledge must be at least to the same level as the training being delivered
- have recent relevant experience in the specific area they will be assessing
- be occupationally knowledgeable in the areas of Horse Management for which they are delivering training. This knowledge must be at least to the same level as the training being delivered
- have credible experience of providing training.

Centre staff may undertake more than one role, eg tutor and assessor or internal verifier, but must never internally verify their own assessments.

Assessors and internal verifiers

The centre must provide Assessor personnel who must be occupationally competent in the industry either qualified to at least level 3 and/or have current experience of working in the industry at this level.

The centre must provide Internal Quality Assurance personnel who must be occupationally competent in the land-based sector either qualified to at least level 3 and/or have current experience of working in the industry at this level.

Assessors/Internal Quality Assurance personnel may hold relevant qualifications such as D32/33/34 or A1/V1 or TAQA however they are not a mandatory requirement for this qualification. They should have had formal training in assessment/IQA, which may be the qualifications above, or other training that allows the assessor to demonstrate competence in the practice of assessment/IQA. This training may be carried out in-house or with an external agency.

TAQA qualifications are considered very appropriate as Continuing Professional Development (CPD) or as best practice standards for new centre staff to work towards.

Continuing professional development (CPD)

Centres are expected to support their staff in ensuring that their knowledge remains current of the occupational area and of best practice in delivery, mentoring, training, assessment and verification, and that it takes account of any national or legislative developments.

2.2 Learner entry requirements

There are no formal entry requirements for learners undertaking these qualifications. However, centres must ensure that learners have the potential and opportunity to gain the qualifications successfully.

As part of the assessment for the Level 3 Diploma qualifications that contain work experience as a mandatory unit, learners must have access to a work setting/placement.

2.3 Age restrictions

These qualifications are approved/accredited for 16-18, 18+ and 19+ learners. However, there are no age limits attached to learners undertaking the qualification unless this is a legal requirement of the process or the environment.

3 Course design and delivery

3.1 Initial assessment and induction

Centres will need to make an initial assessment of each learner prior to the start of their programme to ensure they are entered for an appropriate type and level of qualification.

The initial assessment should identify:

- any specific training needs the learner has, and the support and guidance they may require when working towards their qualifications. This is sometimes referred to as diagnostic testing.
- any units the learner has already completed, or credit they have accumulated which is relevant to the qualifications they are about to begin.

City & Guilds recommends that centres provide an induction programme to ensure the learner fully understands the requirements of the qualifications they will work towards, their responsibilities as a learner, and the responsibilities of the centre. It may be helpful to record the information on a learning contract.

3.2 Recommended delivery strategies

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

Centres may design course programmes of study in any way which:

- best meets the needs and capabilities of their learners
- satisfies the requirements of the qualification[s].

When designing and delivering the course programme, centres might wish to incorporate other teaching and learning that is not assessed as part of the qualifications. This might include the following:

- Functional skills
- Personal learning and thinking skills (PLTS)

Where applicable, this could involve enabling the learner to access relevant qualifications covering these skills.

4 Assessment

4.1 Summary of assessment methods

For these qualifications, learners will be required to complete the following assessments:

- **one** assignment for **each** unit

City & Guilds provides the following assessments:

- Assignment guide containing assignments for each unit

Time constraints

The following time constraints must be applied to the assessment of these qualifications:

- All assignments must be completed and assessed within the learner's period of registration. Centres should advise learners of any internal timescales for the completion and marking of individual assignments.

4.2 Assignments

The assignment guide for these qualifications is available to download from **www.cityandguilds.com**.

4.3 Recognition of prior learning (RPL)

Recognition of Prior Learning (RPL) recognises the contribution a person's previous experience could contribute to a qualification. RPL is allowed and is also sector specific.

4.4 Resubmission of Assignments

Centres are advised to adopt the following policy on the re-submission of work:

Learners who fail an assignment on the formal (summative) submission, or who would like the opportunity to improve their grade, may re-submit once only and may then achieve either a Pass, Merit or Distinction as appropriate. An appropriate time period between formal submission and re-submission should be set by the centre. Multiple re-submissions are not permitted. Learners who fail to hand in work on the formal submission date, where there is no legitimate reason, should be capped to a maximum of a Pass grade only at the re-submission stage. It is at the discretion of the centre to set informal (formative) submission dates, if appropriate, and a formal submission date.

5 Units

Summary of units

City & Guilds unit number	Title	Unit number	Credits
301	Understand and Promote Animal Health	D6009365	10
302	Undertake and Review Work Related Experience in the Land-based Industries	R6009394	10
303	Select, Fit and Evaluate Horse Tack and Equipment	F6010332	10
304	Plan and Monitor Animal Feeding	T6009372	5
305	Prepare Horses for Presentation	K6012513	5
306	Undertake Stable and Yard Management	J6010378	10
307	Understand the Principles of Animal Biology	J6009389	10
308	Understand Animal Anatomy and Physiology	K6009367	10
309	Understand the Principles of Horse Behaviour and Welfare	L6010320	10
310	Working Horses from the Ground	T6010389	10
311	Understand Grassland Management	R6009136	10
312	Understand and Apply the Principles of Horse Fitness	R6010335	10
313	Prepare and Provide Care for Competition Horses	L6010303	10
314	Understand the Principles of Horse Rehabilitation and Therapy	J6010347	10
315	Understand the Principles and Practices of an Equine Stud	Y6010305	10
316	Introduction to the Principles of Young Horse Handling, Training and Backing	F6010377	10
317	Riding and Exercising Horses	L6010351	10
318	Understand the Principles of Animal Nutrition	M6009810	10
319	Introduction to the Horse Driving Industry	L6011516	10
320	Introduction to the Horse Racing Industry	R6011520	10
321	Riding Horses on the Flat	A6010359	10
322	Riding Horses over Fences	T6010361	10
323	Understand the Principles of Equitation	K6010308	10
324	Business Management in the Land-based Sector	M6009709	10
325	Undertake an Investigative Project in the Land-based Sector	M6010021	10
326	Undertake Estate Skills	Y6009610	10
327	Undertake Retail Merchandising for the Land-based Sector	A6009812	10
328	Undertake Equestrian Teaching	F6010380	10
329	Contribute to Managing an Equine Event	F6011514	10
330	Fundamentals of Science	R5025536	10

331	Understand the Principles of Inheritance and Genetic Manipulation	D6009463	10
332	Chemistry for Biology Technicians	K5025557	10
333	Understand the Principles and Carry Out the Practice of Biochemistry and Microbiology	J6009439	10
334	Understand the Principles of Chemistry for Biological and Medical Science	A6009714	10
335	Prepare Horses for Transportation	M6010746	5

Certification/grading modules

City & Guilds unit number	Title
910	Certification module for Level 3 Certificate in Horse Management – pass grade
911	Certification module for Level 3 Certificate in Horse Management - merit grade
912	Certification module for Level 3 Certificate in Horse Management - distinction grade
913	Certification module for Level 3 Subsidiary Diploma in Horse Management - pass grade
914	Certification module for Level 3 Subsidiary Diploma in Horse Management - merit grade
915	Certification module for Level 3 Subsidiary Diploma in Horse Management - distinction grade
916	Certification module for Level 3 Diploma in Horse Management - pass grade
917	Certification module for Level 3 Diploma in Horse Management - merit grade
918	Certification module for Level 3 Diploma in Horse Management - distinction grade
919	Certification module for Level 3 Extended Diploma in Horse Management - pass grade
920	Certification module for Level 3 Extended Diploma in Horse Management - merit grade
921	Certification module for Level 3 Extended Diploma in Horse Management - distinction grade
925	Certification module for Level 3 Certificate in Horse Management – distinction* grade
926	Certification module for Level 3 Subsidiary Diploma in Horse Management – distinction* grade
927	Certification module for Level 3 Diploma in Horse Management – distinction* grade
928	Certification module for Level 3 Extended Diploma in Horse Management – distinction* grade
941	Certification module for Level 3 90-Credit Diploma in Horse Management – pass grade
942	Certification module for Level 3 90-Credit Diploma in Horse Management – merit grade

943	Certification module for Level 3 90-Credit Diploma in Horse Management – distinction grade
944	Certification module for Level 3 90-Credit Diploma in Horse Management – distinction* grade

6 Registration and Certification

The Level 3 Certificate, Subsidiary Diploma, 90-Credit Diploma, Diploma and Extended Diploma in Horse Management qualifications have been grouped into one programme for registration.

Tutors and Examination Officers should ensure that learners are registered onto 0079-03 and that all 0079-03 documentation for teaching and administration with City & Guilds is used.

When learners' results are submitted to City & Guilds, centres should also submit the relevant Certificate, Subsidiary Diploma, Diploma and Extended Diploma certification/grading component, according to which units the learner has achieved, so that the appropriate certificate is generated. The overall grade can be calculated using the formula in the assignment guide.

Please note: There are four certification/grading modules for each of the qualifications which differentiates the four grades – pass, merit, distinction and distinction*. Once the overall grade for the assignments has been calculated, the correct certification/grading module needs to be indicated on the results entry.

For example, if a learner achieves the Level 3 Certificate in Horse Management at an overall merit grade, then the certification module 911 needs to be submitted. Please see the Rules of Combination below or the City & Guilds catalogue.

Level 3 Certificate in Horse Management QAN 500/8565/7	
Rules for achievement of qualification	30 credits from 301, (303 – 306), (309 – 320) Plus 910 for certification at pass grade

Level 3 Certificate in Horse Management QAN 500/8565/7	
Rules for achievement of qualification	30 credits from 301, (303 – 306), (309 – 320) Plus 911 for certification at merit grade

Level 3 Certificate in Horse Management QAN 500/8565/7	
Rules for achievement of qualification	30 credits from 301, (303 – 306), (309 – 320) Plus 912 for certification at distinction grade

Level 3 Certificate in Horse Management QAN 500/8565/7	
Rules for achievement of qualification	30 credits from 301, (303 – 306), (309 – 320) Plus 925 for certification at distinction* grade

Level 3 Subsidiary Diploma in Horse Management QAN 500/8714/9	
Rules for achievement of qualification	60 credits from 301, (303 – 329), 335 Plus 913 for certification at pass grade

Level 3 Subsidiary Diploma in Horse Management QAN 500/8714/9	
Rules for achievement of qualification	60 credits from 301, (303 – 329), 335 Plus 914 for certification at merit grade

Level 3 Subsidiary Diploma in Horse Management QAN 500/8714/9	
Rules for achievement of qualification	60 credits from 301, (303 – 329), 335 Plus 915 for certification at distinction grade

Level 3 Subsidiary Diploma in Horse Management QAN 500/8714/9	
Rules for achievement of qualification	60 credits from 301, (303 – 329), 335 Plus 926 for certification at distinction* grade

Level 3 90-Credit Diploma in Horse Management QAN 600/6114/5	
Rules for achievement of qualification	90 credits from (301 – 329), 335 Plus 941 for certification at pass grade

Level 3 90-Credit Diploma in Horse Management QAN 600/6114/5	
Rules for achievement of qualification	90 credits from (301 – 329), 335 Plus 942 for certification at merit grade

Level 3 90-Credit Diploma in Horse Management QAN 600/6114/5	
Rules for achievement of qualification	90 credits from (301 – 329), 335 Plus 943 for certification at distinction grade

Level 3 90-Credit Diploma in Horse Management QAN 600/6114/5	
Rules for achievement of qualification	90 credits from (301 – 329), 335 Plus 944 for certification at distinction* grade

Level 3 Diploma in Horse Management QAN 500/8709/5	
Rules for achievement of qualification	40 credits from (301 – 305), 80 credits from (306 –329), 335 Plus 916 for certification at pass grade

Level 3 Diploma in Horse Management QAN 500/8709/5	
Rules for achievement of qualification	40 credits from (301 – 305), 80 credits from (306 –329), 335 Plus 917 for certification at merit grade

Level 3 Diploma in Horse Management QAN 500/8709/5	
Rules for achievement of qualification	40 credits from (301 – 305), 80 credits from (306 –329), 335 Plus 918 for certification at distinction grade

Level 3 Diploma in Horse Management QAN 500/8709/5	
Rules for achievement of qualification	40 credits from (301 – 305), 80 credits from (306 –329), 335 Plus 927 for certification at distinction* grade

Level 3 Extended Diploma in Horse Management QAN 500/8708/3	
Rules for achievement of qualification	70 credits from (301 – 308) plus a minimum of 110 credits from (309 –335) Plus 919 for certification at pass grade

Level 3 Extended Diploma in Horse Management QAN 500/8708/3	
Rules for achievement of qualification	70 credits from (301 – 308) plus a minimum of 110 credits from (309 –335) Plus 920 for certification at merit grade

Level 3 Extended Diploma in Horse Management QAN 500/8708/3	
Rules for achievement of qualification	70 credits from (301 – 308) plus a minimum of 110 credits from (309 –335) Plus 921 for certification at distinction grade

Level 3 Extended Diploma in Horse Management QAN 500/8708/3	
Rules for achievement of qualification	70 credits from (301 – 308) plus a minimum of 110 credits from (309 –335) Plus 928 for certification at distinction* grade

- Learners must be registered at the beginning of their course. Centres should submit registrations using Walled Garden or Form S (Registration), under scheme/complex 0079-03.

- When assignments have been successfully completed results should be submitted on Walled Garden or Form S (Results submission). One of the certification/grading modules 910 to 921 or 925 to 944 need to be submitted to generate the appropriate certificate and grade. Centres should note that results will not be processed by City & Guilds until verification records are complete

- Learners achieving one or more assessment components will receive a Certificate of Unit Credit listing the assessment components achieved. Learners achieving the number and combination of assessment components required to meet a defined Rule of Combination will, in addition, be issued with a full certificate. Centres must submit a certification/grading component to allow this to happen.

Full details on the procedures for all City & Guilds qualifications registered and certificated through City & Guilds can be found on the City & Guilds on-line catalogue.

Unit 301 Understand and Promote Animal Health

Level: 3

Credit value: 10

Unit aim

This unit aims 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 indictors of health status. The learner will carry out health checks on 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

There are **four** learning outcomes to this unit. The learner will:

1. Be able to recognise indicators of health in animals
2. Understand common disease and disorders, their treatment and prevention
3. Be able to promote and maintain the health and wellbeing of animals
4. Know how to deliver and record basic animal treatments

Guided learning hours

It is recommended that **60** hours should be allocated for this unit. This may be on a full-time or part-time basis.

Details of the relationship between the unit and relevant national occupational standards

AC10.1 Implement plans to maintain animal health and welfare
AC10.2 Monitor and evaluate the maintenance of animal health and welfare
AC14.1 Provide information on how to maintain the behaviour, health and welfare of animals

Endorsement of the unit by a sector or other appropriate body

This unit is endorsed by Lantra SSC.

Assessment and grading

This unit will be assessed by:

- An assignment covering practical skills and underpinning knowledge.

Unit 301 Understand and Promote Animal Health

Outcome 1 Be able to recognise indicators of health in animals

Assessment Criteria

The learner can:

1. Describe the **indicators** of good and ill health in animals
2. Carry out **health checks** on animals
3. **Handle animals** in a way that complies with **legislation**, **minimises stress and injury**

Range

Horse Management – Horses, ponies or donkeys

Unit content

Indicators

Physical signs e.g. behaviour, movement, posture, coat condition, weight, ears eyes mouth and nose, tail, toes/feet/hooves (as appropriate) clinical signs e.g. temperature, pulse, respiration

Health checks

Routine, non-routine, animals of different life stages (young, breeding/pregnant, lactating, adult, geriatric), recording requirements, reporting requirements, acting on findings of ill health or problems

Handle animals

Reasons and techniques for handling - grooming, health checking, transportation, sexing, administration of treatments, handle animals of different ages, sizes and temperaments

Legislation

Animal Welfare Act 2006 and Animal Health and Welfare Act (Scotland) 2006, Health and Safety Act 1974, Welfare of Animals (Transport) Order 2006, Control of Substances Hazardous to Health (COSHH) 2002, The Welfare of Animals at Market Order 1990 (as amended 1993), The Welfare of Farmed Animals Regulations 2000 (as amended 2003), The Veterinary Surgeons Act 1966 (as amended 1996), The Welfare of Animals Regulations (slaughter or killing) 1995 (England) (amended 2007), Horse Passports Regulations (England) 2004, Pet Travel Scheme (PETS)

Minimising stress and injury

Safe and correct handling techniques, handling and restraint equipment (as appropriate to the species) pet carriers, collars, halters, headcollars, bridles, leads, muzzles, crates, catchpole, cattle crush, chases/runs, gates, tethers, snake hooks, snake bags, gloves and bird bag

Unit 301 Understand and Promote Animal Health

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

Assessment Criteria

The learner can:

1. Examine the **role of pathogenic organisms** in animal disease and the **immune system**
2. Explain **common diseases and disorders** in animals and their impact on health and welfare including **notifiable** and **zoonotic**
3. Explain the reasons and methods of **preventative care** and treatment measures used for animals

Range

Horse Management – Horses, ponies or donkeys

Unit Content

Role of pathogenic organisms and the immune system

Bacteria, viruses, fungi, prions, protozoa, ecto and endo parasites, the methods of disease transmission, infection, the immune response, immunity (passive, natural, active and artificial)

Common diseases and disorders

Principle causes (bacterial, viral, fungal and parasitic) routes of transmission – and signs of commonly found diseases and disorders in the range of species

Notifiable diseases

A notifiable disease is a disease named in section 88 of the Animal Health Act 1981 or an Order made under that Act. Section 15(1) of the Act – cover diseases appropriate to animals from the range

Zoonotic diseases

Diseases and infections which are naturally transmitted between vertebrate animals and man – cover diseases appropriate to animals from the range

Preventative care

Vaccinations, endo-parasite prevention, ecto-parasite prevention, care of teeth, claws/hooves and coat, use of prophylactics, isolation and quarantine

Unit 301 Understand and Promote Animal Health

Outcome 3 Be able to promote and maintain the health and wellbeing of animals

Assessment Criteria

The learner can:

1. Develop **plans** to promote and maintain animal health and wellbeing throughout the year
2. Implement measures to **promote** and maintain **the health and wellbeing of animals**
3. **Monitor and report** on animal health and wellbeing

Range

Horse Management – Horses, ponies or donkeys

Unit content

Plans

Animal health management plans are to record individual details, day/time, and include the following assessments: behavioural, physical and clinical with records on diet and faeces, breeding and weight. Weekly, yearly and seasonal plans with recorded measures taken to maintain and promote health

Promote the health and wellbeing of animals

Five animal needs, animal health care routines with minimum guidelines as set out by Department for Environment, Food and Rural Affairs (Defra) (England), Welsh Assembly Government (Wales), Scottish Executive Environment and Rural Affairs Department (SEERAD) (Scotland), or Department of Agriculture and Rural Affairs (DARD) (Northern Ireland), or individual animal advisory bodies

Monitor and report

Monitor animal health and management plans, record keeping, and reporting procedures for disease control

Unit 301 Understand and Promote Animal Health

Outcome 4 Know how to deliver and record basic animal treatments

Assessment Criteria

The learner can:

1. Describe how to deliver a range of **basic routine** and **non-routine animal treatments** safely in line with codes of practice and legislation
2. Describe the importance of **monitoring animals** after treatment
3. Describe the methods for monitoring animals and the **records** required

Range

Horse Management – Horses, ponies or donkeys

Unit content

Basic routine treatments

Endo parasite prevention, ecto parasite prevention, care of teeth, claws/hooves, routes of administration (topical, enteral, and parenteral). Frequency of treatment, timing, sourcing treatments e.g. where to purchase, assessing animal for adverse reactions, limitations of treatment (effectiveness) and limitations of person providing treatment (Vet Surgeons Act 1966 and Veterinary Medicines Regulations 2009)

Non-routine animal treatments

Accidents and injuries: Shock, Road Traffic Accident (RTA), hypothermia, hyperthermia, convulsions, fractures, eye and ear wounds, hoof, paw or claw wounds, choking, poisoning, abscesses, burns and scalds, bites and stings

Bandaging techniques, cleaning and dressing wounds, administering first aid and medication, sick nursing, consideration of working with an unpredictable animal and precautions to take

Monitoring animals

Observation of physical signs and behaviour, frequency of monitoring, expected recovery times/rates, knowing when to seek assistance from the vet or supervisor

Records

Veterinary records, feeding and water intake records, monitoring of clinical signs against expected recovery, frequency of defecation and urination

Unit 301 Understand and Promote Animal Health

Notes for guidance

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

Animal Management – companion (dog or cat) and either small mammals (rabbit and rodents) or exotics or large mammals (goat, camelids, donkey, pig or other available large mammals)

Horse Management – Horses, ponies or donkeys

Agriculture - Farm animals (pigs, cattle, poultry and sheep) 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 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.

In Outcome 1, the learner will be required to recognise signs of both good and ill 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 and dealing with animals in a way which reduces stress and minimises injury to the learner, animals and others.

Outcome 2 covers a wide range of diseases and disorders that affect animals. It is anticipated that the delivery of this unit will be through formal lectures, but it would be beneficial to include learning within the wider context of animal health. For example, reference and links to control of diseases within EU Government guidelines (e.g. Department for Environment, Food and Rural Affairs (Defra) (England), Welsh Assembly Government (Wales), Scottish Executive Environment and Rural Affairs Department (SEERAD) (Scotland), or Department of Agriculture and Rural Affairs (DARD) (Northern Ireland)) and internationally could be explored. Current and topical issues regarding animal health should be highlighted.

In Outcome 3, the learner 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 throughout the year, identifying the current situation, health and welfare targets within given time frames and allow for reassessments over time. Reference should be made to wider national strategies for health planning and management.

In Outcome 4, the learner will be able to deliver and record basic treatments to animals. Candidates 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.

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.

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. Learners must be given the opportunity to deal with a range of animals in different situations which reflects current industry practice.

References

Books

Alderton D, 2000**.** *The Complete Book Of Pets & Petcare: The Essential Family Reference Guide To Pet Breeds And Petcare.* Hermes House.

Alderton D, 2004. Exotic Pets, *Practical Petcare Handbook.* London: Lorenz Books.

Alderton D, 2005. *The Ultimate Encyclopedia Of Small Pets And Petcare.* London: Southwater.

Alderton D, 2005. *The Ultimate Encyclopedia Of Small Pets And Petcare.* Ultimate Editions.

Alderton D E A, 2006. *The Complete Book Of Pets And Petcare: The Essential Family Reference Guide To Pet Breeds And Petcare.* London: Hermes House.

Bartlett R D And Bartlett P P, (1998). Snakes: Everything About Selection, Care, Nutrition, Diseases, Breeding, And Behavior, *A Complete Pet Owner's Manual.* Hauppauge, Ny: Barron's Educational.

Batty J, 2005. Bantams: Breed And Management, *International Poultry Library.* Midhurst: Beech.

Batty J, 2000. *Practical Poultry Keeping.* Northbrook Publishing, 11 Ed.

Bekoff M And Meaney C A, 1998. *Encyclopedia Of Animal Rights And Animal Welfare.* Westport, Conn.: Greenwood Press.

Bielfeld H, 1984. *Mice: Everything About Care, Nutrition, Diseases, Behavior, And Breeding.* Woodbury, N.Y.: Barron's Publishing.

Bower J And Youngs D, 1994. *The Dog Owner's Veterinary Handbook.* Marlborough: The Crowood Press.

Browning B, 2003. Animal Welfare, *Just The Facts.* Oxford: Heinemann Library.

Case L P, 2005. *The Dog: Its Behavior, Nutrition, And Health.* Oxford: Blackwell, 2 Ed.

Daly C H, 2002. Rats: Everything About Purchase, Care, Nutrition, Handling And Behavior, *A Complete Pet Owner's Manual.* Hauppauge New York: Barron's Educational Series, Revised Ed.

Hayes M H And Knightbridge R (Ed), 2002. *Veterinary Notes For Horse Owners.* London: Ebury Press, 18 Ed.

Hobson J And Lewis C, 2007. *Keeping Chickens: The Essential Guide To Enjoying And Getting The Best From Chickens.* Newton Abbott: David & Charles.

Hoffman M, 1996. *The Doctors Book Of Home Remedies For Dogs And Cats.* Rodale Press Inc.

Indiviglio F And Earle-Bridges M, 1997. *Newts And Salamanders : Everything About Selection, Care, Nutrition, Diseases, Breeding, And Behavior.* Hauppauge, N.Y.: Barron's Educational Series.

Kotter E, 1999. Gerbils, *A Complete Pet Owner's Manual.* Hauppauge, N.Y.; Leicester: Barron's Educational.

Turner T (Ed) And Tuner J (Ed), 1994. *Veterinary Notes For Cat Owners.* London: Stanley Paul.

Turner T, 1990. *Veterinary Notes For Dog Owners.* London: Stanley Paul.

Meredith A And Redrobe S, 2002. *Bsava Manual Of Exotic Pets.* Gloucester: British Small Animal Veterinary Association.

Simpson G (Ed), 1994. *Practical Veterinary Nursing.* Bsava, 3 Ed.

Krottlinger J, 1993. *Keeping Reptiles And Amphibians.* Neptune, N J: T F H Publications.

Lane D R And Cooper B, 2003. *Veterinary Nursing.* Oxford: Butterworth-Heinemann, 3rd Ed.

Websites

http://www.spvs.org.uk	Society of Practising Veterinary Surgeons
http://www.rcvs.org.uk	Royal College of Veterinary Surgeons
http://www.rvc.ac.uk	Royal Veterinary College
http://www.intute.ac.uk/veterinary/	
http://www.uk250.co.uk/frame/1399/priory-lodge-education.html	
http://www.Defra.gov.uk	Department for Environment, Food and Rural Affairs
www.wales.gov.uk	Welsh Assembly Government
www.scotland.gov.uk	Scottish Executive Environment and Rural Affairs Department
www.dardni.gov.uk	Department of Agriculture and Rural Affairs (Northern Ireland)

http://ec.europa.eu/food/animal/index_en.htm
http://www.tutorvista.com/content/biology/biology-iii/kingdoms-living-world/kingdoms-living-worldindex.php
http://nhscience.lonestar.edu/biol/animatio.htm

Unit 302 Undertake and Review Work Related Experience in the Land-based Industries

Level: 3

Credit value: 10

Unit aim:

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

There are **four** learning outcomes to this unit. The learner will:

1. Understand the opportunities in the environmental and land-based industries
2. Be able to prepare for a work-based experience in the environmental and land-based industry
3. Be able to undertake a work-based experience in the environmental and land-based industry
4. Be able to review a work-based experience in the environmental and land-based sector

Guided learning hours

It is recommended that **60** hours should be allocated for this unit. This may be on a full-time or part-time basis.

Details of the relationship between the unit and relevant national occupational standards

n/a.

Endorsement of the unit by a sector or other appropriate body

This unit is endorsed by Lantra SSC.

Assessment and grading

This unit will be assessed by:

- An assignment covering practical skills and underpinning knowledge

Unit 302 Undertake and Review Work Related Experience in the Land-based Industries

Outcome 1 Understand the opportunities in the environmental and land-based industries

Assessment Criteria

The learner can:

1. Evaluate **career and progression opportunities** within an environmental and land-based industry

Unit content

Career and progression opportunities

Job roles relevant to the sector: managerial, supervisory, team worker, trainee, volunteer, common job titles within the relevant sector, main duties and responsibilities

Skills needed to fulfil duties and responsibilities of appropriate jobs: job specific, vocational and personal

Progression pathways from trainee or team worker positions to supervisory and management posts. Skills, qualifications and experience required to achieve career progression

Evaluate career and progression opportunities: advantages and disadvantages of identified pathways, suitability to personal interests, skills and qualifications, role of work experience in preparing for a selected career

Unit 302 Undertake and Review Work Related Experience in the Land-based Industries

Outcome 2 Be able to prepare for a work-based experience in the environmental and land-based industry

Assessment Criteria

The learner can:

1. **Select** an appropriate work-based experience and complete the **application process**
2. Demonstrate **interview skills** as an interviewee
3. Prepare for a work-based experience, identifying **targets, aims and objectives**

Unit content

Select

Suitable work experience position based on existing skills, experience, qualifications, development of skills and experience to achieve future employment goals

Application process

Finding suitable job opportunities from e.g. trade magazines, websites, employer approaches to the centre, completion of an application form, curriculum vitae and letter of application

Interview skills

Interview preparation: Research the business and job role, suitable dress and personal presentation, information to find out and suitable questions to ask. Interview performance: attend punctually and dressed appropriately, answering questions, completion of other tests (e.g. practical, aptitude), and reflection on interview performance

Targets, aims and objectives

Aims: overall impact of work experience on skills, experience, future employability, targets / objectives, specific development of workplace skills and knowledge (e.g. technical, vocational, business, team working, communication and employability)

Unit 302 Undertake and Review Work Related Experience in the Land-based Industries

Outcome 3 Be able to undertake a work-based experience in the environmental and land-based industry

Assessment Criteria

The learner can:

1. **Undertake** a selected appropriate work-based experience
2. Maintain a **record of activities and achievements** during a work-based experience.

Unit content

Undertake

Completion of 300 hours of appropriate work experience, attend punctually and reliably, work competently and in line with job role requirements, health and safety, security, confidentiality, effective working relationships with colleagues, supervisors and customers

Record of activities and achievements

Job description for work role, main duties and responsibilities, regular daily working routine, diary of additional tasks, duties, learning experiences portfolio of work experience (e.g. photographs, witness statements, work experience provider's or assessor's reports, progress reviews)

Unit 302 Undertake and Review Work Experience in the Land-based Industries

Outcome 4 Be able to review a work- based experience in the environmental and land-based sector

Assessment Criteria

The learner can:

1. **Present evidence** of activities and achievements during a work-based experience
2. **Review** a work-based experience, identifying strengths and areas for improvement

Unit content

Present evidence

Name of work experience provider, nature of the organisation (type of business, products or services, customers), organisation structure chart, job description for work role, main duties and responsibilities, regular daily working routine, health, safety and welfare of employees, customers, animals, diary of additional tasks, duties, learning experiences, portfolio of work experience (e.g. photographs, witness statements, work experience provider's or assessor's reports and progress reviews)

Review

Business effectiveness: products and services, physical resources (e.g. buildings, machinery, equipment), business procedures, staff management and supervision, employees' skills and development, marketing and customer relations, personal workplace effectiveness: work speed, work quality, punctuality, attendance, reliability, dress and personal presentation, working relationships with peers, working relationships with supervisor, work experience aims, objectives and targets, impact of work experience on future career ambitions

Unit 302 Undertake and Review Work Experience in the Land-based Industries

Notes for guidance

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. Many Level 3 learners are likely to have already had experience of working in the land-based and environmental industries, so this unit seeks to provide new experience opportunities for these learners.

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, e.g. 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 the equivalent of 8 weeks (or 300 hours) 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.

In Outcome 1, 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, and may be closely linked to material in the unit "Business Management". Learners should be encouraged to explore the range of employment opportunities and career paths within their specialist sector. It would be appropriate for employers to be invited to outline to learners their expectations in the workplace. 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. Evaluation of career and progression opportunities should include advantages and disadvantages of at least 3 possible career pathways within their specialist sector. This should help them to identify suitable work experience.

Outcome 2 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. Learners may need to be given supported workshop time on computers to develop these documents. Before attending for a work experience interview it would be appropriate for learners to role play an interview and be given feedback on their interview technique. After attending for an interview they should reflect on their performance and how they could improve their effectiveness. Before commencing work experience they should set overall aims to be achieved during the period and SMART (specific, measurable, achievable, realistic, time scaled) targets or objectives for learning and improvement in relation to future career aims.

Outcome 3 requires that learners effectively complete their period of work experience, meeting the requirements of the workplace appropriate for their position. It would be advisable for their progress to be reviewed at least once during the period and they should have access to tutor support in case of difficulties arising. During their work placement learners must produce the details of their job role and working routine, maintain a diary at least weekly and collate other relevant information on their work placement, performance

and achievements. It would be appropriate for tutors to complete a report in consultation with the work experience provider mid-way and at the end of the placement.

In Outcome 4, learners will use evidence from outcome 3 to present a report, oral and/or written, 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, e.g. 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.

Unit 303 Select, Fit and Evaluate Horse Tack and Equipment

Level: 3

Credit value: 10

Unit aim

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

The aim of this unit is to provide the learner with the skills to be able to carry out the fitting and evaluation of horse tack and equipment. The learner will be able to fit and evaluate the fit of saddles, bridles, rugs, bandages, boots and other equipment.

Learning outcomes

There are **four** learning outcomes to this unit. The learner will:

1. Be able to apply and evaluate the fit of saddles and bridles
2. Be able to apply and evaluate the fit of equipment
3. Be able to select and fit rugs
4. Be able to select and fit bandages and protective equipment

Guided learning hours

It is recommended that **60** hours should be allocated for this unit. This may be on a full-time or part-time basis.

Details of the relationship between the unit and relevant national occupational standards

303.1 Tack up horses for specialist work

Endorsement of the unit by a sector or other appropriate body

This unit is endorsed by Lantra SSC

Assessment and grading

This unit will be assessed by:

- An assignment covering practical skills and underpinning knowledge.

Unit 303 Select, Fit and Evaluate Horse Tack and Equipment

Outcome 1 Be able to apply and evaluate the fit of saddles and bridles

Assessment Criteria

The learner can:

1. Apply and **fit** the following tack:
    - **snaffle bridles**
    - **double bridles**
    - **saddles**
2. Evaluate the fit of
    - snaffle bridles
    - double bridles
    - saddles
3. **Assess and maintain the safety and cleanliness of tack**

Unit content

Fit snaffle bridles, double bridles and saddles

Procedure for fitting tack and assessing tack not previously fitted to a horse, checking on previously fitted equipment

Recognition and fitting of commonly used types of snaffle bridle and bits to include: eggbutt, loose ring snaffles, cheek and D ring snaffles, jointed, mullen mouth and straight bar snaffles, different materials including rubber, stainless steal and happy mouth

Nosebands: drop, cavesson, flash, grackle

Recognition and fitting of double bridles to include: bridoon and curb bits, curb chain, lip strap

Assessment of suitability of bridles for horses, weight and type of leather, condition of tack

Procedure for fitting saddles and assessing the needs of the horse: dressage, jumping and general purpose saddles

Identification of the girth needs and their fitting

Dressage short girth, be nice girth, longer girths, shaped girths, balding anti-gall, using different materials, leather and synthetics

Assess and maintain the safety and cleanliness of tack

Routine maintenance of tack, daily cleaning of saddles and bridles, strip cleaning, checking tack for safety to include stitching and leather folds, cracks in leather, maintenance of different materials leather and synthetics, cleaning metals, cleaning of excessively dirty tack mud and grime, storage of tack, use of oils, saddle soaps and preservatives, cleaning cloths, numnahs and fabrics

Unit 303 Select, Fit and Evaluate Horse Tack and Equipment

Outcome 2 Be able to apply and evaluate the fit of equipment

Assessment Criteria

The learner can:

1. Apply and **fit** the following tack:
    - **breastgirths/breastplates**
    - **martingales**
    - **training aids**
2. **Evaluate the fit** of:
    - **breastgirths/breastplates**
    - **martingales**
    - **training aids**

Unit content

Fit breastgirths breastplates, martingales and training aids

Identify, select and fit suitable equipment for purpose which includes general flat work, jumping cross country riding and riding at speed
Equipment should include different types of breastplates and martingales (running, standing), Market Harborough, combined breastplates and martingales, overgirths
Training aids e.g. side reins, Pessoa, running reins, Chambon, de Gogue

Evaluate the fit of breastplates, martingales and training aids

Evaluate the fit suitable equipment for purpose which includes general flat work, jumping cross country riding and riding at speed
Equipment should include different types of breastplates and martingales (running, standing), Market Harborough, combined breastplates and martingales, overgirths
Training aids e.g. side reins, Pessoa, running reins, Chambon, de Gogue

Unit 303 Select, Fit and Evaluate Horse Tack and Equipment

Outcome 3 Be able to select and fit rugs

Assessment Criteria

The learner can:

1. Select and **fit indoor, outdoor and exercise rugs**
2. **Evaluate the fit of** indoor, outdoor and exercise **rugs**
3. Discuss the **influencing factors when selecting** indoor, outdoor and exercise **rugs**

Unit content

Fit indoor, outdoor and exercise rugs

Identification and fitting of commonly used indoor, outdoor and exercise rugs which should include: standard quilted rugs, jute rugs, under blankets and top rugs, New Zealand rugs, rain sheets
Fastenings of various types for both the front of rugs and their security including: cross over straps, roller and pad, surcingle, leg straps
Procedure for putting on and removing rugs, sequence of straps and folding rugs, safety
Identify and fit rugs and covers for exercise to include rugs for warmth, wet, and different temperatures

Evaluate the fit of rugs

How rugs are sized and measured, ideal fit of commonly used indoor, outdoor and exercise rugs which should include: standard quilted rugs, jute rugs, under blankets and top rugs, New Zealand rugs, rain sheets and rugs for exercise
Assess the fit of indoor and outdoor rugs

Influencing factors when selecting rugs

Weather conditions, temperature, indoor or outside, condition of the horse, facilities available for use, field shelters, natural shelter, and type of stabling, needs of the horse with regard to health safety and comfort

Unit 303 Select, Fit and Evaluate Horse Tack and Equipment

Outcome 4 Be able to select and fit bandages and protective equipment

Assessment Criteria

The learner can:

1. Select and **fit bandages** for exercise and protection
2. Select and **fit protective boots** and equipment
3. Discuss the influencing **factors when selecting bandages, boots and protective equipment**

Unit content

Fit bandages

The suitability, use and fitting of bandages for different occasions to include; work, exercise, competition, protection and support
Different types of materials, cotton: crepe and elasticised, other as appropriate
Using bandages with or without padding
Padding should include: gamgee, fibregee, cross country protection
Health and safety considerations for handler and horse
When bandages can and cannot be worn
Danger and hazards when fitting bandages and boots too tight or too loose

Fit protective boots

The suitability use and fitting of different types of boots to include: brushing, over reach, tendon, knee, hock
Identification of different materials, leather, synthetic, other as appropriate
Different means of offering protection and support

Factors when selecting bandages, boots and protective equipment

Identification of a horses needs, support, protection in addition to identify the requirements of work, for example, a horse being exercised for dressage
Dressing the horse for competition and training, show jumping, dressage, cross country work
Rules and regulations affecting the use of bandages and boots
Safety factors ensuring that protection offered stays secure without causing damage to the limb

Unit 303 Select, Fit and Evaluate Horse Tack and Equipment

Notes for guidance

This unit is designed to provide the learner with the skills and knowledge to identify, select and fit a variety of commonly used tack and equipment which includes tack, rugs and leg protection. The learner will be able to compare different items of equipment and their suitability for use matched to the horses needs. 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 behaviour within the context in which they are working.

In Outcome 1, the learner will be expected to gain experience handling tack, which should include a variety of snaffle and double bridles in addition to commonly used saddles to include dressage, show jumping and general purpose. It is expected that some of the outcome will be delivered formally, specifically identification of a horses needs and the fitting of different types of bridles and saddles. However, practical delivery is important to the success of the outcome. Learners should gain practical experience handling horses when fitting and handling tack and assessing the appropriateness of the fit. Learners are expected to take part in the maintenance of tack, tack cleaning and safety checks. The opportunity to combine this element of the work within routine duties is high and should be encouraged. In addition, assessors working with learners undertaking riding units should be encouraged to make use of the opportunity provided by learners tacking up for riding lessons. The importance of health and safety when handling horses is important and should be reinforced throughout all practical activity.

In Outcome 2, the learner will be expected to gain experience of handling equipment, which should include a wide variety of breastplates, martingales and training aids. It is expected that some of the outcome will be delivered formally, specifically identification of a horses needs and the reasons for fitting schooling equipment and training aids. However, the importance of practical delivery is important to the success of the outcome. Learners should gain practical experience handling horses when putting on equipment and the assessment of its fit. Assessors working with learners undertaking riding and exercising units should be encouraged to make use of the opportunity provided by learners tacking up for riding and lungeing lessons. Health and safety is important when handling horses and should be reinforced throughout all practical activities.

In Outcome 3, the learner will be expected to gain experience handling and fitting a variety of rugs. It is expected that some of the outcome will be delivered formally, specifically identification of a horses needs and the fitting of different types of rugs and exercise sheets. However, practical delivery is important to the success of the outcome. Learners should gain practical experience handling horses when fitting, adjusting and evaluating the appropriateness of fit. It is expected that learners will have the opportunity to put on and remove rugs and maintain appropriate tidiness at all times. The opportunity to combine this element of the work within routine duties is high and should be encouraged. In addition, assessors working with learners undertaking riding units should be encouraged to make use of the opportunity provided by learners tacking up for riding lessons when rugs maybe removed and replaced or when offering sufficient protection to the horse during exercise. The importance of health and safety when handling horses is important and should be reinforced throughout all practical activity.

In Outcome 4, the learner will be expected to gain experience handling protective equipment, which should include a variety of bandages and boots. It is expected that some of the outcome will be delivered formally, specifically identification of a horses needs and the fitting of different equipment. However, practical delivery is important to the success of the outcome. Learners should gain practical experience handling horses when fitting and handling equipment and assessing the appropriateness of the fit. It is important that learners are alerted to the potential dangers of poorly fitting equipment, specifically, bandages. The opportunity to combine this element of the work within routine duties is high and should be encouraged. In addition, assessors working with learners undertaking riding units, should be encouraged to make use of the opportunity provided by learners tacking up for riding lessons when putting on boots and bandages. The importance of health and safety when handling horses is important and should be reinforced throughout all practical activity.

Learners working towards level 3 are likely to have experience putting on various items of tack and equipment. The unit aims to extend the learner's knowledge and practical awareness of the use and fit of a wide variety of tack in common use including aids and equipment used for protection. Use should be made of routine activity or the reference to other units should be encouraged. The emphasis on which tack can be used for exercise and competition use, factors of safety for handlers and horses should be stressed throughout to provide learners with a comprehensive knowledge of equipment use and fitting.

References

Books

Auty I and Batty-Smith J, 2008. *BHS Complete Manual of Stable Management.* Kenilworth Press.

Magazines

Horse and Hound

Unit 304 Plan and Monitor Animal Feeding

Level: 3

Credit value: 5

Unit aim

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

The learner will be able to describe the requirements for a balanced animal diet. The learner will be able to provide the appropriate food to animals and monitor and record the effects of feeding and watering animals. The learner will be able to understand the effects of different feeding and watering regimes for animals.

Learning outcomes

There are **three** learning outcomes to this unit. The learner will:

1. Be able to plan diets and feeding regimes for animals
2. Be able to monitor the feeding of animals
3. Understand the planning and monitoring of animal feeding regimes

Guided learning hours

It is recommended that **30** hours should be allocated for this unit. This may be on a full-time or part-time basis.

Details of the relationship between the unit and relevant national occupational standards

CU35.1 Specify diets and feeding regimes
CU35.2 Monitor and evaluate the feeding of animals

Endorsement of the unit by a sector or other appropriate body

This unit is endorsed by Lantra SSC.

Assessment and grading

This unit will be assessed by:

- An assignment covering practical skills and underpinning knowledge

Unit 304 Plan and Monitor Animal Feeding

Outcome 1 Be able to plan diets and feeding regimes for animals

Assessment Criteria

The learner can:

1. Identify animal **nutritional requirements**
2. Develop **feeding plans** for animals
3. Carry out activities to **feed and water animals**.

Range

Animal care – companion (dog or cat) and either small mammals (rabbit and rodents) or exotics or large mammals (goat, camelids, donkey, pig or other available large mammals)

Unit content

Nutritional requirements

Carbohydrates, fats, proteins, vitamins, minerals, water, fibre

Balanced diet, correct mix of nutrients to meet needs of animal for a variety of purposes

Feeding plans

Plans should include ingredients, quantities and frequency of feeding, timing, records of whether the animal has eaten, supplementation, alternatives to the plan, availability, display of individual animal feeding requirements

Feed and water animals

Assess quality of food, provide appropriate quantities of fresh and dried or pre-prepared food at appropriate frequencies (depending on species and age), provision of fresh water, providing food as an enrichment activity

Unit 304 Plan and Monitor Animal Feeding

Outcome 2 Be able to monitor the feeding of animals

Assessment Criteria

The learner can:

1. **Monitor** the **effectiveness** of the animal feeding plan
2. **Record results** of monitoring animal feeding

Range

Animal care – companion (dog or cat) and either small mammals (rabbit and rodents) or exotics or large mammals (goat, camelids, donkey, pig or other available large mammals)

Unit content

Monitor effectiveness

Monitor the effectiveness of the feeding plan e.g. whether the animal remains the same weight/gains or loses weight, stays healthy, is showing normal activity/behaviour, teeth and/or coat condition, feeding behaviour, faeces consistency, frequency of defecation and urination

Record results

Record the results of monitoring feeding plans either in a table or log/record book, information to be recorded, who to report findings to

Unit 304 Plan and Monitor Animal Feeding

Outcome 3 Understand the planning and monitoring of animal feeding regimes

Assessment Criteria

The learner can:

1. Analyse the **factors influencing** the development of animal feeding plans
2. **Evaluate** the **effectiveness** of the feeding plan:
    - animal behaviour and condition
    - quantities of food eaten
    - cost of feeding against budget.

Range

Animal care – companion (dog or cat) and either small mammals (rabbit and rodents) or exotics or large mammals (goat, camelids, donkey, pig or other available large mammals)

Unit content

Factors influencing

Species, age of animal, work level, health status, life stage, breeding status, public perception (e.g. carnivores eating other animals)

Evaluate effectiveness

Animal behaviour (is the animal behaving normally) and condition (is the animal gaining or losing weight, is it's coat in good condition), quantities of food eaten (exactly how much is the animal consuming), costs of feeding against budget (how much does it cost to feed the animal and is the cost reasonable for the species), comparison of cost effectiveness of different feeding types

Unit 304 Plan and Monitor Animal Feeding

Notes for guidance

This unit is designed to provide the learner with sound knowledge and practical skills to be able to provide the appropriate food to animals and monitor and record the effects of feeding and watering animals. The unit should cover a range of species as appropriate to the area of study:

Animal care – companion (dog or cat) and either small mammals (rabbit and rodents) or exotics or large mammals (goat, camelids, donkey, pig or other available large mammals)

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. In particular, health and safety issues relating to food preparation and feeding must be stressed to learners and regularly enforced.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.

In Outcome 1, the learner is required to identify the nutritional requirements (carbohydrates, protein, fat, minerals, vitamins, fibre and water) for species within the range, plan the diet or feeding regime, including ingredients, quantities and frequency of feeding for each animal and present food and water to animals from the range. The food presented should be of different types (fresh, dried, pre-prepared). This outcome is likely to be delivered by independent learner research, practical activities and theory, classroom-based sessions.

In Outcome 2, the learner will monitor the effectiveness of their feeding regime by observing the animals' behaviour and condition and weighing the animal(s) that have been fed and record the results in a table or log/record book. This outcome is likely to be delivered by discussion, observation and practical activities.

In Outcome 3, the learner will study the factors influencing the development of animal feeding plans (species, age, life stage, health and work level) and evaluate the effectiveness of the feeding plan by analysing the animal's behaviour and condition against the amount of food eaten and cost of feeding the animal. This outcome is likely to be delivered by some formal input, but will provide the opportunities for discussion, observation and practical activities as well as independent learner research. The learner may compare the cost and effectiveness of feeding a particular species in two contrasting ways (e.g. dried or fresh food).

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.

References

Books

Agar, S., 2001. *Small animal Nutrition* (Butterworth-Heinemann) ISBN 075064575X

Burger I., 1993. *The Waltham Book of Companion Animal Nutrition, 2nd Edition* (Butterworth-Heinemann) ISBN 0080408435

Case, C., & Hirakawa, D.,2000. *Canine and Feline Nutrition: A Resource for Companion Animal Professionals, 2nd Edition* (CV Mosby Co) ISBN 0323004431

Kelly, N., & Willis, J., 1996. *BSAVA Manual of Companion Animal Nutrition and Feeding* (BSAVA,) ISBN 090521434X

McDonald, P., Edwards, R., Greenhalgh J and Morgan C 2002 *Animal Nutrition, 6th Edition* (Prentice Hall,) ISBN 0582419069

McNamara, J., 2005. *Principles of Companion Animal Nutrition* (Prentice Hall, 2005) ISBN 0131512587

Pond, W., Pond, K., Schoknecht, P., & Church, D., 2005. *Basic Animal Nutrition and Feeding* (John Wiley and Sons) ISBN 0471658936

Journals

Fur and Feather

Websites

www.hillspet.co.uk	Hills Science Diets
www.iams.co.uk	IAMS/EUKANUBA
www.waltham.com	Waltham Centre for pet Nutrition

Unit 305 Prepare Horses for Presentation

Level: 3

Credit value: 5

Unit aim

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

The aim of this unit is to provide the learner with the skills to be able to carry out the preparation of horses for public presentation. The unit will prepare the learner to go on and continue to practice and improve these skills if they progress into work or a work-related situation. The unit covers preparing horses for public presentation.

Learning outcomes

There are **two** learning outcomes to this unit. The learner will:

1. Be able to prepare horses for presentation
2. Know how to prepare and present a horse for public presentation

Guided learning hours

It is recommended that **30** hours should be allocated for this unit. This may be on a full-time or part-time basis.

Details of the relationship between the unit and relevant national occupational standards

303.3 Clip horses

303.2 Prepare horses for public appearance

Endorsement of the unit by a sector or other appropriate body

This unit is endorsed by Lantra SSC

Assessment and grading

This unit will be assessed by:

- An assignment covering practical skills and underpinning knowledge

Unit 305 Prepare Horses for Presentation

Outcome 1 Be able to prepare horses for presentation

Assessment Criteria

The learner can:

1. **Wash and groom horses** to a standard for public presentation
2. **Pull and plait manes and tails**
3. **Trim** horses **and** demonstrate **clipping** techniques
4. **Present a horse for** public **presentation**

Unit content

Wash and groom horses

Procedure for washing horses, when to wash horses, time of year, health and safety location of washing area, positioning of handler, grooming procedure, reasons for grooming, grooming equipment, tips for enhanced appearance e.g. quarter marks, sensible use of show sheen

Pull and plait manes and tails

Safe procedures when plaiting and pulling e.g. ensure horse positioned safely correct footwear worn, equipment, mane comb, needle and thread, scissors, bands, possible use of solo comb or similar for difficult horses, when and how to plait, reasons for plaiting e.g. improve appearance, show off horse's neck, correct protocol for occasion, pull a mane and a tail, reasons for pulling manes and tails e.g. to improve appearance, show off the hindquarters

Trimming and clipping

Where, when and how to trim: heels, whiskers, jaw line, bridle gap (according to centre protocol)
Equipment: scissors, comb, clippers, clipper oil, clipping techniques, smooth flat strokes, holding foreleg forward to avoid pinching skin, safe practice e.g. designated safe clipping area, rubber soled boots, hair tied back, overalls, protective headgear, circuit breaker, safe positioning of horse, use of assistant where necessary, maintain cool running of clippers, clean and put away equipment

Present horse for presentation

Correct procedure for standing up and leading in hand, correct turning, correct positioning of leader, safe practice and equipment

Unit 305 Prepare Horses for Presentation

Outcome 2 Know how to prepare and present a horse for public presentation

Assessment Criteria

The learner can:

1. Describe the procedure for **washing and grooming** a horse for public presentation
2. Describe the equipment and technique needed to **pull and plait manes and tails**
3. Describe the preparation and **procedure** of **clipping** a horse

Unit content

Washing and grooming

Procedures for washing with consideration for time of year, drying off effectively, tips for washing grey/light coloured horses, grooming equipment and products used to improve appearance: show sheen, hoof oil, quarter marks, comfort of horse while washing and grooming e.g. maintain warmth, careful handling of sensitive areas, full grooming procedure, final touches before presentation, safe working practice e.g. safe positioning of handler, awareness of horse's sensitive areas

Pull and plait manes and tails

Equipment for pulling manes and tails, use of mane comb, use of solo comb or similar if appropriate, technique for pulling hair e.g. wrapping small amount of hair around comb, judging and even length and thickness, use of assistant to restrain horse safely, comfort of horse and when to use alternatives, when not to pull (e.g. native breeds), plaiting to improve appearance e.g. plaiting to enhance a horse's conformation, advantages/disadvantages of plaiting with thread or bands

Clipping procedure

Preparation of clipping area and clippers, preparation of horse, procedure acclimatise horse to clippers, maintaining long, even strokes, clipping difficult sensitive areas, keeping horse warm as clipping progresses, maintenance of machine whilst clipping, regular oiling, recognise if machine overheating and steps to prevent this, Personal Protective Equipment (PPE): rubber soled boots, overalls, safe head gear, hair and clothing secured, circuit breaker, safe clipping area; designated clipping box, horse positioned safely, servicing of blades and clippers

Unit 305 Prepare Horses for Presentation

Notes for guidance

This unit is designed to provide the learner with the knowledge and skills required to prepare horses to a standard to be presented in public.

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 within the context in which they are working.

In Outcome 1, the learner will be required to prepare a horse for presentation and inspection. It is anticipated that delivery will be in practical situations. Learners should be encouraged to work with a range of horses, with the emphasis on safe working and dealing with animals in a way which reduces stress and minimises the risk of injury to the learner, horses and others.

Outcome 2 covers the knowledge required to prepare and present a horse. It is expected that some formal delivery but this should be supported with practical demonstration to include washing and grooming, pulling and plating and the preparation for clipping. The awareness of health and safety and correct industry practice is paramount for this outcome as is a strong regard for the welfare of horses.

Learners working towards level 3 are likely to have experience of horse presentation. This unit aims to extend and build upon the learner's skills in horse presentation. Emphasis should also be placed on care and welfare of horses.

Centres are encouraged to introduce employers and specific professionals from industry to provide interesting and relevant experience to the learner. Visits to competitions and/or relevant events would add depth to the learner experience.

References

Books

Holderness-Roddam J. 2006. *Showing.* Kenilworth Press

Pocklington A. 2004. *The Essential Guide to Professional Horse Care.* J A Allen & Co. ISBN 0851318681

Websites

www.newc.co.uk National Equine Welfare Council

Unit 306 Undertake Stable and Yard Management

Level: 3

Credit value: 10

Unit aim

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

The unit will enable the learner to plan, carry out and manage a range of activities on the yard. The learner will be able to produce daily work routines and manage and monitor the work of other staff on the yard. The learner will be able to undertake health care checks, including assessing the condition of horses feet and shoes, and produce preventative care treatment schedules. The learner will be able to apply skills to care for and manage stable and grass kept horses.

Learning outcomes

There are **four** learning outcomes to this unit. The learner will:

1. Be able to plan, carry out, monitor and maintain daily routines
2. Be able to undertake horse care tasks to maintain the health of horses
3. Understand the requirements for stabled and grass kept horses
4. Be able to work safely around horses

Guided learning hours

It is recommended that **60** hours should be allocated for this unit. This may be on a full-time or part-time basis.

Details of the relationship between the unit and relevant national occupational standards

301.2 Monitor and maintain stocks of feed and bedding
302.1 Promote the health and wellbeing of horses

Endorsement of the unit by a sector or other appropriate body

This unit is endorsed by Lantra SSC

Assessment and grading

This unit will be assessed by:

- An assignment covering practical skills and underpinning knowledge.

Unit 306 Undertake Stable and Yard Management

Outcome 1 Be able to plan, carry out, monitor and maintain daily routines

Assessment Criteria

The learner can:

1. Plan and carry out **daily and weekly stable routines**
2. **Monitor** daily and weekly stable **routines**
3. **Maintain the stable yard** and environment

Unit content

Daily and weekly stable routines

Schedule of activity, morning stables, health checks, mucking out, hay feed and water, rugs, possible turn out and bringing in, tidying yard and surrounding areas, grooming and daily checks, ridden and exercise afternoon and evening stables, riding surface maintenance
Weekly checks to include health and welfare of horses and equipment and facilities

Monitor routines

Maintaining daily and weekly records, horse health and veterinary records, farrier, feed, hay and bedding, equipment, risk assessments, lines of responsibility, who is responsible for specific jobs and tasks, riding schools, supervision

Maintain the stable yard

Horses, stable yards, feed room, tack room, drains and water supply areas, hay barn, store room, muck heap, turn out areas, tool areas, riding arenas, supervision

Unit 306 Undertake Stable and Yard Management

Outcome 2 Be able to undertake horse care tasks to maintain the health of horses

Assessment Criteria

The learner can:

1. **Perform health checks** on horses on a yard
2. Produce **preventative care schedules** for horses on a yard
3. Assess the **conditions of horses' foot and shoes**

Unit content

Perform health checks

Assessment of horses within routine care to include: temperature, pulse and respiration, skin, eyes, nose, teeth, gums, coat, check legs for heat and swelling, warmth, cuts and abrasions, saddle sores, appetite, hydration, feet, normal and abnormal behaviour, underweight, overweight, normal weight, general psychological behaviour, maintenance of records

Preventative care schedules

Maintain schedules and records for the maintenance of: worming, vaccinations, feet, grooming, treatment of feet, provision of suitable facilities, stable cleanliness, warmth, feeding and hydration

Conditions of horse's foot and shoes

Awareness of the daily care of feet to include picking out and checking of condition, regular farrier visits, when to seek assistance from either the vet or the farrier

Unit 306 Undertake Stable and Yard Management

Outcome 3 Understand the requirements for stabled and grass kept horses

Assessment Criteria

The learner can:

1. Compare **different stable designs and their impact** on equine welfare
2. Assess **potential hazards and risks to horses kept at grass**
3. Evaluate **benefits of caring for horses that are stabled, grass kept and those on combined systems**

Unit content

Different stable designs and their impact

Assessment and identification of different stable designs to include: American barn, traditional yards, converted buildings, stalls, indoor corrals, placement of buildings, surrounding areas, types of materials used, flooring, ventilations, type of roofs

The effect that different stable designs may have on the psychological and physical stability of horses, health, hygiene and the prevention of disease, the effect of stable design on working practice

Potential hazards and risks to horses kept at grass

Assessment and identification of hazards to include: trespassers, poor fencing, lack of food and water, fighting with other horses, injury which may go unnoticed, poisoning, flies and other biting insects effects of the elements both sunshine and rain, psychological and physical effects on the horse of being kept at grass, warmth, well being

Benefits of caring for horses that are stabled, grass kept and those on combined systems

Assess and identify the benefits of combined systems to include: warmth, temperature, exercise, labour saving, welfare, feeding, cost, convenience, clothing, companionship, utilising a more natural lifestyle, exercise

Unit 306 Undertake Stable and Yard Management

Outcome 4 Be able to work safely around horses

Assessment Criteria

The learner can:

1. Carry out working practices in line with **current health and safety legislation**
2. Maintain **health and safety records** during routine activity
3. **Monitor health and safety** in an equine environment

Unit content

Current health and safety legislation

The Health and Safety at Work etc Act 1974, to include: all persons (whether employers, employees, self-employed, contractors)

The health and safety duties for everyone in the workplace describing the competences required to ensure that: individual actions do not create any health and safety risks, significant risks in the workplace are recognised, take sensible action to put things right, including reporting situations which pose a danger to people in the workplace and seeking advice

Health and safety records

The importance that all workers are to be made aware of health and safety activity and correct health and safety procedures on the stable yard, induction procedure for workers on the stable yard or those undertaking a new activity, the completion and use of risk assessments, communication between workers on the stable yard, lines of communication, line management, allocation of responsibility, the requirement for supervision, accident and incident records

Monitor health and safety

Supervision and the maintenance of daily and working routine activity records, maintain accident and incident books, maintain horse health records, allocation of duties to workers within experience and capability, provide risk assessment and hazards assessments, safe working practices

Unit 306 Undertake Stable and Yard Management

Notes for guidance

This unit is designed to provide the learner with the skills and knowledge to plan, monitor and maintain a stable yard. The learner will be able to monitor and maintain daily routines and undertake health checks and provide preventative care schedules to include assessing horses' feet and the condition of shoes. The learner will be able to compare different stable designs and their effect on equine welfare, assess potential risks and hazards to grass kept horses. They will be able to evaluate benefits for caring for horses that are stabled, grass kept and combined.

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 behaviour within the context in which they are working.

In Outcome 1, the learner will be expected to gain experience of planning, carrying out and monitoring daily routine activity. They must be given the opportunity to maintain the stable and yard environment. Learners should take part in routine activity which includes maintenance of stables, the tack room, feed room, stores, hay barn and muck heap. They should be encouraged to provide daily and weekly routine plans with an emphasis on safe working practice. The detail and the principles of routine care may need to be delivered formally, however the importance of learners gaining experience in a real working environment cannot be over emphasised. It is essential that learners take part in routine activity and are provided with opportunity to plan, carry out and monitor routines and maintain the stable yard. The importance of health and safety when handling horses, and working with others, is essential and should be emphasised. Correct work practice should be stressed in all elements of work.

In Outcome 2, the learner will be expected to gain experience of health checks and preventative care. Learners should be provided with access to horses in order to examine them for the purpose of assessing aspects of horse health and condition. There will be a need for some formal delivery but it is expected that practical sessions are an integral part of the experience. The importance of health and safety when handling horses, and working with others is essential. Correct work practice should be stressed in all elements of work.

In Outcome 3, learners should be given the opportunity to compare different stable designs with the emphasis on equine welfare. They will need to evaluate the risks and hazards to grass kept horses and evaluate the benefits for caring for horses that are stabled, grass kept or on a combination of the two. It is anticipated that time will be allocated to allow for learners to gain physical experience of all three systems in a practical environment. There will be a need for some formal delivery but it is expected that delivery will be supported by visits to working yards and the investigation of different stable designs and lifestyles. The importance of health and safety when handling horses, and working with others is essential: Correct work practice should be stressed in all elements of work.

In Outcome 4, learners will be expected to carry out stable yard work within accepted health and safety guidelines and practice. Learners should be provided with the opportunity to maintain health and safety records and monitor health and safety in the equine environment. The learner will be expected to carry out working practices in line with current health and safety regulations. It is anticipated that formal delivery will be required for the outcome but that this should be supported by a high level of practical participation. Learners should gain practical experience handling horses when fitting and handling equipment. It is important that learners are alerted to the potential dangers of poor practice and the use of sub-standard equipment. The opportunity to combine this element of the work within routine duties is high and should be encouraged. The importance of health and safety when handling horses is important and should be reinforced throughout all practical activity.

Learners working towards level 3 are likely to have experience working on a stable yard and the responsibility for their own safety. The unit aims to extend the learner's knowledge and practical awareness of working safely within a working stable yard environment and their responsibility to other workers and horses on a stable yard. Use should be made of routine activity and the reference to other units should be encouraged.

References

Books

Auty I & Batty-Smith J. 2008. *BHS Complete Manual of Stable Management.* Kenilworth Press.
Rose Mary. 1997. *The Horsemasters Notebook*. Kenilworth Press.

Magazines

Horse and Hound

Unit 307 Understand the Principles of Animal Biology

Level: 3

Credit value: 10

Unit aim

This unit aims to provide learners with an understanding of the principles of animal biology. 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 aim of this unit is to develop the learner's knowledge and understanding of the structure and function of cells and tissues and their relationship with body systems. This will be developed through an understanding of the structure and function of skeletal systems and sensory organs and how these have been adapted to meet the needs of animals living in different environments.

Learning outcomes

There are **four** learning outcomes to this unit. The learner will:

1. Know the functions of the main animal cell organelles
2. Understand the structure and function of the main animal tissue types
3. Know the structure and function of animal skeletal systems
4. Know the structure and function of sensory organs in animals

Guided learning hours

It is recommended that **60** hours should be allocated for this unit. This may be on a full-time or part-time basis.

Details of the relationship between the unit and relevant national occupational standards

N/A

Endorsement of the unit by a sector or other appropriate body

This unit is endorsed by Lantra SSC.

Assessment and grading

This unit will be assessed by:

- An assignment covering practical skills and underpinning knowledge.

Unit 307 Understand the Principles of Animal Biology

Outcome 1 Know the functions of the main animal cell organelles

Assessment Criteria

The learner can:

1. Identify **cell components**
2. Describe the **functions** of cell **organelles**
3. Identify the stages of **mitosis and meiosis**

Range

Species should be broadly mammalian but reference to other living organisms to be made where appropriate

Unit Content

Cell components and organelle function

Identification of the following cell components by appearance: nucleus (nucleolus, nuclear envelope, chromatin), mitochondria, microfilaments, Golgi apparatus, rough endoplasmic reticulum, smooth endoplasmic reticulum, ribosomes, centrioles, plasma/cell membrane, cilia, lysosomes, vacuoles
The main contribution each organelle makes to cellular function

Mitosis and meiosis

Role of chromosomes in passing on genetic information, purpose of cell division via mitosis and meiosis, description of each of the following stages:
Mitosis: interphase, prophase, prometaphase, metaphase, anaphase, telophase, cytokinesis
Meiosis: prophase I, prometaphase I, metaphase I, anaphase I, telophase I, (cytokinesis may or may not occur), interphase II, prophase II, metaphase II, anaphase II, telophase II, cytokinesis

Unit 307 Understand the Principles of Animal Biology

Outcome 2 Understand the structure and function of the main animal tissue types

Assessment Criteria

The learner can:

1. Categorise different tissue types
2. Explain the structure of **the main tissue types**
3. Explain the function of **the main tissue types**

Range

Species should be broadly mammalian but reference to other living organisms to be made where appropriate

Unit content

The main tissue types

Epithelial tissue

Structure and functions of simple epithelial tissue (squamous, columnar, ciliated columnar, cuboidal, glandular, transitional) and stratified epithelial tissue (e.g. skin)

Connective tissue

Basic structure of connective tissue (cells secrete extracellular protein fibres to form a matrix)
Structure and functions of the following: dense (binding), regular and irregular, loose (fibrous), supporting, fluid

Nervous tissue

Basic neurone structure: cell body, axon, dendrites, dendron, terminal knobs; myelin sheath, Schwann cells and nodes of Ranvier, saltatory conduction of the action potential, structure of the synapse, difference in structure between sensory and motor neurones, monosynaptic and polysynaptic reflex arcs

Muscle tissue

Location, structure and function of the following muscle tissues: skeletal, cardiac, smooth Sliding filament theory of muscle contraction, fast and slow muscle

Unit 307 Understand the Principles of Animal Biology

Outcome 3 Know the structure and function of animal skeletal systems

Assessment Criteria

The learner can:

1. Identify the **component parts of the animal skeletal system**
2. Describe the **functions of the animal skeletal system**
3. Describe **adaptations** of selected **skeletal** systems of animals living in different environments

Range

Species should be broadly mammalian but reference to other living organisms to be made where appropriate

Unit content

Component parts of the animal skeletal system

Axial and appendicular skeleton, divisions of the vertebral column, the limb bones, carpals and tarsals, metacarpals and metatarsals; phalanges
Jaws and dentition in carnivores, omnivores and herbivores
Joint types: fibrous (fixed), cartilaginous (e.g. between vertebrae), synovial (ball and socket, pivot, hinge, gliding)
Function of synovial fluid and capsule
Tendons (bone to muscle) and ligaments (bone to bone), limited to allowing locomotion of the skeleton and stabilising joints

Functions of the animal skeletal system

Locomotion, protection of internal organs, support, storage of calcium and phosphorous, blood cell formation

Skeletal adaptations

Evolution of skeletal adaptations in vertebrates: aquatic mammals (cetaceans), flying mammals (bats), hopping mammals (rabbits), running (horses)

Unit 307 Understand the Principles of Animal Biology

Outcome 4 Know the structure and function of sensory organs in animals

Assessment Criteria

The learner can:

1. Identify the **sense organs** in animals
2. Describe the **structure of sense organs** in selected animals
3. Describe the **function of sense organs** in selected animals

Range

Species should be broadly mammalian but reference to other living organisms to be made where appropriate

Unit content

Sense organs

Eyes, ears, nose, mouth, special sensory organs (e.g. electroreceptors in fish, lateral line system), tactile organs (e.g. platypus beak, vibrissae)

Structure and function of sense organs

Link between stimuli and sense organs (e.g. light and sight). Importance of sensory perception for predators and prey, including echolocation

Structure of the eye and ear as follows:

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: External: auricle (pinna), tympanic membrane. Middle: malleus, incus, stapes, auditory ossicles. Inner: oval window, round window, cochlea, organ of Corti, cochlear nerve

Comparison of sensory organs, including typical eye position and structure of external ears, between predator and prey species (e.g. rabbit and dog)

Unit 307 Understand the Principles of Animal Biology

Notes for guidance

This unit is designed to equip the learner with sound knowledge of the basis of how the animal body functions under normal conditions. Depending on what qualification the unit is delivered through, the context of teaching will differ. 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. Species should be broadly mammalian but reference to other living organisms to be made where appropriate.

Tutors have many opportunities to deliver the unit using a wide range of learning approaches: lectures, discussions, seminar presentations, supervised dissections and live animal handling. Tutors should consider integrating the delivery and private study of this unit with other relevant units.

It is expected that learners will be familiar with safe working practice 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.

Outcome 1 is the basis of cell biology. Electron micrographs of cells should be used to illustrate cell organelle structure, while learners can appreciate the 3-D nature of a cell by constructing models from modelling clay. There are many animations and other useful resources available on the internet that may be used either for independent study or whole-group teaching (see reference materials). Relationships between cell types and the functions of the associated tissue should be emphasised e.g. ciliated cells lining the respiratory tract are able to work together in order to waft mucus containing foreign particles away from the respiratory surface.

Outcome 2 involves categorising and investigating the properties of different tissue types Light microscopy to look at prepared histological samples is recommended, as is practical dissection if possible. Scientific drawing of samples is useful practice and the results could form part of a poster constructed by the learner during independent study of the outcome.

Outcome 3 requires access to real or model skeletons for a full appreciation of how the skeleton works and learners will be able to comment on the advantages and disadvantages of the skeletal adaptations (including dentition) within the range of species, as well as applying the basic theory to other animals, including fossils of extinct animals. The use of timelines is recommended 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.

Outcome 4 examines the interaction of the animal with its environment and high quality audio-visual resources (such as Attenborough's 'Life of Mammals) allow the learner access to the diversity of sensory development in animals across the world. Assigning groups or individuals with projects, presentations and independent research are potential methods of gaining a large amount of information on interesting species, hence motivating and enthusing the learner. Species analysed should include some with unusual sensory receptors, such as fish and their lateral line systems, the bill of the duck-billed platypus and the vibrissae of the star-nosed mole. A comparison between predator and prey species should be emphasised at each stage. Theory sessions on the structure and function of the mammalian eye and ear would be enhanced by dissections of eyes if facilities allow and simple experiments (e.g. the blind spot, pupil shape in different animal species, hearing sensitivity experiments).

References

Books

Boyle, M. & Senior, K., 2002. *Biology.* Collins Educational

Jones, A. Reed, B. & Weyers, J., 2003. *Practical Skills in Biology.* Harlow. Pearson Education.
Kent, M., 2000. *Advanced Biology.* Oxford. Oxford University Press.
Toole, G. & Toole, S. 1992. *Understanding Biology for Advanced Level*. Cheltenham. Nelson Thornes,
Williams, G., 2000. *Advanced Biology for You.* Cheltenham. Nelson Thornes.
Pond, K. & Pond, W., 2000. *Introduction to Animal Science.* J Wiley & Sons Inc.

Websites

www.hse.org.uk Health and Safety Executive
www.defra.gov.uk Department for Environment, Food and Rural Affairs
www.wales.gov.uk Welsh Assembly Government
www.scotland.gov.uk Scottish Executive Environment and Rural Affairs Department
www.dardni.gov.uk Department of Agriculture and Rural Affairs (Northern Ireland)
http://www.cellsalive.com
http://sixthsense.osfc.ac.uk/biology/study_guide.asp
http://www.zoology.ubc.ca/~bio310/121T_files/06S_celldivision.htm
http://www.purchon.com/biology/animal.htm

Unit 308 Understand Animal Anatomy and Physiology

Level: 3

Credit value: 10

Unit aim

This unit aims to provide learners with an understanding of the principles of animal anatomy and physiology. This unit is primarily aimed at learners within a centre-based setting looking to progress into the sector or further education and training.

The aim of this unit is to develop the learner's knowledge and understanding of the structure and function of the main body systems in animals. The learner will also know about the reproductive processes and the role of hormones. Neural and hormonal control mechanisms will also be investigated. The learner will develop an understanding of how the body systems and structures of animals have adapted to meet the needs of different environments.

Learning outcomes

There are **four** learning outcomes to this unit. The learner will:

1. Know the structure and functions of biological systems in animals
2. Know animal reproductive processes
3. Understand the biological control mechanisms in animals
4. Understand how an animal's body structure and systems are adapted to its environment

Guided learning hours

It is recommended that **60** hours should be allocated for this unit. This may be on a full-time or part-time basis.

Details of the relationship between the unit and relevant national occupational standards

N/a

Endorsement of the unit by a sector or other appropriate body

This unit is endorsed by Lantra SSC.

Assessment and grading

This unit will be assessed by:

- An assignment covering practical skills and underpinning knowledge

Unit 308 Understand Animal Anatomy and Physiology

Outcome 1 Know the structure and functions of biological systems in animals

Assessment Criteria

The learner can:

1. Identify the **major body systems in animals**
2. Describe the **structure of the major organs in the animal body**
3. Describe the **functions** of the major organs in the animal body

Range

Species should be broadly mammalian but reference to other living organisms to be made where appropriate

Major body systems in animals

Skeletal system: bones, muscles, joints, tendons, ligaments
Respiratory systems: lungs, gills, skin, spiracles and tracheae
Circulatory systems: open and closed, single and double, composition of blood (plasma, erythrocytes, leukocytes, platelets), structure of blood vessels
Lymphatic systems: glands and vessels
Digestive system: dentition, tissue layers of the intestinal wall (lumen, mucosa, submucosa, ducts and submucosal glands, lymph nodes, blood vessels, nerves, circular muscle layer, longitudinal muscle layer, serosa), absorption of nutrients and water
Excretory system: excretion of ammonia, urea, uric acid
Nervous system: neurones, Autonomic NS, Central NS, Peripheral NS, sympathetic and parasympathetic, afferent and efferent neurones, reflex arcs
Endocrine system: hypothalamus, thymus, pituitary, thyroid, parathyroid, pancreas, adrenal glands, ovaries, testes
Reproductive system: male and female systems, oestrus cycle, puberty, gestation and parturition.

Structure and function of the major organs in the animal body

Brain (limited to gross anatomy, optic chiasm and location of hypothalamus and pituitary), lungs, heart, stomach, liver and kidneys

Unit 308 Understand Animal Anatomy and Physiology

Outcome 2 Know animal reproductive processes

Assessment Criteria

The learner can:

1. Describe the structure of the **male and female reproductive system**
2. Describe the functions of the **male and female reproductive system**
3. State the **role of hormones in the mammalian reproductive process**.

Range

Species should be broadly mammalian but reference to other living organisms to be made where appropriate

Unit content

Male reproductive system

Location and functions of: penis (erectile tissue, comparison of penis structure in range of species), urethra, epididymis, vas deferens, testis, spermatogenesis

Female reproductive system

Location and functions of: vagina, cervix, uterus, oviduct, ovary
Comparison of arrangement of female reproductive systems in the range of species Oogenesis and ovulation, stages of oestrous cycle, copulation, fertilisation, gestation, parturition

Role of hormones in the mammalian reproductive process

Oestrogen, progesterone, luteinising hormone, follicle stimulating hormone, oxytocin, testosterone

Unit 308 Understand Animal Anatomy and Physiology

Outcome 3 Understand the biological control mechanisms in animals

Assessment Criteria

The learner can:

1. Examine the **hormonal control mechanisms** in animals
2. Examine **neural control mechanisms** in animals

Range

Species should be broadly mammalian but reference to other living organisms to be made where appropriate

Control mechanisms

Homeostasis, positive and negative feedback loops. Thermoregulation in ectotherms and endotherms

Hormonal

Hypothalamus, pituitary gland, thyroid, thymus, adrenal gland, pancreas, ovary, testes

Requirement of receptors on cell surface, circulating hormones versus locally acting hormones, glucoregulation (insulin and glucagon), osmoregulation (ADH and aldosterone), fight-or-flight response to adrenaline (epinephrine)

Neural

Central Nervous System (brain and spinal cord), Peripheral Nervous System, afferent (conscious and unconscious stimuli, e.g. senses, limb position) and motor (efferent) output: voluntary reactions and autonomic system (sympathetic and parasympathetic actions)

Unit 308 Understand Animal Anatomy and Physiology

Outcome 4 Understand how an animal's body structure and systems are adapted to its environment

Assessment Criteria

The learner can:

1. Explain how the body structure of selected animals are **adapted** to their **environments**
2. Explain how the body systems of selected animals are **adapted** to their **environments**

Range

Species should be broadly mammalian but reference to other living organisms to be made where appropriate

Environmental adaptations

Natural selection and evolution of at least two animals in contrasting environments (e.g. arid, aquatic, cold, hot, high altitudes/flight), adaptation of the following as appropriate: coat and/or skin, sensory organs, limbs and skeleton, digestive system, respiratory system and excretory system (including efficiency), circulatory system, thermoregulation, reproductive system

Unit 308 Understand Animal Anatomy and Physiology

Notes for guidance

This unit is designed to provide the learner with knowledge of the anatomical and physiological systems in animals. Depending on which qualification the unit is delivered through, the context of teaching will differ. 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 purposes of comparison.

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 the context of the centres ethical policies. Tutors should consider integrating the delivery and private study of this unit with other relevant units.

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.

Outcome 1 covers the main body systems of animals. Delivery of this outcome should cover the structure and functions of the main systems, but tutors should bear in mind that specific systems are covered in further depth in Outcomes 2, 3 and 4 and so should plan delivery/lecture to avoid any unnecessary repetition or duplication. (Note some of the other systems are covered in some depth in the unit Understand the Principles of Animal Biology).

Outcomes 1 and 2 cover the major body systems and reproductive processes in animals. It is expected that learners will observe the organs, through photographs, preserved specimens, or practical dissections. Veterinary operations could also be observed where opportunities allow. All practical work should be supervised and adequate Personal Protective Equipment (PPE) must be used after production of suitable risk assessments. Guest speakers such as veterinarians, veterinary nurses and meat inspectors would contextualise the relevance of the subject for learners. The use of case studies, comparing healthy organs with diseased or injured counterparts, is recommended to help learners understand and relate the organs and systems of the functioning animal body.

Outcome 3 covers the control mechanisms that contribute to homeostasis in the animal body. Independent research leading to group presentations could follow initial tutor input and case studies could be used to illustrate what happens when these tightly regulated systems are compromised by disease or injury.

Outcome 4 will allow the learner to appreciate that the animal body has evolved from selective pressures in the natural environment. These environments should be experienced through the use of audio-visual materials such as Attenborough's 'Life of Mammals'. Learners could carry out independent research using the internet, books and journals, putting together a project comparing and contrasting animals from varying habitats, while visits to zoos or wildlife parks to see more exotic animals would help to illustrate the theory.

References

Books

Boyle, M. & Senior, K., 2002. *Biology.* Collins Educational
Jones, A. Reed, B. & Weyers, J., 2003. *Practical Skills in Biology.* Harlow. Pearson Education.
Kent, M., 2000. *Advanced Biology.* Oxford. Oxford University Press.
Toole, G. & Toole, S. 1992. *Understanding Biology for Advanced Level*. Cheltenham. Nelson Thornes,
Williams, G., 2000. *Advanced Biology for You.* Cheltenham. Nelson Thornes.
Pond, K. & Pond, W., 2000. *Introduction to Animal Science.* J Wiley & Sons Inc.

DVD

Attenborough, D., 2003. Life of Mammals London: BBC.

Websites

www.hse.org.uk	Health and Safety Executive
www.defra.gov.uk	Department for Environment, Food and Rural Affairs
www.wales.gov.uk	Welsh Assembly Government
www.scotland.gov.uk	Scottish Executive Environment and Rural Affairs Department
www.dardni.gov.uk	Department of Agriculture and Rural Affairs (Northern Ireland)
www.bbc.co.uk/nature/class/Mammal	The BBC nature section focussed on mammals

Unit 309 Understand the Principles of Horse Behaviour and Welfare

Level: 3

Credit value: 10

Unit aim

This unit aims to provide learners with an understanding of the principles of horse behaviour and welfare. This unit is primarily aimed at learners within a centre-based setting looking to progress into the sector or further education and training.

The aim of this unit is to develop the learners' knowledge and understanding of the horse's natural instincts and behaviour and the effects of domestication. The learner will also observe horse behaviour, record the results and analyse the findings. The learner will know how to promote the welfare of horses.

Learning outcomes

There are **four** learning outcomes to this unit. The learner will:

1. Understand the natural behaviour of the horse
2. Understand the implications of domestication on the lifestyle and behaviour of the horse
3. Be able to monitor and record the effects of routines upon the behaviour of horses
4. Know how to promote the welfare of horses

Guided learning hours

It is recommended that **60** hours should be allocated for this unit. This may be on a full-time or part-time basis.

Details of the relationship between the unit and relevant national occupational standards

N/a

Endorsement of the unit by a sector or other appropriate body

This unit is endorsed by Lantra SSC

Assessment and grading

This unit will be assessed by:

- An assignment covering practical skills and underpinning knowledge.

Unit 309 Understand the Principles of Horse Behaviour and Welfare

Outcome 1 Understand the natural behaviour of the horse

Assessment Criteria

The learner can:

1. Discuss the **anatomical and physiological adaptations** of the horse as a result of evolution
2. Explain the significance of the **five animal senses** and the influence and effects on the behaviour of horses
3. Analyse the **body language and communication** methods used by horses

Unit content

Anatomical and physiological adaptations

Anatomical adaptations to include the increase in size and weight and changes to skull, eyes, ears, neck, the reduction of toes to a single hoof, loss of pads, fusion of bones, lengthening of limbs and development of gaits
Physiological adaptations to include changes in diet, dentition and digestive tract and development of the brain

Five animal senses

Sight, smell, hearing, taste and touch
Influence and effects on behaviour to include response to danger, communication, lifestyle and environment

Body language and communication

Body language to include body outline, tail position, ear position, mouth, nose, head movements, aggressive and defensive threats, communication to include grunts, squeals, whinnies, nickers their meaning and significance, social interaction within the herd, dominance and pecking order

Unit 309 Understand the Principles of Horse Behaviour and Welfare

Outcome 2 Understand the implications of domestication on the lifestyle and behaviour of the horse

Assessment Criteria

The learner can:

1. Examine traditional **intensive management** practices of keeping horses
2. Analyse the effects of traditional intensive management on the **lifestyle and behaviour** of the domestic horse
3. Evaluate the **causes and management of stereotypic behaviours** in the domestic horse

Unit content

Intensive management

Modern stabling systems for example loose boxes, American barns or stalls, management practices to include stabling routines, feeding and care, exercise and turn out

Lifestyle and behaviour

Effects on behaviour and temperament when being handled or ridden for example biting, barging and nervousness when handled, napping, bucking, easily spooked and excitable when ridden, restriction of natural behaviours, occurrence of stereotypic behaviours to include box walking, wind sucking, crib biting and weaving

Causes of stereotypic behaviours

Causes of stereotypic behaviours to include extensive periods of stabling, restricted forage intake, inappropriate diet, separation anxiety, social isolation, bullying, lack of exercise, boredom and stress

Management of stereotypic behaviours

Management techniques to include increased turnout where possible, ad lib forage, increased opportunity for horse to socialise, feed horse according to the work it is doing, reduce boredom through use of stable toys/licks

Unit 309 Understand the Principles of Horse Behaviour and Welfare

Outcome 3 Be able to monitor and record the effects of routines upon the behaviour of horses

Assessment Criteria

The learner can:

1. **Monitor and record** the **effects of routines** on the stabled and grass kept horse
2. **Monitor and record** the effects of environmental conditions on the stabled and grass-kept horse
3. **Analyse the findings** of monitoring activity

Unit content

Monitor and record

Visual observations of horses and their environment which may include grazing/foraging behaviour, social interaction and communication, dominant and submissive behaviours, the horses daily routine, feeding and watering, observations of the horse before and after exercise and with and without companions present
Use of recording methods for example charts, ethograms, time budgets, frequency of recordings, range of behaviours covered

Effects of routines

The effects of management practices on horse behaviour and mental well being, identification of changes in behaviour and temperament, recognition of normal and abnormal behaviours and adaptations to domesticated life

Analyse the findings

Awareness of effects of routines on individual horses, monitoring of behaviour, evaluating findings and recommending changes in management where appropriate to improve welfare and mental well being for example increased forage ration, changes in turn out routine or field companions, timing and length of exercise periods

Unit 309 Understand the Principles of Horse Behaviour and Welfare

Outcome 4 Know how to promote the welfare of horses

Assessment Criteria

The learner can:

1. Describe the **issues surrounding equine welfare** in relation to the five animal freedoms
2. Outline the importance of the **main equine welfare organisations** in the UK

Unit content

Issues surrounding equine welfare

Care and management issues for example feeding and watering, healthcare, environment, exercise, workload, mental well being, neglect, abandonment and cruelty

Uses of horses for example sport, breeding, riding schools, livery yards, competition horses, working horses, entertainment, feral horses and sanctuaries

Main equine welfare organisations

Welfare organisations to include National Equine Welfare Council, Bluecross, British Horse Society (BHS), Horses and Ponies Protection Association (HAPPA), Redwings, RSPCA, Woodgreen, World Horse Welfare and the Horse Trust

Importance of welfare organisations in the following areas: rescuing, rehabilitating, rehoming, educating, campaigning and research

Unit 309 Understand the Principles of Horse Behaviour and Welfare

Notes for guidance

This unit is designed to develop the learners understanding of the natural instincts and behaviours of the horse. Learners will then apply this to horses kept in a domesticated environment and investigate the effects of intensive management practices on behaviour. Observations of both stabled and grass kept horses will provide the learner with opportunities to identify normal, abnormal and stereotypical behaviours. Issues surrounding equine welfare will be investigated and the importance of welfare organisations considered. Learners must give due consideration to the health and safety issues involved when dealing with behavioural issues.

In Outcome 1, learners will consider the anatomical and physiological changes that have occurred during the evolution of the horse and chart its progress to the present day. This should lead into an investigation of the horse's senses and their influence and effects on horse behaviour. This is likely to be delivered through formal lectures, discussions, presentations and independent learner research. Observational sessions where learners are encouraged to view horses in a variety of situations would be beneficial when analysing body language and communication methods, including audio visual/dvds.

Outcome 2 requires the learners to examine traditional management practices and their effects on the lifestyle and behaviour of the horse. The causes of abnormal and stereotypic behaviours will be discussed and related to the way in which domesticated horses are commonly housed and managed. This is likely to be delivered using formal lectures, discussions, presentations and independent learner research. The use of high quality visual/audio-visual/dvds materials could provide examples of different abnormal and stereotypical behaviours. Visiting expert speakers such as horse behaviourists could add relevance to the subject for learners.

Outcome 3 requires learners to monitor and record the effects of routines. Learners should be provided with opportunities to observe both stabled and grass kept horses to enable them to develop their knowledge and understanding of horse behaviour. It is essential that learners have access to horses that are kept on a combined system so that they can grasp the differences between stabled and grass kept behaviour. Observations and monitoring should take place over a number of weeks but is likely to be done during the warmer months when horses are turned out for longer periods of time. Findings may be recorded in a variety of ways but should be analysed in relation to current management practices and recommendations for change made where appropriate.

In Outcome 4 learners will investigate issues relating to equine welfare. Learners should be encouraged to consider the welfare issues of horses in a wide range of contexts. This should lead into an investigation of the roles of equine welfare organisations in the UK. Delivery techniques should be varied and could include field trips or visits to welfare centres and organisations.

References

Books

Budiansky, S., 1998. *The Nature of Horses: Their Evolution, Intelligence and Behaviour.* Phoenix.
Fraser, A F., 1992. *The Behaviour of the Horse.* CABI Publishing.
Kiley-Worthington, M., 1999. *The Behaviour of Horses in Relation to Management and Training.* J A Allen.
Mills, D. & McDonnell, S., 2005. *The Domestic Horse: The Evolution, Development and Management of its Behaviour.* Cambridge University Press.
Mills, D. & Nankervis, K., 1998. *Equine Behaviour: Principles and Practice.* WileyBlackwell.

Websites

www.newc.co.uk	National Equine Welfare Council
www.bluecross.org.uk	Blue Cross UK
www.bhs.org.uk	British Horse Society
www.happa.org.uk	Horse and Pony Protection Association
www.redwings.co.uk	Redwings Horse Sanctuary
www.rspca.org.uk	Royal Society for the Prevention of Cruelty to Animals
www.woodgreen.org.uk	Wood Green Animal Centres
www.worldhorsewelfare.org	World Horse Welfare
www.horsetrust.org.uk	The Horse Trust Charity

Unit 310 Working Horses from the Ground

Level: 3

Credit value: 10

Unit aim

This unit aims to provide learners with an understanding of the principles of working horses from the ground and how these can be applied in practice. This unit is primarily aimed at learners within a centre-based setting looking to progress into the sector or further education and training.

The aim of this unit is to develop the learners' practical skills in traditional methods of schooling from the ground, whilst developing an understanding of contemporary approaches to training from the ground. This unit is largely practically based and the learner will work horses on the lunge as well as exercise them using long reins. The learner will also develop the underpinning knowledge behind long reining.

Learning outcomes

There are **four** learning outcomes to this unit. The learner will:

1. Understand approaches to training horses from the ground
2. Be able to exercise horses on the lunge
3. Be able to long rein horses
4. Be able to assess horses being worked from the ground

Guided learning hours

It is recommended that **60** hours should be allocated for this unit. This may be on a full-time or part-time basis.

Details of the relationship between the unit and relevant national occupational standards

314.2 Exercise and improve the performance of horses using lungeing and long-reining.

Endorsement of the unit by a sector or other appropriate body

This unit is endorsed by Lantra SSC

Assessment and grading

This unit will be assessed by:

- An assignment covering practical skills and underpinning knowledge.

Unit 310 Working Horses from the Ground

Outcome 1 Understand approaches to training horses from the ground

Assessment Criteria

The learner can:

1. Compare the **different approaches** to foundation training from the ground
2. Discuss the **value of routine training** using handling techniques from the ground
3. **Review contemporary** approaches to retraining from the ground

Unit content

Different approaches

Traditional: lungeing, long reining, ground schooling, pole work, basic commands, use of voice, basic methods, reasons for selecting different approaches, country of origin and brief history of method
Contemporary: definition of contemporary, reasons for choosing certain methods, necessity for experienced; handler, working free in enclosed round arena, Monty Roberts, Parelli, behaviour, country of origin and brief history of method

Value of routine training

View movement without rider, train horse prior to introducing rider, timescales, full assessment without rider, teach discipline and manners, schooling and improving horses way of going, size of handler

Review contemporary

Necessity for experienced handler, suitable area, Parelli, Monty Roberts, history, value, advantages and disadvantages

Unit 310 Working Horses from the Ground

Outcome 2 Be able to exercise horses on the lunge

Assessment Criteria

The learner can:

1. Discuss the **value of training** horses on the lunge
2. Fit and use **appropriate tack** and equipment for exercising horses on the lunge
3. Carry out **lungeing** to exercise horses

Unit content

Value of training

Assess movement, soundness, time saving, assessment of the horse without rider, way of going, stiff and hollow sides, falling in and out on the circle

Appropriate tack

Bridle, bit, saddle, roller, lunge cavesson, lunge line, lunge whip, side reins, boots, selection of appropriate tack, fitting, use of stirrups, (alternatives to side reins – see outcome 4)

Lungeing

Safety of horse and lunge person, Personal Protective Equipment (PPE), lunge arena, lungeing method, warm up, cool down, exercising the horse, transitions, horse's way of going

Unit 310 Working Horses from the Ground

Outcome 3 Be able to long rein horses

Assessment Criteria

The learner can:

1. Discuss the value of training horses in **long reins**
2. **Fit and use** appropriate tack and equipment for long reining
3. **Carry out long reining**

Unit content

Long reins/long reining

Ability to exercise a horse without riding, more control with two reins, working horses on the straight or on the circle, ability to ask for more bend, working towards collection and extension, advantages and disadvantages, horses outside the arena without a rider, working on the lunge with two reins, work on straightness, exercising horses too small to ride, introducing horse to new surroundings without having to worry about rider, introduction to driving

Fit and use

Saddle, side reins, bridle, bit, lunge lines, lunge whip, standard industry accepted fitting of tack, saddle with stirrup leathers fastened down or roller with attachments, lunge lines fitted through stirrup irons or rings on roller, height of lunge lines in relation to level of training

Carry out long reining

Preparation of horse and rider, secure equipment whilst exiting stable, assistance with gates/doors, choice of arena or enclosed area, long reining method, safety of long-reiner, control of equipment, contact with bit, turning the horse, assistance where necessary, practise on person or imaginary horse first, pace and speed, transitions from walk to halt and halt to walk, straightness of horse, long reiner's awareness of surroundings and others, safety of equipment at end of session, good use of voice to praise and instruct horse, use of long rein for extra impulsion

Unit 310 Working Horses from the Ground

Outcome 4 Be able to assess horses being worked from the ground

Assessment Criteria

The learner can:

1. Describe the **way of going** of horses worked from the ground
2. Select and fit **schooling aids** to work horses from the ground
3. Assess horses way of working and suggest **improvements**

Unit content

Way of going

Straightness, evenness of contact, hollow side, stiff side, pace, rhythm, tempo, transitions, square halt, forward movement in the transition, calmness, working in period, warm up exercises, suppling exercises, under tracking, tracking up, over tracking, assessment of soundness, horse's expression through ears and overall body movement, quality of the pace, ability of the horse to perform

Schooling aids

Assessment of horse: age, ability, type, breed, stage of training
Schooling aids: side reins, plain leather, rubber ring, elastic inset, positioning of side reins dependent on stage of training, bungee, Chambon, de Gogue, training rollers, Pessoa, equi-lunge, lungie bungie
Fit and appropriateness of all schooling aids

Improvements

Suitable and correct fitting tack, assess suitability of lungeing area, transition work starting simple with progressive transitions then progress to more acute transitions to increase energy, horse too lively, encourage them to settle in to rhythm, avoid outside disturbances, increasing and decreasing the size of the circle to encourage bend and movement away from the handler, leg yielding in and out of the circle, assess size of circle and appropriateness of this in relation to stage of training of the horse, use of canter and canter transitions, use of poles, single or three poles, pole distances, use of schooling aids, side reins suitability of different types and lengths, length of session, end session on a positive note, use of music

Unit 310 Working Horses from the Ground

Notes for guidance

This unit is designed to provide the learner with sound knowledge and skills required to work horses from the ground.

Throughout the unit, the emphasis should be on safe working and wearing correct PPE. It is expected that learners will be aware of safe working practices and familiar with accepted practices and behaviours.

In Outcome 1, the learner will be required to compare traditional and contemporary approaches to training horses from the ground. Learners should be encouraged to watch people perform both methods, ideally first hand but if not available then on film. They should be encouraged to assess what they see and to view different levels of training from the horses and different experiences of handlers. It is expected that this outcome is delivered in a formal setting. However it is recommended that this is supported by practical demonstration allowing learners to make comparison between traditional and contemporary. The use of educational visits and visiting speakers may enhance the delivery of this outcome. It is essential that the assessor points out the safety issues of all methods of training and any potential risks.

Outcome 2 should be primarily practical in nature and discussion or question and answer techniques should be used during a practical session. The learner should fit and use appropriate tack and equipment for lungeing and should carry out lungeing to exercise the horse. The only way someone can become proficient at lungeing is to get plenty of practise so it would be preferable that the learners get as much hands on lungeing as possible, at least once a week. Initially learners should become familiar with handling the equipment and lunge each other or an imaginary horse. Once familiar with the equipment they should lunge quiet, straightforward lunge horses and then as their confidence and ability grows the range of horses can be increased. The lunger should also develop the ability to assess the lungeing area, lunge tack and equipment. Alongside the practical lunge sessions the learner should discuss the value of training horses on the lunge. It is preferable that this is carried out whilst the horses are being watched and not in a formal classroom situations. The discussion could then be supplemented with handouts.

In Outcome 3 the learner will be required to understand the principles of working horses in long reins. For this it will be necessary for learners to observe experienced trainers working horses on long reins either in the flesh or via film. Learners should discuss the value of working horses in long reins and some of this information will be gleamed from watching the professionals face to face or on film. The learners once competent at tacking up for lungeing can progress on to tacking up for long reining. Learners will be expected to also carry out long reining with sensible, quiet horses that have already been long reined by an experienced handler. As with lungeing the only way to become competent is regular practise so it will take several sessions before the learner feels confident to long rein effectively. Initially long reining should only be carried out at walk where transitions and changes of rein can be used.

In Outcome 4 the learner will be expected to assess horses being worked from the ground. This outcome relates to Outcome 2 and also to riding units as a greater understanding of the horses way of going and how to improve it can only lead to improvements in the learner's riding ability. This is building on Outcome 2 where the learner is exercising the horse, to assessing and describing the horse's way of going and suggest improvements which could be made by either use of transitions, exercises or poles or perhaps using schooling aids. The learner should develop a good working knowledge of all the schooling aids available but not necessarily be expected to use all of them as it may not be appropriate. The schooling aids used on particular horses should take into account age, level of training, discipline horse is working at and the ability of the handler.

References

Book

Henderson, C. Russel, L., 1995. *Breaking and Schooling: Training your Horse from the Ground Up.* The Lyons Press. ISBN 1558214194

Unit 311 Understand Grassland Management

Level: 3

Credit value: 10

Unit aim

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

This unit enable learners to develop the knowledge and skills needed to successfully manage grassland. It can be applied to all grazing livestock enterprises and grass kept for conservation purposes.

Learning outcomes

There are **four** learning outcomes to this unit. The learner will:

1. Understand grasses and grass growth.
2. Understand the factors to consider when establishing and maintaining grass
3. Be able to manage grassland for grazing
4. Know how to conserve grass

Guided learning hours

It is recommended that **60** hours should be allocated for this unit. This may be on a full-time or part-time basis.

Details of the relationship between the unit and relevant national occupational standards

Agc4 Prepare and cultivates sites for planting extensive crops
Agc5 Prepare for planting and plant extensive crops
Agc6 monitor and maintain the healthy growth of extensive crops
Agc7 Preparation and harvesting of crops by mechanical means
Agc8 Store harvested crops

Endorsement of the unit by a sector or other appropriate body

This unit is endorsed by Lantra SSC

Assessment and grading

This unit will be assessed by:

- An assignment covering practical skills and underpinning knowledge.

Unit 311 Understand Grassland Management

Outcome 1 Understand grasses and grass growth.

Assessment Criteria

The learner can:

1. Explain the **terminology** used in grass production and management
2. Relate **growth patterns** to the management of grass for grazing and conservation
3. Discuss the **agronomic characteristics of key grass species/varieties**
4. Discuss the **agronomic characteristics of common weed grass species**

Unit content

Terminology

Types of grassland: hill grazing, permanent pasture, leys (plants making up the sward), physiology of the grass plant (vegetative and inflorescence), digestibility of grass, how it is measured and factors which influence this

Growth patterns

Establishment of grass (grassland production curve, seeds mixtures), managing grass for grazing (hay and silage), effect of soil type, fertiliser, climate and topography on grassland production

Agronomic characteristics of key grass species/varieties

Grass identification and assessment: recognise productive grassland species such as Italian rye grass, perennial rye grass, Timothy, Cocksfoot, meadow fescue, white and red clover and some herbs. Identify attributes that make these species desirable

Agronomic characteristics of common weed grass species

What makes a grass a weed, grass weeds (annual meadow grass, chickweed, yorkshire fog, brome), use of grass keys to identify weed grass species, environmental considerations

Unit 311 Understand Grassland Management

Outcome 2 Understand the factors to consider when establishing and maintaining grass

Assessment Criteria

The learner can:

1. Compare the alternative **methods used to prepare a site for and establish a grass crop**
2. Assess **nutrient requirements** for grassland and prepare a nutrient programme to meet production and sward needs
3. Describe **how common weeds, pests and diseases of grass can be controlled**
4. Discuss the **factors that contribute to sward deterioration**

Unit content

Methods to prepare a site and establish grass crop

Soil type, drainage and topography, reseeding techniques, plough and reseed (Autumn and Spring), under-sowing, direct drilling, renovation, partial and full

Nutrient requirements:

Grass crop requirements, Dry Matter production targets, grassland pH targets, the role of Nitrogen, Phosphate, Potash and Minor elements, Nitrogen-Potash relationships, Environmental considerations including Nitrate Vulnerable Zone (NVZ) calculations

How weeds, pests and diseases of grass can be controlled

Weed control: mechanical (topping, rolling), chemical (complete sward destruction, selective weed killers, weed wipers), manual weeding

Pest Control: moles, rabbits, deer, badgers and their effect on grassland, legislation and health and safety issues

Diseases control: common endoparasites with lifecycles for each, control measures and economic impact of neglect, rotational grazing; crop rotation, use of conservation crops to break disease cycles

Factors that contribute to sward deterioration

Grazing Pressure (high and low), drainage, poor fencing, soil type and poaching, age of sward, timeliness of machinery operations

Unit 311 Understand Grassland Management

Outcome 3 Be able to manage grassland for grazing

Assessment Criteria

The learner can:

1. Carry out **soil sampling and analysis**
2. **Monitor grass** during the grazing season
3. Carry out **grassland improvement activities**.

Unit content

Soil sampling and analysis

Set effective nutrient levels for pH and the major grassland nutrients, take statistically valid soil samples and make field scale determination of pH, P and K levels

Monitor grass

Daily, weekly, monthly checks, assess for sward length, quality, presence of weeds, damage, topping, management of grazing pressure, boundary maintenance, drainage, rotational grazing, nutrition, weed control and their effects on sward, re-seeding

Grassland improvement activities

Plan and monitor activities, boundary maintenance, rotational grazing/conservation cuts, drainage maintenance, fertiliser application, weed control, partial sward replacement, topping

Unit 311 Understand Grassland Management

Outcome 4 Know how to conserve grass

Assessment Criteria

The learner can:

1. Describe **common systems for grass conservation**
2. Describe the alternative **mechanical methods/treatments for conserving grass**
3. Describe the **processes involved in harvesting and storing conserved grass**

Unit content

Common systems of grass conservation

Field dried hay, wrapped hay/haylage/silage, clamped silage, dried grass
Fertiliser requirements, sward composition, time of cutting, target D value

Mechanical methods/treatments for conserving grass

Mowers and mower conditioners, tedding machines and their uses, wind row machines and their uses, baling machines (conventional, big round and big square), wrapping machines, forage harvesters (self propelled and trailed)

Processes involved in harvesting and storing conserved grass

Principles of preservation by drying (hay), work plan/schedule of events, weather forecasting, mechanical handling, example schedule of events, target moisture content for baling
Principles of preserving grass by wrapping: work plan/schedule of events, weather forecasting, mechanical handling, wrapping, transport and storage, example schedule of events, target moisture content for baling
Principles of preserving grass by clamping: including target pH of made silage, desirable bacterial activity and how to promote it, D Value - work plan/schedule of events, weather forecasting, mechanical handling, wrapping, transport and storage, example schedule of events, target moisture content for baling

Unit 311 Understand Grassland Management

Notes for guidance

This unit deals with the management of grass as a crop. Learners will look at methods of optimising grass productivity though its use both by the grazing animal and for conservation. Care will need to be taken to contextualise the study of grassland production to meet the requirements of the learners in their locality. Different emphasis will need to be placed on dairy cow grazing systems in lowland western areas than in hill farming areas or equine areas. The assignment should be tailored to meet the individual needs of the learner.

Outcome 1 serves as a general introduction to the unit as a whole, but will be common to all areas in the UK. The terminology could be given in the form of a 'dictionary A-Z' at the start of the course so that students have a continual reference point. The growth pattern would ideally be taught to match the season of grass growth, which is likely to be mostly from early spring onwards. The agronomic characteristics of grasses and weeds could be taught both in a laboratory and in the field. Weeds should be observed at their different growth stages, especially when relatively small.

Outcome 2 will need to be taught according to the season of grass establishment, which will be either autumn or spring. It would be useful for students to observe the results of a recent grassland establishment programme in order to base their comments from direct observation. Students should be made familiar with Department for Environment, Food and Rural Affairs (England) (Defra), Welsh Assembly Government (Wales), Scottish Executive Environment and Rural Affairs Department (SEERAD), Department of Agriculture and Rural Affairs (DARD NI) RB209 Fertiliser Recommendations handbook and the updated NVZ guidelines for manure applications. Regular crop walking to monitor weeds, pests and diseases as well as signs of sward deterioration such as poaching will need to be continually borne in mind by the tutor. The unit should therefore contain an equal mix of classroom and field studies.

Outcome 3 will usefully link with other crop units, where soil studies, estate skills such as fencing and machinery sessions such as fertiliser applications are dealt with. Tutors should be encouraged to liaise if possible with a farm's manager where soil index information coupled with an agronomist's report are a feature of farm management, so that students are involved with industry practice. The outcome would lend itself to a student-centred assignment/case study where planning considerations are required. The outcome will involve taught classroom work, student centred work, field walks, practical use of machinery and equipment and laboratory sessions.

Much of Outcome 4 would be taught at the appropriate season, which is likely to be from mid-February onwards, in preparation for the forthcoming grazing and conservation activities. Tutors will possibly need to account for flexibility in following grass growth with respect to the apparent changing seasons and milder winters. Where possible, students should be involved in a farms' preparation for both grazing and conservation, especially where silage takes place. There would need to be strict adherence to Health and Safety at all times where machinery and grazing livestock are concerned.

References

Books

Bell B. 2005. *Farm Machinery*. Old Pond Publishing. ISBN 1903366682
Culpin C and Bloxham P. 2006. *Culpin's Farm Machinery*. Blackwell Science. ISBN 0632051825
Davies B, Eagle D and Finney F. 2002. *Soil*. The Crowood Press. ISBN 0852365594
Finch H, Samuel A, Lockhart J and Wiseman A. 2002. *Lockhart and Wiseman's Introduction to Crop Husbandry: Including Grasslands.* Butterworth-Heinemann. ISBN 0080420028
DEFRA. 2008. *Fertiliser Recommendations: For Agricultural and Horticultural Crops*, (RB209). The Stationery Office Books. ISBN 0112430589
Frame J. 2002. *Improved Grassland Management*. The Crowood Press. ISBN 0852365438
Hubbard C. 1992. *Grasses: A Guide to Their Structure, Identification, Uses and Distribution, 3rd Edition*. Penguin Books. ISBN 0140132279
Nix J. 2009. *Farm Management Pocketbook, 37th Edition*. The Andersons Centre. ISBN 0954120159
Soffe R. 2003. *The Agricultural Notebook, 20th Edition*. Blackwell Science. ISBN 0632058293
Whitehead R. 2009. *The UK Pesticide Guide*. CABI Publishing. ISBN 1845930452
Wilkinson J. 2005. *Silage.* Chalcombe Publications. ISBN 0948617500

Journals

Farm Contractor
Farmers Guardian
Farmers Weekly
Grass and Forage Farmer
Grass and Forage Science

Websites

www.bayercropscience.co.uk	Bayer Crop Science
www.britishgrassland.com	British Grassland Society
www.defra.gov.uk	Department for Environment, Food and Rural Affairs
www.wales.gov.uk	Welsh Assembly Government
www.scotland.gov.uk	Scottish Executive Environment and Rural Affairs Department
www.dardni.gov.uk	Department of Agriculture and Rural Affairs (Northern Ireland)
www.efma.org	European Fertiliser Manufacturers Association
www.hse.gov.uk	Health and Safety Executive
www.iger.bbsrc.ac.uk	Institute of Grassland and Environmental Research

Anon. 2003. *Best Farming Practices: Profiting From a Good Environment*. Environment Agency
Anon. 2005. *Entry Level Stewardship Handbook*. Rural Development Service

Unit 312 Understand and Apply the Principles of Horse Fitness

Level: 3

Credit value: 10

Unit aim

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

The learner will be able to explain the physiological effects on body systems whilst considering effects of stress and changes in metabolism. The learner will know how to prepare horses for fittening programmes, including nutritional and health care requirements. A fitness plan for a given horse will be designed and reviewed with an assessment of the horse and suitability of the programme taking place. The learner will also understand methods used to monitor horse fitness including identification of key indicators.

Learning outcomes

There are **four** learning outcomes to this unit. The learner will:

1. Understand physiological effects of fittening on the systems of the horse
2. Understand the requirements of horse fitness preparation
3. Be able to plan horse fitness programmes
4. Be able to monitor horse fitness

Guided learning hours

It is recommended that **60** hours should be allocated for this unit. This may be on a full-time or part-time basis.

Details of the relationship between the unit and relevant national occupational standards

N/A

Endorsement of the unit by a sector or other appropriate body

This unit is endorsed by Lantra SSC

Assessment and grading

This unit will be assessed by:

- An assignment covering practical skills and underpinning knowledge.

Unit 312 Understand and Apply the Principles of Horse Fitness

Outcome 1 Understand Physiological Effects of Fittening on the Systems of the Horse

Assessment Criteria

The learner can:

1. Explain the **physiological effects** of **training** on the systems of the horse
2. Discuss the effects of **physical stress** on the horse

Unit content

Training

Aims: increase time to onset of fatigue, improve performance, and reduce the risk of injury

Long-term process of repeated bouts of exercise to increase fitness levels

Physiological effects

Exercise: short-term physiological adaptations made as a result of increased muscular activity for example effects on cardiovascular system (heart rate, blood pressure, blood temperature and flow, blood pH, blood gases, blood lactate), metabolism and increase in respiration rate

Training: long-term responses to repeated exercise for example increase in heart mass, capilliarisation, increased aerobic capacity

Physical stress

Effects of stress on physiological systems: sweating, stress, increased heart rate, muscle tremors, changes in body fluids, injury, appetite, dehydration, heatstroke, fatigue

Unit 312 Understand and Apply the Principles of Horse Fitness

Outcome 2 Understand the requirements of horse fitness preparation

Assessment Criteria

The learner can:

1. Explain the processes of **fittening and roughing off**
2. Explain the **factors** to consider when preparing a horse for a fittening programme to include:
    - Nutrition
    - Grooming
    - Foot care
    - Health care including preventative treatments
3. Evaluate the use of different **types of work** used in a selected horse fitness programme

Unit content

Fitness

The capacity for exercise

Fittening and roughing off

Getting up and roughing off process: seasonally and environmental considerations, procedures (transition form stable to field kept and vice-versa), feeding and shoeing requirements, clipping/rugging up requirements

Factors

Increasing/decreasing plane of nutrition, grooming (to increase circulation, to stimulate muscles, for health, clipping requirements), foot care (trimming, fitting shoes, special shoeing requirements), health care (worming, vaccinations)

Types of work

Ridden exercise: roadwork, schooling, cantering, grid work, jumping, hill work, fast work, hacking
Non-ridden exercise: lungeing, long-reining, loose schooling, horse walker
Alternative exercise methods: swimming, treadmills

Unit 312 Understand and Apply the Principles of Horse Fitness

Outcome 3 Be able to plan horse fitness programmes

Assessment Criteria

The learner can:

1. Design a **fitness programme** for a horse in work
2. **Review a fittening programme**

Unit content

Fitness programme

Factors to consider prior to programme: current general health status and body condition, current level of fitness, how fit the horse has been, age, type, and injuries
Methods: traditional methods, interval training, alternative methods
Programme: setting goals and timescales, duration of training programme, weekly activities (including type of work, days off, turn out if applicable), increasing level and duration of activity, monitoring progress, what to do if problems occur
Programmes for different work: dressage, show jumping, eventing, endurance, racing

Review a fittening programme

Assessment of fitness (recovery times: heart rate, respiration rate), heart rate monitors, standard exercise testing
Review of progress, adjustment of programme, evaluate achievement of goals, improvements

Unit 312 Understand and Apply the Principles of Horse Fitness

Outcome 4 Be able to monitor horse fitness

Assessment Criteria

The learner can:

1. Discuss key indicators that are used to **measure fitness** in a horse
2. Use key indicators to **assess the condition and fitness level of a horse.**

Unit content

Measuring fitness

Heart rate, respiratory rate, recovery times, bodyweight, body condition, mental status

Assess the condition and fitness level of a horse.

Use of heart rate monitor, standard exercise tests (treadmills), weighing horses and interpretation of blood tests

Unit 312 Understand and Apply the Principles of Horse Fitness

Notes for guidance

This unit is designed to provide the learner with sound understanding of the principles of fitness and training and the methods used to improve the fitness of horses. The learner will gain the knowledge required to plan fitness programmes for horses and will also practically monitor fitness levels. Emphasis should be placed upon safe working when learners are carrying out practical activities with horses to assess their fitness.

This unit lends itself to a variety of delivery methods. Tutors are encouraged to include visits to different yards and specialist establishments or research institutes where the more specialist aspects of assessment of fitness and training can be observed.

Outcome 1 is designed to develop the learners understanding of the physiological changes to horses during a fittening programme. This outcome can be delivered both in the classroom and also using practical sessions as much as possible to illustrate the point made in theory. Practical sessions should support and enhance the delivery of theory in order to establish an understanding of the physiological effects of fittening on the systems of the horse. Guest speakers who are specialists in the areas of fitness (for example practitioners such as trainers or riders, or research scientists) would be useful to bring real life examples and experiences to the learning.

Outcome 2 covers the requirements for getting up and roughing horses before or after training (competition/hunting) seasons. It would be useful to have access to horses that are being brought up or roughed off, but this is not an absolute requirements. Learners should gain an understanding of various considerations to be made when preparing animals for a period of prolonged activity and the requirements for feeding and health. Again, experienced practitioners, for example yard managers, could be useful to deliver some of this content to bring real life experiences to enhance the unit.

In Outcome 3 learners will be able to develop and review fitness programmes for horses for various disciplines. A range of considerations to take into account will be reviewed, and the learning could be enhanced by using practical sessions to assess a horse's current level of fitness. Again, visits to different types of yards would be useful to gain an insight into the types, duration and content of different training programmes. This would be particularly interesting to compare the requirements of a racehorse with an endurance horse, for example.

In Outcome 4 learners will have the opportunity to practically assess the fitness of horses using a variety of methods. In reality, most of this work could be done on the college yard, but again visits to specialist establishments or research centres would help to illustrate the more technological advanced methods. Access to basic equipment to assess fitness is required, such as stethescopes. It would be useful to allow learners to use heart rate monitors, but this is not an absolute requirements. Care should be taken to ensure safe working around horses when carrying out the practical activities.

Reference

Book

Marlin D and Nankervis K. 2002. *Equine Exercise Physiology Pub.* Wiley Blackwell. ISBN 0632055524

Unit 313 Prepare and Provide Care for Competition Horses

Level: 3

Credit value: 10

Unit aim

This unit aims to provide learners with an understanding of the principles of caring for the competition horse and how these can be applied in practice. This unit is primarily aimed at learners within a centre-based setting looking to progress into the sector or further education and training.

The aim of this unit is to provide the learner with skills and knowledge to be able to prepare a horse for a competition and provide care for it throughout the day. The unit includes the theory behind the preparation of the horse prior to competition, including routine and specialist care and monitoring fitness. The learner will develop the skills to prepare the horse and the necessary equipment for the competition day and they will be required to look after a competition horse for the duration of the event. The unit also covers the immediate and long-term aftercare of the horse, equipment and vehicle.

Learning outcomes

There are **four** learning outcomes to this unit. The learner will:

1. Know how to undertake pre-competition preparations
2. Be able to prepare horse and rider for competition activities
3. Be able to care for a horse at competitions
4. Be able to provide post-competition care and exercise

Guided learning hours

It is recommended that **60** hours should be allocated for this unit. This may be on a full-time or part-time basis.

Details of the relationship between the unit and relevant national occupational standards

304.1 Prepare for transportation
303.2 Prepare horses for public appearance
304.2 Care for horses during and after transportation and escort horses to competition.

Endorsement of the unit by a sector or other appropriate body

This unit is endorsed by Lantra SSC.

Assessment and grading

This unit will be assessed by:

- An assignment covering practical skills and underpinning knowledge.

Unit 313 Prepare and Provide Care for Competition Horses

Outcome 1 Know how to undertake pre-competition preparations

Assessment Criteria

The learner can:

1. Describe the **routine** and **specialist care** for competition horses
2. Describe methods of **monitoring and recording fitness** progression
3. Identify the **competition seasons, characteristics, formalities and requirements**

Unit content

Routine

Important aspects of routine care, feeding and watering, deciding on a ration, mucking out and bedding, grooming, turn out, exercise, handling, shoeing, recognising good health and caring for a sick horse, internal parasites, worming and vaccination, stable vices and problem behaviour, grassland management

Specialist care

Bathing, clipping, trimming, pulling and plaiting for competition, specialist feeding and watering before, at and after competition, deciding on a ration for different disciplines, guidelines for competition horses, turn-out and specialist exercise, fittening, specialist tack and equipment, travelling horses to and from competitions and the care involved

Monitoring and recording fitness

Reasons and techniques for monitoring and recording fitness, horse's condition and health, body shape in terms of muscle and fat, temperature, pulse and respiration, heart rate monitor, fitness programme, fitness history, paper-based, computerised (details recorded on the computer to monitor fitness), simple graphs to record fitness levels, types of fittening, interval training

Competition seasons and characteristics

Time of year, affects of season on horse or rider, format of competition, length of competitive season, relation to fittening programme, characteristics of the competition, structure, activity involved, levels, formalities, rules and regulations, requirements, age of horse and rider, pre-requisites

Formalities and requirements

Dress code, rules and regulations, rule book, tack and equipment requirements, horse eligibility, drugs, their use and testing

Unit 313 Prepare and Provide Care for Competition Horses

Outcome 2 Be able to prepare horse and rider for competition activities

Assessment Criteria

The learner can:

1. Identify **permitted tack and equipment** for a competition
2. **Prepare** tack and rider equipment for the competition discipline
3. Check, **prepare and load equipment and horses** for travelling

Unit content

Permitted tack and equipment

Rule book, practical recognition, allowances in warm up area, saddles, bridles, bits, boots, gadgets, whips, spurs, essential and desirable tack, range of disciplines (dressage, show-jumping, horse trials, point to pointing, long distance riding, polo, hunting)
Standard of competition

Prepare and load equipment

Lists required, cleanliness, in order, spares, tack, shoes, saddle, bridle, boots, additional items, specialist equipment for each discipline, washing and watering equipment, feed and utensils, rugs, bandages and first aid kit, rider clothing, hay or equivalent and haynets, safety checks

Prepare and load horses

Legal requirements for road transport, types of transport, preparation procedure, vehicle and driver checks, travel equipment, loading method, assistance, Personal Protective Equipment (PPE) for handler and assistant, loading a reluctant horse, other loading methods, clothing for travelling

Unit 313 Prepare and Provide Care for Competition Horses

Outcome 3 Be able to care for a horse at competitions

Assessment Criteria

The learner can:

1. **Present horse** appropriately for a competition discipline
2. **Prepare and tack up** a horse for a competition following rules for permitted tack and equipment
3. **Care for horse** for the duration of the competition event

Unit content

Present horse

Grooming, trimming, plaiting, tack and equipment, timing of competition, night before the competition, feeding and watering prior to competition, care before the start of the competition, specific care

Prepare and tack up

Liaison with rider, rule book, bridle, bit, saddle, martingales, boots, studs, spares, specific tack for discipline, warming up, adjust tack where necessary, shoeing adjustments, fitting studs, warm up session, weather implications

Care for horse

Watering, un-tacking or loosening off, walking in hand, rest, timings, specific care for discipline, during the competition, cooling off, cold water cooling, veterinary checks and drug testing (if necessary)

Unit 313 Prepare and Provide Care for Competition Horses

Outcome 4 Be able to provide post-competition care and exercise

Assessment Criteria

The learner can:

1. Identify **immediate** and **long-term aftercare** requirements of the horse, including exercise
2. Provide **aftercare of tack and equipment**
3. Carry out activities to **clean and maintain vehicle** after use

Unit content

Immediate

When and how to warm down and cool off effectively, cold water cooling, watering, bathing or sponging down, health treatments, treating injuries for example cuts, bruises, stresses and strains, procedure at veterinary inspections, procedures for specific disciplines in particular horse trials and long distance riding

Long term aftercare

Feeding, veterinary care, rest, clothing and bandages, leg treatments, thorough checks all over horse in particular legs to identify any heat or abnormalities, trotting up for soundness, assessment of soundness by rider immediately after competition, and day after competition

Aftercare of tack and equipment

Once horses cared for then clearing out of vehicle and cleaning of all tack and equipment, washing down, saddle soap, oil, cloths, and storage

Clean and maintain vehicle

Muck out, wash down, and tidy all equipment, activity to take place on returning to the yard after horses cared for

Unit 313 Prepare and Provide Care for Competition Horses

Notes for guidance

This unit is designed to provide the learner with the knowledge of preparing horse and rider for competition. The unit can primarily be delivered in a practical setting and could be evidenced from outside activity.

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.

In Outcome 1, the learner will be required to describe the routine and specialist care for competition horses. Learners should be encouraged to look primarily at one or two main disciplines and then in less detail at some of the less high profile ones. Use learners past experience to impart knowledge to the rest of the group. Learners are also required to describe methods of monitoring and recording fitness progression, although formal lectures will be required, this should also be done practically wherever possible.

Outcome 2 is a practical outcome and the learners should be encouraged to attend shows and competitions to view not only the competition but what goes on behind the scenes. It will be necessary for the centre to have a range of tack and equipment that would be used for the different disciplines. Assessment could be based on scenarios and the learner having to choose tack and equipment for a specific discipline. It will be necessary to have a horse box or trailer and suitable vehicle in order for learners to practise loading sensible horses into and out of the vehicle.

In Outcome 3, the learner will be required to care for a horse at competitions. This may take place at the centre if competitions are held there. Alternatively the learner could be taking part in a competition themselves and at the same time caring for the horse, or as for outcome 2, grooming for a competition rider in their spare time, employment or work experience. In this way the learners could gain further experience for this outcome. However the actual assessments will have to be real and carried out via the centre. The learner would be expected to carry out all the preparation and care of the horse prior and during the competition as well as having some understanding of this particular discipline.

In Outcome 4, the learner is expected to be able to provide post-competition care and exercise and although there will be some formal lecture element to this to ensure current techniques are learned (e.g. Animal Health Test), it will need to be covered in a practical context. Learners will need to observe competitions either at the centre or in the locality, attending events in different disciplines and concentrating on the aftercare of the horse. The learners could enter competitions themselves and groom for each other in order to achieve evidence for this outcome.

The emphasis should not only be placed on doing but also planning and preparation in terms of horse and rider. It is important that the learner understands current rules and regulations and knows where to go to check up on any aspects of the set discipline.

Centres are encouraged to introduce employers and 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 some formal lectures will be necessary at this level but for this unit it is recommended that they are linked directly with interactive lessons in a real environment. Learners must be given the opportunity to see or deal with horses competing in a range of disciplines which reflect current industry practice.

References

Books

Pilliner S and Cotton. S. 1996. *Care of the Competition Horse / Cross Country Riding.* Batsford Ltd. ISBN 0713481785

Unit 314 Understand the Principles of Horse Rehabilitation and Therapy

Level: 3

Credit value: 10

Unit aim

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

The learner will understand the nature of horse performance injuries, common sites, possible causes and diagnostic techniques used. The requirements and effective use of therapeutic techniques will also be understood, reviewed, compared and evaluated. The learner will also know equine rehabilitation techniques and complimentary therapies used to improve performance, as well as have an understanding on laws and regulations relating to rehabilitation referrals. The factors that affect the process of referral will also be covered.

Learning outcomes

There are **four** learning outcomes to this unit. The learner will:

1. Understand the nature of horse performance injuries
2. Understand the requirements and effective use of therapeutic and diagnostic techniques
3. Know equine rehabilitation techniques used to improve performance, including complimentary therapies
4. Know the laws and regulations relating to equine rehabilitation

Guided learning hours

It is recommended that **60** hours should be allocated for this unit. This may be on a full-time or part-time basis.

Details of the relationship between the unit and relevant national occupational standards

N/A

Endorsement of the unit by a sector or other appropriate body

This unit is endorsed by Lantra SSC.

Assessment and grading

This unit will be assessed by:

- An assignment covering practical skills and underpinning knowledge.

Unit 314 Understand the Principles of Horse Rehabilitation and Therapy

Outcome 1 Understand the nature of horse performance injuries

Assessment Criteria

The learner can:

1. Explain the **common sites of performance related injuries and conditions found in the horse**
2. Discuss the **factors that put horses at risk of injury**
3. Discuss the **processes used for identifying injury**

Unit content

Explain the common sites of performance related injuries

For example: direct trauma, fractures, concussion injuries (splints, sidebone, windgalls), cuts, sprains, strains, overstress of a limb, partial or complete rupture of tendons and ligaments, bruised/torn muscles, damage to back or pelvis

Other commonly found injuries associated with: horse trials, showjumping, dressage, racing, hunting

Factors that put horses at risk of injury

Factors include: inadequate training, fatigue, predisposing factors, lack of horse scope/ability over-training, poor preparation, rider/trainer errors, diet, health, condition, time of year, mental status, routine care, feeding

Discuss the processes used for identifying injury

Looking at clinical signs: lameness, heat, swelling, bleeding, length of time clinical symptoms have been present, veterinary advice or referral, identification of injury, lameness grading, nerve blocks, palpation

Diagnostic techniques: radiography, scintigraphy, magnetic resonance imaging

Unit 314 Understand the Principles of Horse Rehabilitation and Therapy

Outcome 2 Understand the requirements and effective use of therapeutic and diagnostic techniques

Assessment Criteria

The learner can:

1. Review the **use of therapeutic techniques**
2. **Compare the use of therapeutic techniques**
3. **Evaluate diagnostic techniques used in specific injuries/conditions of the performance horse**

Unit content

Therapeutic techniques

Identification of different therapeutic techniques for example equine sports massage therapy, chiropractors, osteopaths, manipulation, inferential treatment, Transcutaneous Electrical Nerve Stimulation (TENS), cold/ice/water, heat therapy (superficial/deep), heat and cold, ultrasound, the use of riding and ground work as a therapeutic technique, when techniques would be used, what effects they have, list techniques associated with treating identified injuries, reviewing of treated injuries

Compare the use of therapeutic techniques

Effectiveness of a range of techniques, cost, length of treatments, success of treatment, accessibility of therapeutic techniques, equipment needed if appropriate, and people required to fulfil administration of a range of therapeutic techniques, situations when techniques would not be used

Evaluate diagnostic techniques used in specific injuries/conditions of the performance horse

Radiography, scintigraphy, magnetic resonance imaging, nerve blocks, observation, physical examination, their uses, effects, success, cost, availability, how techniques work

Unit 314 Understand the Principles of Horse Rehabilitation and Therapy

Outcome 3 Know equine rehabilitation techniques used to improve performance, including complimentary therapies

Assessment Criteria

The learner can:

1. Review **rehabilitation techniques**
2. Evaluate the use of **complimentary therapies** used to support rehabilitation
3. **Justify the use of selected rehabilitation techniques and complimentary therapies**

Unit content

Rehabilitation techniques

Identification of different rehabilitation techniques, for example: swimming, treadmills, water treadmills, non-weight-bearing, ground work, ridden work, when techniques would be used, what effects they have, the types of injuries that can be treated by the use of each identified rehabilitation technique, time factors

Complimentary therapies

Available complimentary therapies, for example: homeopathy, shiatsu, aromatherapy, magnetic therapy, acupuncture, their uses, effects, success, cost, availability, beneficial effects, potential harmful effects

Justify the use of selected rehabilitation techniques and complimentary therapies

Reasons for rehabilitation and complimentary therapies, how they support and assist one another, considerations of each therapy, benefits and possible harmful effects of each one

Unit 314 Understand the Principles of Horse Rehabilitation and Therapy

Outcome 4 Know the laws and regulations relating to equine rehabilitation

Assessment Criteria

The learner can:

1. Outline **legislation and regulations relating to the treatment of horses** for given practitioners
2. Discuss the **procedures for veterinary referrals**
3. Describe **factors associated with equine rehabilitation referral**

Unit content

Legislation and regulations relating to the treatment of horses

Legislation: Veterinary Surgeons Act 1966, Veterinary Medicines Regulations (yearly), governing bodies, qualifications, authorised treatments for veterinary surgeons, physiotherapists, chiropractors, alternative therapists, health and safety considerations

Procedures for veterinary referrals

Diagnosis, second opinion, recommended veterinary medication, rehabilitation, referral to other practitioners

Factors associated with equine rehabilitation referral

Processes and procedures involved: people involved, veterinary surgeons, insurance companies, equine therapists, their involvement and contribution, insurance referrals, loss of use, retirement, euthanasia, long term prognosis, claiming of fees or medications

Unit 314 Understand the Principles of Horse Rehabilitation and Therapy

Notes for guidance

This unit is designed to provide the learner with knowledge and understanding of horse rehabilitation and therapy. This will be achieved by the examination of performance injuries, effective use of diagnostic techniques, therapeutic techniques, rehabilitation and the use of complimentary therapies. The learner will also gain an understanding of veterinary referral procedures and laws and regulations associated with equine rehabilitation.

Throughout the unit there will be an emphasis on safe working practices. It is expected that learners are aware of safety and familiar with accepted behaviour within the context of which they are working.

In Outcome 1, the learner will be required to acquire an understanding of a range of performance injuries and their causes. They will also develop an awareness of the processes used for identifying and recognising injury. They should be given opportunities to recognise a range of clinical signs and indicate what performance injury could be being demonstrated. It is accepted that formal delivery will be an essential part of this outcome. However teaching should provide learners with the chance to see a range of performance injuries and the processes used for identification. Learners should be encouraged to work safely with equipment. They should show the ability to work and deal with animals in a way which reduces stress and minimises injury to themselves, animals and others.

Outcome 2 requires the learner to develop an understanding of the requirements and effective use of therapeutic and diagnostic techniques. Where possible techniques being used should be observed and supported through formal delivery. Learners should be given the chance to review therapeutic techniques and compare their use and effectiveness. Diagnostic techniques will also be observed and evaluated in their relation to specific injuries and conditions. Learners should show the ability to work and deal with the horse in a way which reduces stress and minimises injury to themselves, animals and others. This outcome would benefit from the inclusion of guest speakers from different therapeutic backgrounds and visits to equine therapy centres.

In Outcome 3, the learner will be required to develop an understanding of equine rehabilitation techniques used to improve performance as well as the use of complimentary therapies. This outcome can be delivered using a range of theoretical, practical and observational approaches. Case studies are recommended to enhance understanding and learning. Learners should show the ability to work and deal with the horse in a way which reduces stress and minimises injury to themselves, animals and others. This outcome would benefit from the inclusion of guest speakers from different rehabilitation backgrounds and visits to equine rehabilitation centres.

In Outcome 4, the learner will develop knowledge on laws and regulations relating to equine rehabilitation. This outcome will be delivered formally, however it is recommend that the use of visiting speakers and visits will develop an understanding of procedures used in working practices when referring horses and the factors associated with equine rehabilitation referral.

Learners working towards level 3 may have experience with horse performance injuries. This unit aims to extend the learners knowledge and understanding involved with performance injuries to make learners aware of diagnostic, therapeutic and rehabilitation techniques and how they can be supported with the use of complimentary therapies.

Centres are encouraged to introduce employers and specific professionals from industry to provide interesting and relevant information to the learner.

References

Books

Brennan M L and Eckroate N. 2006. *Complete Holistic Care and Healing for Horses: The Owner's Veterinary Guide to Alternative Methods and Remedies.* Kenilworth Press Ltd. ISBN 1872119342

Bromiley M W. 2007. *Equine Injury, Therapy and Rehabilitation*. Blackwell Publishing. ISBN 1405150613

Emich G. 1994. *Naturopathy for Horses*. J.A.Allen & Co Ltd. ISBN 0851316000

Loving N S. 1995. *Veterinary Manual for the Performance Horse (Essential Series)*. WileyBlackwell. ISBN0632039142

Sutton A. 2003. *The Injured Horse*. David & Charles PLC. ISBN 0715314210

Stewart Hastie P and Vincer C. 2006. *The BHS Veterinary Manual (British Horse Society)*. Kenilworth Press Ltd. ISBN 1872082578

Journals

Equine Veterinary Journal
Journal of Equine Veterinary Education

Unit 315 Understand the Principles and Practices of an Equine Stud

Level: 3

Credit value: 10

Unit aim

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

The unit provides an introduction into the principles and practices of stud work. It covers some of the knowledge, understanding a skills required to undertake a range of stud tasks.
The learner will be able to understand the requirements for breeding programmes and the selection of breeding stock. They will participate in a range of routine stud duties and will know how to plan, monitor and record care routines and activities in the yard. The learner will also cover the theory of the preparation necessary for foaling and the after care of the mare and foal.

Learning outcomes

There are **four** learning outcomes to this unit. The learner will:

1. Understand the planning and management of breeding programmes
2. Be able to participate in routine stud activities
3. Know how to plan, monitor and record routine care for breeding stock
4. Know the foaling process and aftercare of mare and foal

Guided learning hours

It is recommended that **60** hours should be allocated for this unit. This may be on a full-time or part-time basis.

Details of the relationship between the unit and relevant national occupational standards

313.1 Attend to mare and foal during foaling
313.2 Care for mare and foal

Endorsement of the unit by a sector or other appropriate body

This unit is endorsed by Lantra SSC

Assessment and grading

This unit will be assessed by:

- An assignment covering practical skills and underpinning knowledge.

Unit 315 Understand the Principles and Practices of an Equine Stud

Outcome 1 Understand the planning and management of breeding programmes

Assessment Criteria

The learner can:

1. Evaluate the **physical, mental and genetic qualities of stock for breeding** purposes
2. Examine the **importance of planning and monitoring breeding programmes**
3. Review **methods of breeding improvement techniques**

Unit content

Physical, mental and genetic qualities of stock for breeding

Proven ability of parents, temperament of parents and related stock, conformation strengths and weaknesses, health, achievements, fertility, genetic potential, size, other progeny

Importance of planning and monitoring breeding programmes

Maintenance of records, records that need to be kept to include general health and well being, feeding and monitoring

Methods of breeding improvement techniques

Performance testing for stallions and mares, blood line history, stud book records, Thoroughbred and non-Thoroughbred industry, sports horse development, artificial insemination, embryo transfer, the inducement of ovulation

Unit 315 Understand the Principles and Practices of an Equine Stud

Outcome 2 Be able to participate in routine stud activities

Assessment Criteria

The learner can:

1. Describe the **routine activities associated with stud practices**
2. **Perform routine stud activities**
3. Demonstrate **safe working practices and use of Personal Protective Equipment when carrying out routine stud activities**

Unit content

Routine activities associated with stud practice

Grassland and stable management, daily weekly and ongoing routine care of breeding stock to include mares, stallions, youngsters, managing horses at grass and stabled, groups of mares and youngsters, mucking out stables with stock, grooming, handling, feeding during and after pregnancy, leading and exercise, diagnosis of pregnancy, covering of mares, caring for the mare during pregnancy, care of mare during foaling and after, care of the foal, daily health checks, warmth, injury, general condition and weight, standard equine signs of good health, assessing nutritional needs

Perform routine stud activities

Undertaking routine activity to include grassland and stable management
Daily weekly and ongoing routine care of breeding stock to include mares, stallions, youngsters, managing horses at grass and stabled, groups of mares and youngsters, mucking out stables with stock, grooming, handling, feeding, leading and exercise, checking mares for signs of being in season
Carrying out health checks to include warmth, injury, general condition and weight, standard equine signs of good health, assessing nutritional needs

Safe working practices and use of Personal Protective Equipment (PPE) when carrying out routine stud activities

Maintaining safe working practices when carrying out routine activity to include the handling of stock, stallions, mares with foals and youngsters through out all routine activity, mucking out grooming, daily care, leading in hand, working in stables and in pastures, turning out and bringing in horses from the field, use of PPE

Unit 315 Understand the Principles and Practices of an Equine Stud

Outcome 3 Know how to plan, monitor and record routine care for breeding stock

Assessment Criteria

The learner can:

1. **Plan and monitor routine care for breeding stock**
2. **Record information on breeding stock** as a result of monitoring care for stallions and mares

Unit content

Plan and monitor routine care for breeding stock

Grassland and stable management, daily weekly and ongoing routine care of breeding stock to include mares, stallions, youngsters, managing horses at grass and stabled, groups of mares and youngsters, mucking out stables with stock, grooming, handling, feeding, leading and exercise, during and after pregnancy, leading and exercise, diagnosis of pregnancy, covering of mares, caring for the mare during pregnancy, care of mare during foaling and after, care of the foal

Record information on breeding stock

Health records, oestrus cycle, service records, records of scans, ultra sounds, swabbing, checking for seasons, nutrition during and after pregnancy, diagnosis of pregnancy, covering of mares, foaling, care of mare and foal, handling young stock, routine care of stallion, feeding

Unit 315 Understand the Principles and Practices of an Equine Stud

Outcome 4 Know the foaling process and after care of mare and foal

Assessment Criteria

The learner can:

1. Describe the **requirements for the preparation of foaling**
2. Describe the **stages of the normal foaling process and signs of abnormal foaling**
3. Outline the **aftercare of the mare and foal following foaling**

Unit content

Requirements for the preparation of foaling

Preparation of foaling box or area, bedding, hygiene, cleanliness, foaling inside out, preparation of the mare equipment that might be needed, set up Closed Circuit Television (CCTV) in box, staffing

Stages of the normal foaling process and signs of abnormal foaling

Signs of foaling in the period leading up to foaling, signs of imminent foaling, walking, sweating, facial signs, running milk, three stages of foaling, recognition of dystocia, foal in malposture, the birthing process, immediate care after foaling, when to call the vet

Aftercare of the mare and foal following foaling

Care of the foal in the first few hours, feeding the mare, setting bed fair, warmth, check the mare has passed the placenta, need for stitching, check for milk, colostrum, standing, suckling, meconium, turning out for the first time, handling the foal, leading in hand, health checks

Unit 315 Understand the Principles and Practices of an Equine Stud

Notes for guidance

This unit is designed to provide the learner with the skills and knowledge to participate in the planning, monitoring and maintenance of the stud environment. The learner will be able to evaluate and examine the management of breeding programmes, take part in routine activity, know basic monitoring and recording requirements of breeding stock and be aware of the foaling process. The learner will be able to compare different breeding improvement techniques and describe the after care of the mare and foal.

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 behaviour within the context in which they are working.

In Outcome 1 the learner will be expected to gain experience of planning and monitoring breeding programmes and breeding improvement techniques. It is expected that the outcome will require formal delivery but the opportunity to utilise practical examples is strongly recommended. Visits to studs and the input of professional stud practitioner's are encouraged. The evaluation of real stock is considered essential for learners to gain a visual understanding of stock assessment (conformation and temperament).

In Outcome 2 the learner will be expected to gain experience of routine activity. Although it is accepted that some formal delivery and direction is required the opportunity for learners to take part in daily routine active it is essential for them to gain an undertaking of stud work which should include care at grass and stable, groups of horses, grooming mucking out and handling and the assessment of basic condition. Visits to studs and the input of professional stud practitioner's are encouraged. There should be a strong emphasis on safe working practice.

In Outcome 3 learners should be given the opportunity to plan and monitor routine care and record information on breeding stock. There will be a need for some formal delivery but it is expected that delivery will allow learners to participate in the monitoring and recording process. Visits to studs and the input of professional stud practitioner's are encouraged. The learners should be encouraged to handle horses with an emphasis on safe working practice.

In Outcome 4 the learner will be expected to gain an understanding of the foaling process. This should include the period up to foaling, signs of imminent foaling, immediate after care and routine care the following day. It is accepted that there will be the need for significant formal delivery. However the use of practical real situations should be encouraged. Visits to studs and the input of visiting speakers would be desirable as would the use of visual aids, DVD and interactive equipment in order to provide a strong a practical experience as possible. An awareness of health and safety should be integral to the delivery of the outcome.

Some learners working towards level 3 may have some stud work experience but many may not. The unit aims to extend the stud work knowledge of the learners and provide an insight and clear understanding of stud work. In addition there should be a strong practical awareness of working safely within a working stud stable yard environment. Learners must be encouraged to take responsibility for the health and safety of themselves and other workers. The health and welfare of horses is essential. Use should be made of routine activity and reference to other units is to be encouraged.

References

Books

Brega J. 1996. *Breeding and Youngstock*. J A Allen. ISBN 0851316475
Rose J and Pilliner S. 1990. *Practical Stud Management*. Howell Book House Inc. ISBN 0876058855
Dougall N. 1999. *Stallions Their Management and Handling*. J A Allen. ISBN 0851312569

Unit 316 Introduction to the Principles of Young Horse Handling, Training and Backing

Level: 3

Credit value: 10

Unit aim

This unit aims to provide learners with an understanding of the principles of young horse handling, training and backing and how these can be applied in practice. This unit is primarily aimed at learners within a centre-based setting looking to progress into the sector or further education and training.

This unit aims to provide the learner with an understanding of the skills necessary to handle and prepare young horses for the introduction of tack and equipment. The unit also covers the skills required to introduce young horses to equipment and it provides an understanding of the importance of correct handling and techniques during early stages of training. The learner will also contribute to the training of young horses from the ground and to report on progress and well-being throughout. The unit also provides an understanding of the correct procedures associated with training young horses and the importance of early handling and following correct procedures to minimise risks to humans or horses. It covers the equipment and techniques and also risks to humans, horses and others when handling and training young horses.

Learning outcomes

There are **four** learning outcomes to this unit. The learner will:

1. Be able to introduce young horses to equipment
2. Be able to contribute to the training of the young horse from the ground
3. Be able to assist in the introduction of the horse to the rider
4. Understand how to contribute to the training and backing of the young horse

Guided learning hours

It is recommended that **60** hours should be allocated for this unit. This may be on a full-time or part-time basis.

Details of the relationship between the unit and relevant national occupational standards

307.1 This unit is linked to Introduce young horses to equipment
307.2 Contribute to training from the ground and backing

Endorsement of the unit by a sector or other appropriate body

This unit is endorsed by Lantra SSC

Assessment and grading

This unit will be assessed by:

- An assignment covering practical skills and underpinning knowledge.

Unit 316 Introduction to the Principles of Young Horse Handling, Training and Backing

Outcome 1 Be able to introduce young horses to equipment

Assessment Criteria

The learner can:

1. Introduce **basic handling** and **preliminary training** procedures to the horse
2. Select and fit **suitable equipment** to the horse
3. Maintain **physical and mental well-being** of the horse throughout procedures
4. **Monitor progress** of the young horse, **recommending further training** requirements as appropriate

Unit content

Basic handling

Grooming procedure to include use of hand, soft cloth and brushes, working gradually over entire body, ensure safety of handler and young horse/foal at all times, getting young horse accustomed to having all legs felt all the way down front and back, teaching young horse/foal to lift legs, tap all around feet with hoof pick, picking out feet into skip, introduce head collar and lead rope, introduction of leading through an appropriate method such as cloth around quarters, use assistance where necessary

Preliminary training

Training prior to weaning, the use older horse as guidance, make use of mare where possible and the fact that foal will naturally want to follow them
Horse's natural instincts, mare and foal relationship, foal slip, early leading, stable rubber, teaching to tie up

Suitable equipment

Headcollar and leadrope, simple snaffle bridle with young horse bit, roller and pad, use of saddles with regard to the security of girths, irons and leathers

Physical and mental well-being

Condition and fit of equipment, comfort of horse, stress levels and anxiety of horse, familiarity of handler and location, methodical progression at pace of individual animal, safety of handler and horse, safe location, hazards, assistance where necessary, handling techniques

Monitor progress

The importance of an appointed supervisor in charge of young horse's progression, importance of continuity of handlers, record progress in writing

Recommendations for further training

Potential issues and solutions: rushing, falling in on the circle, bucking

Unit 316 Introduction to the Principles of Young Horse Handling, Training and Backing

Outcome 2 Be able to contribute to the training of the young horse from the ground

Assessment Criteria

The learner can:

1. Select and fit **suitable tack** for training the young horse from the ground
2. **Assist with the training of the young horse** from the ground safely
3. **Report the horse's progress** and well-being throughout the training process

Unit content

Suitable tack

Bridle, long reins, lunge line, roller, saddle, overgirth, lunge cavesson, lunge whip, neck strap, protection for horse

Assist with the training of the young horse

Enclosed space: appropriate area, surface, secure, perimeter fencing or wall, hazards, other horses
In the open: surface, hazards, use of companion animal

Report the horse's progress

Written records maintained of all aspects of welfare and training, reports to supervisor, feedback to owners, future plans in calendar form, recording systems, security of records

Unit 316 Introduction to the Principles of Young Horse Handling, Training and Backing

Outcome 3 Be able to assist in the introduction of the horse to the rider

Assessment Criteria

The learner can:

1. **Prepare horse and area** for backing according to requirements
2. Assist with **introducing the horse to the rider** according to current good practice

Unit content

Prepare horse and area

Suitable area, surface, hazards, perimeter fence or wall, snaffle bridle, young horse bit, saddle, numnah, stirrups, overgirth, breastplate, boots, lunge line, lunge whip, lunge cavesson, factors that may influence procedure such as distractions outside, other horses in the arena

Introducing the horse to the rider

Safety of handlers, horse and rider, Personal Protective Equipment (PPE), suitable area, procedure to take into consideration progress of individual horse, warm up of horse, positioning of horse, rider, handler and assistant, potential issues, procedure to follow current industry best practice and safety guidelines

Unit 316 Introduction to the Principles of Young Horse Handling, Training and Backing

Outcome 4 Understand how to contribute to the training and backing of the young horse

Assessment Criteria

The learner can:

1. Explain the **correct procedures** for introducing, fitting and using tack and equipment for young horses
2. Explain the importance of **correct handling and introduction of equipment** in the early stages of training
3. Discuss the procedures associated with **training young horses** from the ground and backing
4. Evaluate the **hazards and risks** associated with training young horses from the ground and backing

Unit content

Correct procedures

Safety to handlers and horses, horse welfare, reduction of accidents and injuries, snaffle bridle and suitable bit, roller, saddle, stirrups, girth, overgirth, side reins, lunge cavesson, introducing saddle (location, timing, safety aspects, additional equipment, horse's response, potential reactions), introducing bridle (suitable bit, fitting, mouth assessment)

Correct handling and introduction of equipment

Accepted industry practice, safety to handlers and horses, basis for further training, progression, importance of introducing discipline and good manners at an early age, the psychology of young horses, procedures for coping with difficulties

Training young horses

Grooming, tying up, leading, turning out, catching, lungeing, assistant, leaning over, sitting on, walking with rider, mounting, further work with rider, use of older horse, alternative methods such as Parelli or Monty Roberts, psychology of young horses, safety, areas for exercise and their effect on methods chosen

Hazards and risks

Unpredictable reactions from horse: rearing, bucking, bolting, barging, planting
Injuries to handler or rider (kicks, falls)
Risks to horse: injury, bad experience, metal scarring, poor handling

Unit 316 Introduction to the Principles of Young Horse Handling, Training and Backing

Notes for guidance

This unit is designed to provide the learner with sound knowledge and skills required to work with young horses. It is important at this level to work with an experienced trainer and to assist and learn from experience how to handle, train and back young horses. The emphasis for this unit should be on safe working practice and learners should apply previous experience gained working with adult horses.

In Outcome 1, learners will be able to introduce young horses to equipment through basic handling and preliminary training techniques. It is important to progress at the pace of the individual horse and it will be necessary to carry out this outcome in a practical situation either at the centre or working with a local stud who are prepared to have learners assisting with their young horses.

Outcome 2 covers training the young horse from the ground and although the learner is not expected to be in charge in situation they will be expected to make a significant contribution. The learners should review a range of suitable tack for the young horse and assess what would be standard industry norm in the majority of cases. They should also be expected to complete progress sheets to report back on the horses which they are working with over a period of time.

Outcome 3 will not be covered in a one off session, but will need to be a series of practical sessions preferably with more than one horse in order that the learner will be able to assist in the introduction of the horse to the rider. Alternatively if the horses are not available on site then the centre could link with a local yard that would be prepared to allow the learners to assist in backing sessions. Use of demonstration or film clips is useful to give learners an idea of how young horses can react and seeing procedures in action.

Outcome 4 finally brings together the practical work undertaken and looks at the necessity of carrying out such procedures. It would be useful for learners to observe an experienced professional undertaking an alternative method of training young horses and it should be pointed out that great care should be taken when anyone inexperienced is trying out one of these alternative methods.

It is accepted that formal lectures will be necessary at level 3 but for this unit it is recommended that the majority is undertaken with interactive lessons in a real environment. Learners must be given the opportunity to deal with a range of young horses in different situations which will enable them to see how differently the young, untrained horse may react.

References

Books

Maxwell R and Sharples J. 2001. *From Birth to Backing: The Complete Handling of the Young Horse.* David & Charles PLC. ISBN 0715312841

Unit 317 Riding and Exercising Horses

Level: 3

Credit value: 10

Unit aim

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

The aim of the unit is to enable the learner to exercise horses safely under saddle. Whilst learners are required to follow instructions, on completion of this unit they will be able to ride a horse in the arena, in the open and on a road. The learner will also be able to ride through a jumping grid, and jump a short course of small fences.

Learning outcomes

There are **four** learning outcomes to this unit. The learner will:

1. Be able to ride a trained horse in the school
2. Be able to ride gymnastic jumping
3. Be able to ride a trained horse over fences
4. Be able to ride a quiet horse on the road and in the open

Guided learning hours

It is recommended that **60** hours should be allocated for this unit. This may be on a full-time or part-time basis.

Details of the relationship between the unit and relevant national occupational standards

314.1 Contribute to the design and implementation of daily exercise programmes for horses
315.1 Ride horses for exercise

Endorsement of the unit by a sector or other appropriate body

This unit is endorsed by Lantra SSC

Assessment and grading

This unit will be assessed by:

- An assignment covering practical skills and underpinning knowledge.

Unit 317 Riding and Exercising Horses

Outcome 1 Be able to ride a trained horse in the school

Assessment Criteria

The learner can:

1. Prepare for riding by **checking and adjusting tack**
2. **Mount and dismount and adjust girth and stirrups** without assistance
3. Ride **school movements at walk, trot and canter with and without stirrups**

Unit content

Checking and adjusting tack

Procedure for leading the horse to the riding area
Check tack for safety comfort, cleanliness and fit
Check and adjust if necessary, bit, nose band, throat lash, saddle, saddle cloth/numnah, girth, stirrup leathers, martingales, breastplates (as appropriate)

Mount and dismount and adjust girth and stirrups

Mount horse from the ground, from a mounting block and leg up, adjust girth and stirrups whilst mounted
Dismount horse and loosen the girth, run up stirrup leathers, leading horse to and from arena

School movements at walk, trot and canter with and without stirrups

Ride circles, serpentines, changes of rein, three quarter lines, centre lines at different paces with and without stirrups
Ride all movements in a group or ride order and individually in open order
Riding the horse in the an appropriate pace and speed, specifically working paces with regard to the horses way of going, controlled forward movement, rhythm, bend and a working outline

Unit 317 Riding and Exercising Horses

Outcome 2 Be able to ride gymnastic jumping

Assessment Criteria

The learner can:

1. **Ride down a grid of jumps** of the height 2' 6" (80cm)
2. Maintain **rhythm, balance, speed and co-ordination**

Unit content

Ride down a grid of jumps

Use of trotting poles, setting and measuring the correct distance, one or two placing poles and measuring the distance

Fences built at measured related distance (note that the use of the term grid implies more than two jumps)

Jumping position

The principles and practice of measuring distance

Pace and approach to include: trot and canter, corner, line in front of a fence, pace in front of fence, position at corner and through approach, position at take off, in flight and getaway, the importance of riding away from fences and riding the corner after fences

Rhythm, balance, speed and co-ordination

Jumping position, over poles and fences, between fences, secure, balanced, reaction to changes within a grid, sitting up and moving forward again, selection of the right speed of approach, trot or canter, consideration of control, approach and getaway from fences, the importance of rhythm and speed

Unit 317 Riding and Exercising Horses

Outcome 3 Be able to ride a trained horse over fences

Assessment Criteria

The learner can:

1. **Ride horses over a course of show jumps** to the height of 2' 6" (80cm)
2. Demonstrate a **balanced position between and over fences**
3. Maintain **pace and line when approaching fences, showing appropriate rhythm, balance and speed**

Unit content

Ride a horse over a course of show jumps

Walking the course and considering how best to ride and approach fences, measuring any distances, pace, direction, lines, corners, approach, getaway from fences, looking for the next jump and planning the lines

Balanced position between and over fences

Jumping position over fences, between fences, secure, balanced, selection of the right speed and relevant position of approach canter, consideration of control, approach and getaway from fences, maintaining leg and hand aids, between fences, secure, balanced, reaction to changes occurring during a round of show jumps, sitting up and moving forward again, trot or canter, consideration of control, related to position, approach and getaway from fences

Pace and line when approaching fences, showing appropriate rhythm, balance and speed between fences

Changes and control of pace between fences, variety of lines to fences, and approach the fence from different paces trot and canter, maintaining leg and hand aids, when to slow down

Unit 317 Riding and Exercising Horses

Outcome 4 Be able to ride a quiet horse on the road and in the open

Assessment Criteria

The learner can:

1. **Ride a quiet horse on the road**
2. **Ride a quiet horse in the open**

Unit content

Ride a quiet horse on the road

Basic principles of riding on the road, Highway Code, other road users, taking account of different times of the day, quiet and busy, different light conditions, different types of road surfaces, weather conditions, clothing and Personal Protective Equipment (PPE), what the horse should wear, route, the importance of letting others know the route, additional equipment (e.g. mobile phone), riding at walk and trot

Ride a quiet horse in the open

Basic principles of riding in the open, Country Code, other countryside users, taking account of different times of the day, different types of terrain, weather conditions, clothing and Personal Protective Equipment (PPE), what the horse should wear, route, the importance of letting others know the route, additional equipment mobile phone, riding position and the use of walk, trot and canter

Unit 317 Riding and Exercising Horses

Notes for guidance

This unit is designed to provide the learner with the knowledge and skills required to ride a trained horse in a riding school, over a line of grid fences and jump a course of show jumps. It also covers riding on the road and in the open.

Riding and exercising horses is one of the most essential components of a horse's routine. It is essential that learners develop knowledge and skills through practice and riding instruction. Throughout the unit the emphasis should be on safe working. It is expected that learners will be aware of safe practice and accepted behaviour within the context of the riding environment.

In Outcome 1, the learner will be required to ride a trained horse within the riding school. This outcome should be delivered in a practical setting where learners are riding regularly under instruction. Learners should have the opportunity to work with a range of horses with the emphasis on riding safely in the riding school using all three paces of walk trot and canter. Safe working practices should be followed when preparing horses for work and when mounting. Learners should be made aware of how to mount from the ground, using a mounting block and receiving a leg up. It is accepted that many establishments have adopted the practice of using a mounting block however the ability to mount from the ground should not be underestimated. Although it is accepted that there will be some formal delivery the importance of the practical component supported with demonstration is integral to the success of this outcome.

In Outcome 2 the learner will be required to ride gymnastic jumping exercises using grid work. This outcome should be delivered in a practical setting where learners are riding regularly under instruction. Learners should have the opportunity to work with a range of horses with the emphasis on riding safely when working over fences. Learners should be made aware of health and safety and appropriate working practice when working around and over jumps within a riding arena taking account of other users. The importance of pace and distances must be an important aspect of delivery.

In Outcome 3 the learner will be required to ride over a course of fences. This outcome should be delivered in a practical setting where learners are riding regularly under instruction. Learners should have the opportunity to work with a range of horses with the emphasis on riding safely when working over jumps. Learners should be made aware of health and safety and appropriate working practice when working around and over jumps within a riding arena taking account of other users. The importance of pace and direction must be an important aspect of delivery.

In Outcome 4, the learner will be required to ride on the road and in the open. This outcome should be delivered in a practical setting where learners are riding regularly under instruction. Although it is accepted that there will be some formal delivery the importance of the practical component supported with demonstration is integral to the success of this outcome. Learners should be made aware of health and safety and appropriate working practice when working on the road and in open spaces. An awareness of the Highway and Country Code is essential as is the respect of others users. Health and safety with regard to appropriate dress must be strongly emphasised within the delivery of this outcome.

Learners working towards level 3 are likely to have some riding experience including on the flat and over fences. The unit aims to extend the learner's knowledge and practical awareness of riding including working on the flat, grid work and gymnastic jumping, jumping a small course of fences, riding on the road and in the open. The emphasis on safety when riding is paramount and should be stressed throughout to provide learners with a knowledge of riding on the flat and over fences, and the checking of tack and equipment before any riding session indoors and outside.

References

Books

BHS. 2006. *BHS Manual of Equitation.* Kenilworth Press Ltd. ISBN 1872119335

The Department for Transport and Driving Standards Agency. 2007. *The Official Highway Code*. Stationery Office Books. ISBN 0115528149

Website

www.direct.gov.uk/highwaycode

Unit 318 Understand the Principles of Animal Nutrition

Level: 3

Credit value: 10

Unit aim:

This unit aims to provide learners with an understanding of the principles of animal nutrition. 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 describe the main components of an animal's diet and understand the requirements of a balanced diet. The learner will be able to explain how specialist feeders obtain their nutrition. The learner will be able to describe the effects of nutritional disorders and deficiencies.

Learning outcomes

There are **four** learning outcomes to this unit. The learner will:

1. Understand the functions of the main components of an animal's diet
2. Understand the nutritional values and properties of different food types
3. Understand the feeding requirements of animals, to ensure they receive a balanced diet
4. Know common animal nutritional problems

Guided learning hours

It is recommended that **60** hours should be allocated for this unit. This may be on a full-time or part-time basis.

Details of the relationship between the unit and relevant national occupational standards

N/A

Endorsement of the unit by a sector or other appropriate body

This unit is endorsed by Lantra SSC

Assessment and grading

This unit will be assessed by:

- An assignment covering practical skills and underpinning knowledge

Unit 318 Understand the Principles of Animal Nutrition

Outcome 1 Understand the functions of the main components of an animal's diet

Assessment Criteria

The learner can:

1. Review the contribution of the **major nutrients** of an animal's diet to maintain health and wellbeing
2. Evaluate the **functions** of the major nutrients within the animal's body
3. Describe where and how the major nutrients are digested and absorbed within the body:
   - **Single stomach**
   - **Ruminant**

Range

Animal Management – companion (dog or cat) and either small mammals (rabbit and rodents) or exotics or large mammals (goat, camelids, donkey, pig or other available large mammals)

Horse Management – Horses, ponies or donkeys

Unit content

Major nutrients

Carbohydrates (monosaccharide, disaccharides and polysaccharides), proteins (amino acids, peptides and polypeptides), fats/lipids (fatty acids), vitamins (fat and water soluble forms), minerals (macro and micro classes), water

Functions

Energy, structure, storage, waterproofing, insulation, growth and repair, anabolism and catabolism

Single stomach

Digestive system organs, e.g. stomach, liver, use of teeth/dentition, role of enzymes, acidic and alkaline secretions, absorption of sugars, amino acids and fatty acids, storage/anabolism, hindgut fermenters, the role of microbes in digestion

Ruminant

Digestive system organs, e.g. compartments of the stomach, caecum, liver, use of teeth/dentition, role of microbial organisms in fibre fermentation, partition of protein in the rumen

Unit 318 Understand the Principles of Animal Nutrition

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

Assessment Criteria

The learner can:

1. Examine the **requirements for a balanced diet**:
    - nutrient content
    - digestibility
    - palatability
2. Analyse the **nutritional values of different foods and food types**
3. Compare the suitability of **different types of** fresh and prepared **foods** appropriate for feeding a range of animals

Range

Animal Management – companion (dog or cat) and either small mammals (rabbit and rodents) or exotics or large mammals (goat, camelids, donkey, pig or other available large mammals)

Horse Management – Horses, ponies or donkeys

Unit content

Requirements for a balanced diet

Nutrient content, digestibility, food presentation and palatability, animal appetite, content of diet, suitability for animal, balanced of major nutrients, supplementation required, requirements of animals at different life stages and animals used for different purposes, changes in diet for these animals

Nutritional values of different foods and food types

Compare nutritional values of different foods for animals, e.g. compare nutrient content of wet and dry diets, forage and mixed compounds, comparisons should reflect animals at a variety of life stages

Different types of foods

As applicable to species
Fresh: e.g. fruit, vegetables, meat, forage
Prepared: e.g. dried, tinned, semi-moist, extruded, seeds, nuts

Unit 318 Understand the Principles of Animal Nutrition

Outcome 3 Understand the feeding requirements of animals, to ensure they receive a balanced diet

Assessment Criteria

The learner can:

1. Explain the **requirements for a balanced** animal **diet**
2. **Calculate rations** for a range of animal diets
3. Explain the dietary requirements for animals at **different life stages**

Range

Animal Management – companion (dog or cat) and either small mammals (rabbit and rodents) or exotics or large mammals (goat, camelids, donkey, pig or other available large mammals)

Horse Management – Horses, ponies or donkeys

Unit content

Requirements for a balanced diet

Nutrients, assess energy and protein needs and work level, energy balance

Calculate the rations

Feed items and ingredients, calculate the amount and the content e.g. energy value (Kcal), 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

Different life stages

Growth, breeding/pregnancy, lactation, young, adult and geriatric

Unit 318 Understand the Principles of Animal Nutrition

Outcome 4 Know common animal nutritional problems

Assessment Criteria

The learner can:

1. Describe the **causes and signs of animal nutritional deficiencies, excesses and disorders**
2. Explain how nutritional deficiencies, excesses and disorders can be **treated**

Range

Animal Management – companion (dog or cat) and either small mammals (rabbit and rodents) or exotics or large mammals (goat, camelids, donkey, pig or other available large mammals)

Horse Management – Horses, ponies or donkeys

Unit content

Causes and signs of animal nutritional deficiencies, excesses and disorders

Under eating (anorexia), loss of appetite, dysphagia, vitamins, minerals, protein, overeating (obesity), constipation, diarrhoea, diabetes, urolithiasis, water and dehydration

Treatments

Balanced intake, supplements, palatability, exercise, fluids, fibre, vitamin or hormone injections, antibiotics, insulin and surgery

Unit 318 Understand the Principles of Animal Nutrition

Notes for guidance

This unit is designed to provide the learner with a sound knowledge and understanding required to provide animals with a balanced diet specific to the animals' needs. The unit should cover a range of species as appropriate to the area of study.

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. In particular, health and safety issues relating to food preparation and feeding must be stressed to learners and regularly enforced.

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

In Outcome 1, the learner will investigate the functions of the major nutrients in the diet and how they are used in the body of a single-stomached animal and a ruminant. The learner will be expected to describe the chemical structure of monosaccharide, disaccharides, fatty acids, amino acids and dipeptides. This outcome is likely to be delivered by formal lectures, presentations and independent learner research.

In Outcome 2, the learner will be able to compare different feeds with regard to the nutrient content, digestibility and palatability. This can be delivered by formal lectures, presentations, seminars, independent learner research or practical activities such as analysing feed bags/packets.

In Outcome 3, the learner will calculate rations for animals within the range and will explain how the ration may differ at different life stages. Some delivery will be by formal lectures, some independent learner research will be required and reference sources will be required for the students to derive energy and protein requirements. Calculations will be required, so access to calculators will be needed.

In Outcome 4, the learner will investigate the effects of nutrition on the health of the animal. This outcome is likely to be delivered by formal lectures, presentations and independent learner research, and would benefit from having guest speakers involved in the delivery, such as vets or vet nurses, representatives from feed companies and animal diet specialists.

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 reflects current industry practice.

References

Books

Agar, S. 2001. *Small Animal Nutrition* Butterworth-Heinemann, ISBN 075064575X

Burger, I. 1993. *The Waltham Book of Companion Animal Nutrition, 2nd Edition* Butterworth-Heinemann, ISBN 0080408435

Case, C. and Hirakawa, D. 2000. *Canine and Feline Nutrition: A Resource for Companion Animal Professionals, 2nd Edition* CV Mosby Co, ISBN 0323004431

Kelly, N. & Willis, J. 1996. *BSAVA Manual of Companion Animal Nutrition and Feeding* BSAVA, ISBN 090521434X

McDonald, P. Edwards, R. Greenhalgh, J. & Morgan, C. 2002. *Animal Nutrition, 6th Edition* Prentice Hall, ISBN 0582419069

McNamara, J. 2005. *Principles of Companion Animal Nutrition* Prentice Hall, ISBN 0131512587

Pond, W., Pond, K., Schoknecht, P., & Church, D., 2005 *Basic Animal Nutrition and Feeding* John Wiley and Sons, ISBN 0471658936

Frape, D. 2004. Equine Nutrition and feeding 3rd Ed. Wiley Blackwell

Pillner, S. 1999. Horse Nutrition and feeding 2nd Ed. Wiley Blackwell

Bishop, R. 2005. The Horse Nutrition Bible: The Comprehensive Guide to the Correct Feeding of your Horse. David & Charles PLC

Journals

Fur and Feather

Websites

www.hillspet.com	Hills Science Diets
www.iams.co.uk	IAMS/EUKANUBA
www.waltham.com	Waltham Centre for Pet Nutrition

Unit 319 Introduction to the Horse Driving Industry

Level: 3

Credit value: 10

Unit aim

This unit aims to provide an introduction into the principles and practices of the harness horse sector. It covers some of the knowledge, understanding and skills required as pre-requisites for entry to the British Driving Society (BDS) Harness Horse Groom's or Driver's Diploma Courses. This unit is primarily aimed at learners within a centre based setting looking to progress into the sector or further education and training.

The learner will be able to identify the parts and describe the functions of all parts of a traditional Single set of English leather horse/pony harness and horse drawn vehicle and assist with harnessing-up and putting-to a Single horse or pony for use. They will be able to clean a set of traditional Single horse/pony harness and horse drawn vehicle and understand the importance of cleaning and maintaining harness and vehicle in fit condition for use. The learner will understand the historic role of the harness horse, and the use of the harness horse in the modern-day context, including the role of the horse in crop cultivation and food production. They will be familiar with the main types of harness horse competition, and know the basic rules of cross country competition driving and show-ring driving.

Learning outcomes

There are **five** learning outcomes to this unit. The learner will:

1. Be able to identify and assist with harnessing
2. Know the difference between types of horse drawn vehicles
3. Understand the history of driving
4. Understand the rules of competition driving
5. Understand the role of the horse in cultivation

Guided learning hours

It is recommended that **60** hours should be allocated for this unit. This may be on a full-time or part-time basis.

Details of the relationship between the unit and relevant national occupational standards

n/a

Endorsement of the unit by a sector or other appropriate body

This unit is endorsed by Lantra SSC

Assessment and grading

This unit will be assessed by:

- An assignment covering practical skills and underpinning knowledge.

Unit 319 Introduction to the Horse Driving Industry

Outcome 1 Be able to identify and assist with harnessing

Assessment Criteria

The learner can:

1. Identify the **parts of a traditional single harness set**
2. Outline the **functions of the parts of a traditional single harness set**
3. Assist with **putting on a traditional single harness set**

Range

Horses or ponies may be used, depending which is available.

Harness may be suitable for Light harness horses or ponies pulling 'carriages' on the public highway, NOT heavy horse harness used to operate agricultural implements

The horse drawn vehicle may be either two or four wheeled, and may be a traditional vehicle or a modern reproduction. The vehicle must NOT be a 'skeleton-type' vehicle with pneumatic/inflatable tyres or a flat cart

Unit content

Parts of a traditional single harness set

Parts of a set of traditional, English leather harness
Harness disassembled (taken apart) for this purpose, each component part separately named and identified from memory, checks to each piece for wear, tear and damage and fitness for use, harness re-assembled correctly for use

Functions of the parts of a traditional single harness set

Functions of each piece of harness, correct placement of each component part, use and function in relation to the driver and vehicle

Putting on a traditional single harness set

Assist an experienced driver to: put harness on the horse or pony, checks to each piece of harness for correct fit and attachment, select suitable area for putting-to, position the horse correctly, assist with lifting shafts and passing through tugs, assist with attaching traces and breeching to vehicle, maintain control of the horse at all times

Unit 319 Introduction to the Horse Driving Industry

Outcome 2 Know the differences between types of horse drawn vehicles

Assessment Criteria

The learner can:

1. Identify the parts of a **traditional single horse drawn vehicle**
2. Describe the **functions of the parts** of the vehicle
3. Identify **3 horse drawn vehicles, implements and equipment** and how they would be **used**

Range

Either a two or four wheeled vehicle which is assembled and ready for use

Examples to include: gig, dog cart, governess cart, rally car, butcher's cart' milk float, Royal Mail Coach, landau, plough, harrows, carriage lamps, driving whip, whip socket, driving whip, driving apron (illustrations may be used for the purpose of assessment, although the learner should have seen actual examples)

Unit content

Traditional single horse drawn vehicle

Parts of a traditional: Single horse drawn vehicles (two or four wheeler), checks made to the vehicle for wear, tear and damage, fitness for use

Functions of the parts

Functions of the parts of the vehicle

3 horse drawn vehicles, implements and equipment

Three items from the range of horse drawn vehicles, agricultural implements and driving related equipment, how they would normally be used

Unit 319 Introduction to the Horse Driving Industry

Outcome 3 Understand the history of driving

Assessment Criteria

The learner can:

1. Describe a **typical journey** by horse drawn vehicle **in the 19th Century** (between 1800 and 1900), and **compare** a similar journey **in modern times**
2. Describe the use of the **harness horse in war**
3. Describe the **historic use** of the harness horse **to deliver** household **goods**

Range

Any factual article, book, diary, letter, etc, or any work of fiction may be used as source material (see suggested reading list). The points of departure and arrival, plus the route, must be actual, identifiable places, not 'fantasy' places. The journey should be at least 20 miles in length and should require at least one change of horses. The journey can be carried out with any combination of Single, Pair or Team of Four horses

Any war in which harness horses played a major part may be selected

Any period of history may be selected, up to 1900

Unit content

Typical journey in the 19th Century compared in modern times

Plan the same journey in the modern day, taking into account modern road traffic conditions, when and where to change horses, route changes necessitated by change of use of historic routes (i.e. planning a viable alternative where the original route is now a motorway and unavailable for horse drawn vehicles), use of horseboxes to transport horses between change/rest points, planning for emergency veterinary and farriery care en route, issues of police and local authority permission to enter town centres with a slow-moving vehicle

Harness horse in war

The use of the horse in a real/identifiable, historic war situation
The role and contribution of the harness horse in relation to Army horse artillery/gun carriages, supply wagons, ambulances (see suggested reading list)

Historic use to deliver goods

How household goods (bread, milk, coal, etc) would have been delivered by horse drawn vehicle pre 1900
Where the horse would have lived, the hours per day worked and rest periods, welfare issues, how perishable items would have been kept fresh during the delivery round, estimate number of horses used for every-day delivery purposes in the UK during chosen period

Unit 319 Introduction to the Horse Driving Industry

Outcome 4 Understand the rules of competition driving

Assessment Criteria

The learner can:

1. Outline the rules of a **BHDTA** horse driving trials competition
2. Outline the rules of a **BDS** private driving class

Unit content

British Horse Driving Trials Association (BHDTA)

Rule Book for: cross-country horse driving trials rules

British Driving Society

Rules for: BDS show-ring private driving classes

Both types of competition may be at Club, County, National or International level

Type of competition, criteria used to select the winner, 'faults' which resulted in other competitors being unplaced or eliminated

Unit 319 Introduction to the Horse Driving Industry

Outcome 5 Understand the role of the horse in cultivation

Assessment Criteria

The learner can:

1. Describe the **traditional role of the horse in land cultivation**
2. Compare the **modern day use of the horse to cultivate crops**

Range

Heavy horses (Shires, Suffolk Punches, Clydesdales, Ardennes, etc)
Cross-bred heavy horses and large cobs may also be used

Unit content

Traditional role of the horse in land cultivation

Explain the importance of the horse in land preparation, crop cultivation, harvesting and food production before the era of mechanisation
Understand the issues of intensive manual labour, and the impact on the working life of both horses and handlers
Describe a typical working day for a farm horse and labourer

Modern day use of the horse to cultivate crops

Explain the modern day use of the horse in crop and food production in respect of organic crops, specialist crops, 'hobby' farming
Compare the benefits of using horses to cultivate organic and specialist crops with using machinery for the same purposes
Identify the ecological benefits in terms of lower carbon footprint, lower impact on land surfaces, 'self fertilisation'

Unit 319 Introduction to the Horse Driving Industry

Notes for guidance

This unit is designed to develop the learner's introductory knowledge and understanding of the horse driving industry in Great Britain. The unit gives a broad overview of some of the main characteristics and operations within driving, including the principles of harness and vehicle identification and general care, the history of harness horse driving, competition driving and the role of the horse in agriculture and food production.

This unit would benefit from structured visits to a wide range of organisations involved in harness horse driving. For example, visits to British Driving Society (BDS) shows and BDS show-ring classes, British Horse Driving Trials Association (BHDTA) competitions, and BDS training yards. Emphasis should be placed upon the introductory nature of this unit and it should aim to stimulate the learner's interest in the subject, with a possible view to them pursuing further training and/or education should they wish to follow a career orientated towards harness horse driving.

Harness horse driving is a complex and wide-ranging subject. Practitioners in the harness horse sector require an extended range of skills and knowledge in terms of harness and horse drawn vehicle care, maintenance, selection and fitting, as well as normal horse care skills and knowledge. Just as the horse riding sector has many sub-disciplines, the harness horse sector has a large number of specialist competitions and classes, however the Harness Horse Sector includes the provision of commercial services as well as recreational and competition activities. The sector is broadly divided into recreational/pleasure driving, competition driving and commercial provision.

Recreational driving ranges from BDS Meets (regular recreational drives held in all parts of the UK, normally on weekends, mainly between April and October), 'picnic' drives, general pleasure driving.

Competition driving can be divided into 3 general categories: Show-ring driving, cross country competition, and scurry driving. Show-ring classes are by far the most numerous, with just under 1,000 individual classes being held annually. Show-ring classes are mainly run under BDS Rules, and may be at 'fun', 'club', 'local', County, National or International level. Many take place at local County or Agricultural Shows. There are qualifiers for National Championships at many County Shows. The British Horse Driving Trials Association (BHDTA) run cross-country competition classes under BHDTA and FEI Rules. Partly due to the expense of running a major BHDTA competition, there are considerably less BHDTA competitions. Scurry Driving also runs under FEI Rules, and classes and qualifiers are frequently held at local and County Shows, with the Championship at the Horse of the Year Show. A few agricultural shows have ploughing competitions for the Heavy Horse, and there are there are Heavy Horse Driving classes at most County Shows. Other competitions include Coaching Classes, BDS Private Driving Classes, BDS Pleasure Driving Classes, BDS Exercise Vehicle Classes, BDS Trek, BHDTA cross-country competitions, Hackney Horse Classes, Scurry Driving, Breed Classes, and Heavy Horse Classes, ploughing competitions.

Unlike the riding horse sector, driving horses are still regarded as a means of transport by the Department for Transport, and many people are surprised by the continuing, considerable commercial provision horse drawn services. Commercial provision includes horse drawn weddings and funerals, passenger rides (normally at theme-parks and historic houses, although there are sea-front rides in certain areas), logging (extracting trees from woodland using horsepower – horses can gain access to places impossible for machinery to operate), specialist/organic land cultivation and crop and food production.

The history of harness horse driving is an important factor, since there are still thousands of historic horse drawn vehicles regularly used for show-ring classes and cultural events, and many agricultural implements are pre-World War I. It is necessary to develop an understanding of the historic and social role of the harness horse in order to use these vehicles and implements in the correct context and to preserve our national Driving heritage.

Careers in the harness horse sector include harness horse grooms employed by private, recreational drivers, who would be responsible for the day to day care of the horse, harness and vehicle and assisting the driver with exercising the horse. Show-ring grooms responsible for turning out harness horses, harness and vehicles to a very high standard for the show-ring. Horse drawn wedding and funeral operators, and operators of horse drawn passenger-rides require grooms to turn out horses, harness and vehicles to a good standard. Some grooms assist with operation of the horse drawn service, assisting with using horses to cultivate crops and produce food.

Learners with this Unit would have the foundation for progressing to BDS Level 2, Harness Horse Groom's Diploma; BDS Level 3 Harness Horse Driver's Diploma.

There is an increasing interest in the use of horses in land management and food production. Whilst it is unrealistic to suppose the horse will ever again be capable of supplying mass-production for supermarkets, there is a definite and increasing role in their use in organic farming and specialist crop production, where mechanised vehicles are either undesirable or unsuitable. The average Heavy Horse, if well cared for, will normally be capable of working for a minimum of 15 years on the land. The issue of organic gasses is off-set by the substantial reduction in carbon footprint. Horses generally impact soil less harshly than machinery, and are also an on-going source of good quality, free, organic fertiliser.

It is important to understand that, whilst all horses are labour-intensive, harness horses have the added dimensions of a considerable quantity of harness plus a vehicle or implements to clean and maintain. The average set of Single harness comprises some 50 separate pieces, all of which have an indispensable function and all of which must be kept clean and regularly maintained. The importance of continually checking for wear, tear and damage to harness and vehicle cannot be over-emphasised. It is equally important to emphasise the need to always work within the safety rules. Whilst harness horse accidents are relatively rare, the two most common causes are failing to notice that a piece of harness or essential part of the vehicle has been allowed to deteriorate to breaking point, or that correct procedures have not been followed when harnessing-up, putting-to or taking-out of the vehicle.

Outcome 1 requires the learner to identify each separate item of harness from a Single set and understand where it should be placed on the horse and what function it performs. Harness charts may be used for this purpose, but it is essential the learner gains experience of handling actual harness. Traditional English leather harness is specified because this is the basis for understanding all other types and styles of harness. 'English' is the correct name for the standard traditional style of harness in normal usage throughout the world (NB: it is incorrect to attempt to refer to this as ' British' harness – it is not a 'nationalistic' term). Leather is the most common material for harness, and is specified as opposed to synthetic harness. It is important to learn harness cleaning on leather harness, since some types of synthetic 'exercise' or 'cross country competition' harness can simply be put in the washing machine which will not teach the learner anything useful about harness cleaning. The leather itself does not have to originate from England. No-one uses synthetic harness in County, National or International Showing classes.

Visits to harness horse driving yards are strongly recommended, both for gaining access to harness and vehicles and for learning correct harness horse handling, harnessing-up and putting-to techniques. A list of approved BDS harness horse yards throughout the UK can be obtained from the BDS Office, (contact details below). It is important a recognised, approved BDS yard is selected, in order to ensure correct content, quality and standards of equipment and information. Some yards offer work-placement, either on a daily or residential basis. Teachers are also able to book visits to BDS Approved Training Centres to develop their own skills and knowledge for this Unit and BDS lecturers can be booked to teach provide equipment and teach modules in college; charges vary.

Approximately 1,000 BDS classes are held throughout the UK, mainly from March – October, including the BDS Osborne Driving Championships at the Horse of the Year Show. Most County Shows have Driving Classes, which is a good opportunity to see a wide variety of historic and modern horse drawn vehicles, including traditional delivery vehicles in the Trade Classes. The BDS also organise local Club competitions most weekends throughout the summer months, and there are a large number of local Affiliated Shows. It may be possible to attend local BDS Meets (at the discretion of the BDS Area Commissioner). Lists of classes and contact details for BDS Area Commissioners are obtainable from the BDS Office, address below.

There are also a much smaller number of BHDTA cross country driving competitions held nationally. Details are obtainable from BHDTA, address below.

Because all harness horse Drivers require assistance from a Harness Horse Groom, there may be opportunities to assist local Driving enthusiasts, by volunteering help to clean harness and vehicles and accompanying the Driver when exercising in harness, or when working horses on the land.

References

Books

Introduction to Driving, BDS publications
The BDS Book of Driving, BDS publications
Smith D J. 1977. *Discovering horse drawn transport of the British Army.* Shire Publications Ltd
Smith D J. 2004. *Discovering Horse-drawn Vehicles*. Shire Publications Ltd. ISBN 0852634035
Zeuner D. 1998. *The Working Horse Manual.* Old Pond Publishing Ltd. ISBN 0852364017

Magazines

Farming Press / Heavy Horse magazine
Heavy Horse Magazine
The Victorian Farm, BBC Publications (book and video)

Website

www.britishdrivingsociety.co.uk
www.horsedrivingtrials.co.uk
www.hackney-horse.org.uk

Unit 320 Introduction to the Horse Racing Industry

Level: 3

Credit value: 10

Unit aim

This unit aims to provide learners with an introduction to some of the operations and activities of horse racing in Great Britain. This unit is primarily aimed at learners within a centre-based setting looking to progress into the sector or to further education and training.

This unit aims to provide learners with an understanding of the principles the operation, administration and financing of British racing and breeding. The unit covers the activities that are typically carried out on a racing yard and the main administrative and documentary requirements to operate in British racing. Learners will also be able to use information to understand the selection of breeding and racing stock.

Learning outcomes

There are **four** learning outcomes to this unit. The learner will:

1. Know the operation, administration and financing of TB racing and breeding in the UK
2. Understand the activities carried out in a racing yard
3. Know the main procedures and documentation requirements in racing yards
4. Be able to use information for the selection of breeding and racing stock

Guided learning hours

It is recommended that **60** hours should be allocated for this unit. This may be on a full-time or part-time basis.

Details of the relationship between the unit and relevant national occupational standards

n/a

Endorsement of the unit by a sector or other appropriate body

This unit is endorsed by Lantra SSC

Assessment and grading

This unit will be assessed by:

- An assignment covering practical skills and underpinning knowledge.

Unit 320 Introduction to the Horse Racing Industry

Outcome 1 Know the operation, administration and financing of TB racing and breeding in the UK

Assessment Criteria

The learner can:

1. Outline the **history and development** of the thoroughbred horse from foundations to the present day
2. Identify the **key organisations** involved with the regulation, governance and administration of racing and thoroughbred breeding

Unit content

History and development

Foundation sire: Darley Arabian, Godolphin Arabian, Byerley Turk
Foundation mares
Key offspring of the foundation stallions for example Herod, Eclipse, Matchem
Breed characteristics of the TB, significant mares and stallions throughout the 17th, 18th, 19th and 20th Centuries

Key organisations

British Horseracing Authority, Horse Race Betting Levy Board, Weatherbys, General Stud Book, Thoroughbred Breeders Association, Racecourse Association, National Trainers Federation

Unit 320 Introduction to the Horse Racing Industry

Outcome 2 Understand the activities carried out in a racing yard

Assessment Criteria

The learner can:

1. Analyse the **geographical factors** influencing the distribution of racecourses and racing yards in the UK
2. Investigate the differing yard **routines** and the effect of **seasonal influences**
3. Investigate the roles and responsibilities of **staff** working on a racing yard

Unit content

Geographical factors

Location of main racing centres, major Flat racing yards and National Hunt racing yards Advantages and disadvantages of training outside the major areas, location patterns of racecourses (independent and group owned), topography of major racecourses that stage Grade One racecourse, features of such racecourses for example Epsom, Ascot, Cheltenham, Aintree

Routines

Non-race days: morning stables, (feeding, watering, mucking out, exercising 'lots', turn out), evening stables: (skipping out, watering, feeding, grooming, checking health/legs, other tasks specific to individual yards if appropriate) late night checks
Race days: pre-race day declarations, morning preparation, journey, arrival at the course, on the day declarations, pre-race care, post-race care, dope testing procedures

Seasonal influences

Time of year, Flat racing season, National Hunt racing season, what happens outside of the racing season

Staff

Trainer, assistant trainer, trainer's secretary, head lad, travelling head lad, work riders, stable staff, apprentice/conditional jockeys

Unit 320 Introduction to the Horse Racing Industry

Outcome 3 Know the main procedures and documentation requirements in racing yards

Assessment Criteria

The learner can:

1. Identify the **racing calendar** and the **major fixture list**
2. Examine the different types of trainer's **licences/permits** available
3. Describe how to complete documentation for **running a racehorse in a race**
4. Describe how to **register horses/owners and colours**

Unit content

Racing calendar

Horse racing seasons for Flat and National Hunt racing

Major fixture list

All major meetings, locations, dates, importance of races e.g. 'Listed', 'Graded', Order of Merit

Licences/permits

Trainers licence: (Combined, Flat only, Jump only), criteria and application process
Permit holder: criteria, application process
Stable staff: registration of a stable employee, application for a Racehorse Attendants Identity Card and Validity Pass

Running a racehorse in a race

Horse registration, vaccination records, pre-race entries, eligibility/qualification criteria, race declarations, jockey declarations

Register horses/owners and colours

Foal registration, naming procedures, owner registration, registration of colours

Unit 320 Introduction to the Horse Racing Industry

Outcome 4 Be able to use information for the selection of breeding and racing stock

Assessment Criteria

The learner can:

1. Use sources of **pedigree** and **performance** information
2. Examine six generation pedigrees of a **sire** and **dam** and pick out common ancestors
3. Use auction **sales** results to assess stallion and mare performance
4. Use an auction sale **catalogue**

Unit content

Pedigree

General Stud Book (GSB) in Great Britain, its history and function, role of Weatherbys as keepers of the GSB

Performance

Racing records, performance records, racing statistics

Sires and dams

Progeny, generation pedigrees, key stallion influences

Sales

Major Thoroughbred sales companies, locations, sales seasons, sales statistics

Sales catalogues

Catalogue information, pedigrees, performance, vendor information, sales procedures, role of agents

Unit 320 Introduction to the Horse Racing Industry

Notes for guidance

This unit is designed to develop the learner's introductory knowledge and understanding of the horseracing industry in United Kingdom. The unit gives a broad overview of some of the main characteristics and operations within racing, including how a racing yard operates and the roles of staff within it.

In Outcome 1, the learner will be expected to acquire an awareness of the background history and development of the Thoroughbred horse. Sessions would include the significance of the foundation stallions and key mares in the make up of today's Thoroughbreds. Learners will be expected to gain an understanding of how the industry works with particular reference to the key organisations. The racing calendar is subject to seasonal variance which should be taken account of in the delivery of this outcome. It is expected that a formal delivery will be a key part of this outcome, however learners should be encouraged to conduct basic research of the racing industry to gain a personal understanding of how the industry works. Educational visits must form an integral part of this outcome and may include Newmarket and Lambourne racing yards and key organisations.

In Outcome 2, the learner will be expected to gain an understanding of the geographical locations important to the racing industry. This would include the main racing centres of Newmarket and Lambourne, for flat racing and steeplechasing. Consideration should also be made for the location of racecourses throughout the UK, the features of the premier race courses and the role of the smaller tracks. It is anticipated that the delivery of this outcome will be formal, but educational visits to racing yards are recommended. This should provide opportunity to gain an understanding of a racing yard routine and the roles of the staff. It is expected that learners will research elements of this outcome but it is also expected that visits to racecourses on racing day would provide an insight into the racing world.

In Outcome 3, learners should be given the opportunity to examine the racing fixture list and gain an understanding of the racing calendar. It is expected that this outcome will be delivered formally and will take account of the role of trainers, licenses and permits and the documentation and procedural requirements for running a race horse and registering owners and colours. It is recommended that educational visits will form an integral part of this outcome and help learners to gain an understanding of racing in the UK. The use of visiting speakers selected from the racing industry would be beneficial in providing learners with a first hand insight into the sector and provide a valuable opportunity to question experts in their field.

Outcome 4 should form an integral link with other outcomes and provide learners with the opportunity to examine pedigree and performance and changes through breeding generations. Although it is anticipated that a formal approach to the delivery of this outcome will be adopted, it is expected that educational visits will also form an important part of the outcome. Visit to auctions and sales and the examination and use of sales catalogues may provide a valuable insight into the selling of thoroughbred horses and the assessment of bloodstock.

This unit would benefit from structured visits to a wide range of organisations involved in horse racing. For example, visits to the British Horseracing Museum, National Stud, Flat and National Hunt (NH) yards, plus auctions and sales. Emphasis should be placed upon the introductory nature of this unit and it should aim to stimulate the learner's interest in the subject, with a possible view to them pursuing further training and/or education should they wish to follow a career orientated towards racing.

References

Websites

www.britishhorseracing.com	British Horseracing Authority
www.hblb.org.uk	Horseracing Betting Levy Board
www.weatherbys.co.uk	Weatherbys – Administrators to British Horseracing Board
en.wikipedia.org/wiki/General_Stud_Book	The General Stud Book
www.thoroughbredbreedersassociation.co.uk	Thoroughbred Breeders Association
www.britishracecourses.org	The Racecourse Association
www.racehorsetrainers.org	National Trainers Federation

Unit 321 Riding Horses on the Flat

Level: 3

Credit value: 10

Unit aim

This unit aims to provide learners with an understanding of the principles of riding horses on the flat and how these can be applied in practice. This unit is primarily aimed at learners within a centre-based setting looking to progress into the sector or further education and training.

This unit contributes to the riding skills of learners who may wish to progress into work and continue their training in the equine industry towards being a rider, trainer or instructor. It focuses on developing a sound, practical base for riding and training horses. Whilst largely practical, learners will be encouraged to engage with the theory of training horses on the flat to enhance their abilities.

Learning outcomes

There are **four** learning outcomes to this unit. The learner will:

1. Be able to demonstrate a correct riding position on the flat
2. Be able to work a horse on the flat
3. Be able to use training exercises to improve flatwork
4. Know how to assess a horse on the flat

Guided learning hours

It is recommended that **60** hours should be allocated for this unit. This may be on a full-time or part-time basis.

Details of the relationship between the unit and relevant national occupational standards

316.1 Ride schooled horses to maintain training

Endorsement of the unit by a sector or other appropriate body

This unit is endorsed by Lantra SSC

Assessment and grading

This unit will be assessed by:

- An assignment covering practical skills and underpinning knowledge.

Unit 321 Riding Horses on the Flat

Outcome 1 Be able to demonstrate a correct riding position on the flat

Assessment Criteria

The learner can:

1. **Demonstrate a correct riding position** in all three paces
2. **Apply natural and artificial aids correctly**

Range

A range of riding horses for work on the flat

Unit content

Demonstrate a correct riding position

Balanced seat, equal weight distribution, straight line through shoulder, hip, heel and elbow, hand, rein, sitting tall, shoulders above seat, weight into heel, secure lower leg, suppleness, maintained in walk, trot and canter

Apply natural aids correctly

Apply aids for halt, walk, trot, canter, sitting trot
The use of natural aids: leg, hand, weight, seat, voice

Apply artificial aids correctly

The use of artificial aids: spurs, whip, martingales, Market Harborough, draw reins, running reins and other aids that will improve the positioning of the horse's head, neck and top line

Unit 321 Riding Horses on the Flat

Outcome 2 Be able to work a horse on the flat

Assessment Criteria

The learner can:

1. **Work the horse on the flat** to demonstrate:
    - Rhythm
    - Balance
    - Straightness
    - Impulsion
    - Suppleness
2. **Ride with effective contact** when riding a horse on the flat

Range

A range of riding horses for work on the flat

Unit content

Work the horse on the flat

Awareness of appropriate warm-up work, awareness and feel for rhythm, balance, straightness, and impulsion, suppleness of the outline in walk, trot and canter, through transitions, indirect, direct, transitions within the pace, both upward and downward, developing a horse's working outline, position of head, energy from the hindquarters over the back into a light, even contact, suppleness over the back, progression through a training session, sequence of exercises through logical progression

Ride with effective contact

Definition of contact, awareness of even, controlled contact, co-ordinating leg and hand aids, softness and suppleness of the outline, engagement in walk, trot, canter, school movements, circles on and away from the track (10m, 15m, 20m), changes of rein, shapes, loops in from the track, riding on the ¾ line, 3 and 4 loop serpentines, changes of pace and transitions, indirect, direct, transitions within the pace

Unit 321 Riding Horses on the Flat

Outcome 3 Be able to use training exercises to improve flatwork

Assessment Criteria

The learner can:

1. **Carry out training exercises** to improve flatwork
    - School figures and movements
    - Transitions
    - Lateral work
2. **Assess the effectiveness of training exercises**

Range

A range of riding horses for work on the flat.

Unit content

Carry out training exercises

Reasons for training exercises such as school figures and movements, circles on and away from the track (10m, 15m, 20m), changes of rein, shapes, loops in from the track, riding on the ¾ line, changes of rein, 3 and 4 loop serpentines, loops
Transitions: direct, indirect, within the pace
Lateral work: reasons for lateral work, leg yielding, shoulder in, quarters in, turn on the forehand, correct aids required for lateral work

Assess the effectiveness of training exercises

Assessment of school figures, movements, transitions, lateral work and how they maintain the horses' way of going, assessment of the effect of training exercises demonstrated, effect on way of going, horses balance, suppleness, rhythm, contact, tempo, quality of work shown, procedure and practice for assessing a horse's way of going

Unit 321 Riding Horses on the Flat

Outcome 4 Know how to assess a horse on the flat

Assessment Criteria

The learner can:

1. Describe how to **assess a horse's level of training**
2. **Plan training exercises** to improve a horse

Unit content

Assess a horse's level of training

Procedure for assessing a horse's flat work to take consideration of working in procedures and assessment of balance, suppleness, bend, rhythm, straightness, impulsion, contact, paces, school movement and figures, transitions and level of lateral work, identification of strength and weaknesses such as stiff or hollow side

Plan training exercises

The purpose and reasons for planning training programmes, considerations for planning programmes of work, related range of exercises that may improve a horse's performance, relating and sequencing exercises, how movements and exercises may improve specific problems and develop a horse's way of going, how they will improve the way of going, time scales required, scales of training

Unit 321 Riding Horses on the Flat

Notes for guidance

This unit is designed to provide the learner with the ability to ride and assist with training horses to enhance quality of work, whilst considering the theory of training.

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

In Outcome 1, the learner will be required to develop a correct flat work riding position. The emphasis should be placed on the correct application of the aids and the maintenance of an effective position. It is expected that there will be an element of theoretical delivery and demonstrations used within the teaching of this outcome. The importance of riding instruction is emphasised strongly. Theoretical and practical delivery should encourage learners to work safely with a range of equipment. They should be encouraged to work and deal with horses in a way which reduces stress and minimises injury to the learner, horses and others.

Outcome 2 requires the learner to develop an understanding and ability to work a horse. The importance of adopting an appropriate outline and contact, showing balance, suppleness, rhythm, tempo and impulsion should be highlighted. The importance of riding instruction in the delivery of Outcome 2 is strongly emphasised, it is anticipated that this will be supported by more formal delivery and demonstration. Learners should be shown how to work and deal with the horse in a way which reduces stress and minimises injury to the learner, horses and others.

In Outcome 3, the learner will be required to develop an ability to use training exercises to improve flatwork. The importance of riding instruction in the delivery of Outcome 2 is strongly emphasised. It is anticipated that this will be supported by more formal delivery and demonstration. Learners should be provided with the opportunity to assess the effectiveness of training exercises which may include riding themselves and observing others. Learners should be shown how to work and deal with the horse in a way which reduces stress and minimises injury to the learner, animals and others.

In Outcome 4, the learner will be encouraged to develop an understanding of how to assess a horse's way of going and level of training. This outcome will be delivered formally supported by demonstration with the opportunity to observe horse's working. The delivery of this outcome will be developed through the use of visiting speakers and visits to training yards to observe trainers working with horses and riders. The emphasis on linked work and how exercises and movements should be sequenced is important. This should include the methods and procedures used to assess a horse. The importance of horse welfare should be stressed throughout the delivery of this outcome.

Learners working towards level 3 are likely to have gained some riding experience. This unit aims to extend the learners knowledge and skills of flat work. Emphasis should be placed on practical participation, however it is accepted that some formal delivery will be required to support the tuition. Tutors are encouraged to relate the content of all of the outcomes within riding lessons and provide learners with the opportunity to work with a range of horses and equipment which reflects current industry practice. Centres are encouraged to introduce employers and specific professionals from industry to provide interesting and relevant information.

References

Books

British Horse Society. 2006. *The BHS Manual of Equitation*. Kenilworth Press Ltd. ISBN 1872119335
Cave M. 1999. *The Course Companion for BHS Stage III.* J.A.Allen & Co Ltd. ISBN 0851316567
Auty I and Linington-Payne M. 2008. *The BHS Complete Training Manual for Stage 1.* Kenilworth Press Ltd. ISBN 1905693207
Linington-Payne M. 2008. *The British Horse Society Riding Manual.* Barron's Educational Series. ISBN 0764161124
McBane S. 1998. *Horse Care and Riding: A Thinking Approach*. David & Charles PLC. ISBN 0715302200

Unit 322 Riding Horses Over Fences

Level: 3

Credit value: 10

Unit aim

This unit aims to provide learners with an understanding of the principles of riding horses over fences and how these can be applied in practice. This unit is primarily aimed at learners within a centre-based setting looking to progress into the sector or further education and training.

This unit contributes to the riding skills of learners who may wish to progress into work and continue their training in the equine industry towards being a rider, trainer or instructor. It focuses on developing a sound, practical base for riding and training horses. Whilst largely practical, learners will be encouraged to engage with theory of training horses over fences to enhance their abilities.

Learning outcomes

There are **four** learning outcomes to this unit. The learner will:

1. Understand effective jumping techniques
2. Be able to ride a horse through a jumping grid
3. Be able to ride a course of fences
4. Be able to ride over cross country fences

Guided learning hours

It is recommended that **60** hours should be allocated for this unit. This may be on a full-time or part-time basis.

Details of the relationship between the unit and relevant national occupational standards

NOS 316.2 Jump schooled horses to maintain training

Endorsement of the unit by a sector or other appropriate body

This unit is endorsed by Lantra SSC

Assessment and grading

This unit will be assessed by:

- An assignment covering practical skills and underpinning knowledge.

Unit 322 Riding Horses Over Fences

Outcome 1 Understand effective jumping techniques

Assessment Criteria

The learner can:

1. Discuss an **effective jumping position** for the rider
2. Explain **safety considerations for horse and rider when jumping**
3. Describe a **correct approach, landing and getaway** for different types of fences
4. Describe correct **distances and construction of:**
    - **show jumps**
    - **cross country fences**

Unit content

Effective jumping position

Consideration of the terminology of: forward position, poised position and light seat, riding position approaching a fence, over a fence, recovery, landing and riding away from a fence
Stirrup length, balance, hand/leg co-ordination
The use of the jump position, and when to adopt a more upright posture
Importance of being able to maintain leg and hand aids
When and when not to adopt a jumping position
Adapting position to move at speed

Safety considerations for horse and rider when jumping

Jump positioning, distances between fences, height of jumps and width, types of fence, the use and checking of equipment for horse and rider, number of horses and riders in the riding area, school rules as appropriate, terrain, weather conditions, clothing

Correct approach, landing and getaway

Control and pace, line and corner when riding towards a fence, straightness of line, time for the horse to see the fence, riding away from the fence at appropriate speed and balancing for the next jump, pace and speed when working with different types of fences
Balance of rider, use of hands

Distance and construction of: show jumps and cross country fences

Principles and practice of measuring distance between jumps and fences to include related distance between fences (as in more than two non jumping strides), doubles one and two non-jumping strides, grids, trotting poles, placing poles, consideration of terrain and conditions

Unit 322 Riding Horses Over Fences

Outcome 2 Be able to ride a horse through a jumping grid

Assessment Criteria

The learner can:

1. Maintain a **balanced canter in a light/forward seat**
2. **Jump through a grid of fences**
3. **Maintain a balanced position** when riding through a jumping grid

Unit content

Balanced canter in a light forward seat

Riding in forward position, poised position and light seat, riding in canter and between fences. Stirrup length, balance, hand leg co-ordination maintaining leg and hand aids to adjust pace, speed and direction, adapting position to move at varying canter speed on corners and straight line

Jump through a grid of fences and maintain a balanced position

Riding in forward position, poised position and light seat, riding position approaching a fence, over a fence, recovery, landing and riding away from a fence
Stirrup length, balance, hand/leg co-ordination
Using the jump position, and adopting a more upright posture as required
Maintaining leg and hand aids. When and when not to adopt a jumping position
Adapting position to changes within a grid

Unit 322 Riding Horses Over Fences

Outcome 3 Be able to ride a course of fences

Assessment Criteria

The learner can:

1. Ride a horse to **maintain its level of training round a course of show jumps**
2. Maintain a **secure and balanced position when riding round a course of show jumps**

Unit content

Maintain its level of training round a course of show jumps

Consideration of the horses basic way of going which should include, the awareness and ability to ride forward, maintain rhythm and pace and riding in the correct form which should include preparation.
Selection and riding at the appropriate speed to take account of space, facilities, terrain, weather, other users, canter speed, control, approach and getaway from fences, riding between fences, maintenance of leg and hand aids

Secure and balanced position when riding round a course of show jumps

Riding in forward position, poised position and light seat, riding position approaching a fence, over a fence, recovery, landing and riding away from a fence
Stirrup length, balance, hand/leg co-ordination
Using the jump position, and adopting a more upright posture as required
Maintaining leg and hand aids
When and when not to adopt a jumping position
Adapting position to changes around a course of fences

Unit 322 Riding Horses Over Fences

Outcome 4 Be able to ride over cross country fences

Assessment Criteria

The learner can:

1. Demonstrate **correct speed with regard to the terrain**
2. Demonstrate **riding over cross country fences safely**
3. Maintain a secure and balanced **position when riding round a course of cross country fences**

Unit content

Correct speed with regard to terrain

Adapting speed to take account of the terrain, location of and type of fences which may include combinations, the use of trot, canter and gallop, the maintenance of rhythm and control, adjusting pace within a pace, use of aids, ground conditions and light

Riding over cross country fences safely

Consideration of the horses basic way of going which should include the awareness and ability to ride forward, maintain rhythm and pace and riding in the correct form which should include preparation
Selection and riding at the appropriate speed to take account of space, facilities, terrain, weather, other users, canter speed, control, approach and getaway from fences, riding between fences, maintenance of leg and hand aids

Position when riding round a course of cross country fences

Riding in forward position, poised position and light seat, riding position approaching a fence, over a fence, recovery, landing and riding away from a fence
Stirrup length, balance, hand leg co-ordination
Using the jump position, and adopting a more upright posture as required
Maintaining leg and hand aids
When and when not to adopt a jumping position
Adapting position to changes around a course of cross country fences

Unit 322 Riding Horses Over Fences

Notes for guidance

This unit is designed to provide the learner with the knowledge and skills required to ride a trained horse in a riding school, over a line of grid fences and over a show jumping course and cross country fences.

Riding horses over fences is one of the most essential components of a horse's routine. It is essential that learners develop knowledge and skills through practice and riding instruction. Throughout the unit the emphasis should be on safe working. It is expected that learners will be aware of safe practice and accepted behaviour within the context of the riding environment.

In Outcome 1, the learner will be required to understand the purpose and need to maintain an effective jumping position. They should be made aware of the safety considerations for the horse and rider. It is important for the learner to establish knowledge of the correct approach, landing and getaway for different types of fences. They should also understand the correct distances and construction of show jumping and cross country fences. Although it is accepted that there will be some formal delivery the importance of the practical component supported with demonstration is integral to the success of this outcome.

In Outcome 2 the learner should gain an understanding of riding gymnastic jumping and grid work exercises to a maximum height of 2'11" (90cm). This outcome should be delivered in a practical setting where learners are riding regularly under instruction. Learners should have the opportunity to work with a range of horses with the emphasis on riding safely when working over fences. Although it is accepted that there will be some formal delivery the importance of the practical component supported with demonstration is integral to the success of this outcome. Learners should be made aware of health and safety and appropriate working practice when working around and over jumps within a riding arena and in open spaces taking account of other users. The importance of pace and distances must be an important aspect of delivery and reaffirm safety considerations.

In Outcome 3 the learner will be required to ride over a course of fences to a maximum height of 2'11" (90cm). This outcome should be delivered in a practical setting where learners are riding regularly under instruction. Learners should have the opportunity to work with a range of horses with the emphasis on riding safely when working over jumps. Although it is accepted that there will be some formal delivery the importance of the practical component supported with demonstration is integral to the achievement of this outcome. Learners should be made aware of health and safety and appropriate working practice when working around and over jumps within a riding arena taking account of other users. The importance of pace and direction must be an important aspect of delivery and reaffirm safety considerations.

In Outcome 4, the learner will be required to ride cross country fences in the open to a maximum height of 2'11" (90cm). This outcome should be delivered in a practical setting where learners are riding regularly under instruction. Although it is accepted that there will be some formal delivery the importance of the practical component supported with demonstration is an integral part of this outcome. Learners should be made aware of health and safety and appropriate working practice when working in open spaces. Health and safety with regard to appropriate dress must be strongly emphasised within the delivery of this outcome. The importance of stressing the requirement of maintaining pace control and direction while working in a variety of situations should be confirmed to enhance health and safety considerations.

It is anticipated that learners working toward level 3 will have gained some experience of riding horses in a variety of jumping situations. The unit aims to extend the learners practical skills and knowledge with an emphasis on correct riding principles and the horse's way of going. Although learners will not be expected to train horses they should be able to maintain a horses training and recognise good and incorrect aspects of work. A strong regard for health and safety should be instilled through out the unit with regard to tack, clothing, equipment and procedure.

References

Books

British Horse Society. 2006. *The BHS Manual of Equitation*. Kenilworth Press Ltd. ISBN 1872119335
Houghton Brown J. 1997. *Teaching Jumping*. WileyBlackwell. ISBN 0632041275
Paalman A and Holstein G. 1999. *Training Show Jumpers*. J A Allen. ISBN 0851315485
Hadley S. 1987. *Training the Show Jumper.* Kenilworth Press Ltd. ISBN 0901366740

Magazines

Horse and Hound

Unit 323 Understand the Principles of Equitation

Level: 3

Credit value: 10

Unit aim

This unit aims to provide learners with an understanding of the principles of equitation. This unit is primarily aimed at learners within a centre-based setting looking to progress into the sector or further education and training.

This unit will give learners an understanding of how and why theory is fundamental to riding horses. It will equip learners with underpinning knowledge which directly supports practical riding units.

Learning outcomes

There are **four** learning outcomes to this unit. The learner will:

1. Understand the correct procedures for training horses from the ground
2. Understand techniques for training on the flat
3. Understand techniques for training over fences
4. Know methods used for training horses

Guided learning hours

It is recommended that **60** hours should be allocated for this unit. This may be on a full-time or part-time basis.

Details of the relationship between the unit and relevant national occupational standards

314.1 Contribute to the design and implementation of daily exercise programmes for horses

315.1 Ride horses for exercise

315.2 Ride and lead horses for exercise

316.1 Ride schooled horses to maintain training

316.2 Jump schooled horses to maintain training

Endorsement of the unit by a sector or other appropriate body

This unit is endorsed by Lantra SSC.

Assessment and grading

This unit will be assessed by:

- An assignment covering practical skills and underpinning knowledge.

Unit 323 Understand the Principles of Equitation

Outcome 1 Understand the correct procedures for training horses from the ground

Assessment Criteria

The learner can:

1. **Explain how lungeing can be used to train horses**
2. **Explain how long reining can be used to train horses**
3. **Examine loose schooling as a training method**

Unit content

Explain how lungeing can be used to train horses

Reasons for lungeing, uses, benefits and disadvantages, exercises then can be incorporated into lungeing to improve the horses way of going, training aids (side reins, pessoa, chambon, de-gogue, their uses, advantages and disadvantages), procedure for lungeing horses, position of horse and handler, line between horse, whip and handler, position and use of whip and voice, size of circle, safety whilst lungeing

Explain how long reining can be used to train horses

Reasons for long reining, uses, benefits and disadvantages, exercises that can be incorporated into long reining to improve the horses way of going, long reining on a circle, long reining in straight lines, places to long rein on circles and on straight lines, safety considerations

Examine loose schooling as a training method

Definition of loose schooling, how it may be used, reasons for loose schooling, benefits, advantages and disadvantages, training exercises that maybe used when loose schooling, layout of arena or loose schooling area, personnel involved, equipment, procedure, safe working practice

Unit 323 Understand the Principles of Equitation

Outcome 2 Understand techniques for training on the flat

Assessment Criteria

The learner can:

1. Discuss the **history of classical riding**
2. Discuss the **influences of classical riding** for training on the flat
3. Discuss the use of **tack and equipment for affiliated dressage**

Unit content

History of classical riding

The history and development of dressage, Xenophon, The Art of Horsemanship, stages of dressage development of riding through the ages to modern day competitive work, reasons for development, cultural influences, military influences

Influences of classical riding

Xenophon, The Art of Horsemanship, 16th Century Europe, influence of Cavalry tactics, Spanish Riding School of Vienna, Cadre Noir at Saumur, Classical seat, principles of classical riding, modern views on classical riding

Tack and equipment for affiliated dressage

British Dressage: its roles and responsibilities
British Dressage rule book: permitted and prohibited tack up to medium level dressage, penalties given if incorrect equipment is used, reasons for different tack and equipment and how they help the horse and riders quality of work and schooling tack

Unit 323 Understand the Principles of Equitation

Outcome 3 Understand techniques for training over fences

Assessment Criteria

The learner can:

1. Explain how **ground poles may be used when training horses**
2. Discuss how **gridwork or gymnastic jumping is used when training horses**
3. Discuss the **use of tack and equipment for affiliated jumping**

Unit content

Explain how ground poles may be used when training horses

Reasons for uses, exercises, distances, relationship to flat work, considerations and safety, paces used (walk, trot, canter)

Discuss how gridwork or gymnastic jumping is used when training horses

Definition and examples of grid work, definition and examples of gymnastic jumping, reasons for, uses, exercises, distances between jumps and how they are measured, relationship to flat work, considerations and safety

Discuss the use of tack and equipment for affiliated jumping

Tack and equipment available and its suitability for use: poles, raised poles, jumps, grid work, single fences, types of fences, reasons for use, importance of correct use, benefits and disadvantages, considerations before use, comparisons

Unit 323 Understand the Principles of Equitation

Outcome 4 Know methods used for training horses

Assessment Criteria

The learner can:

1. Outline the **schooling aims for different horses**
2. Describe the **purpose and effect of different schooling methods**
3. Outline **factors which may affect or impede the training of a horse**

Unit content

Schooling aims for different horses

Assessment of horses on the flat and over fences, identify areas for improvement and maintenance, identify aims required to fulfil necessary goals, considerations of rhythm, balance, suppleness, straightness, impulsion, recognition of a working outline, identification of appropriate aims for specific horses being assessed

Purpose and effect of different schooling methods

Schooling methods used; pole work, school figures and movements, transition work, lateral work, ground work, their purpose, benefits, importance of correct application of the aids, effect of schooling methods. Comparisons between selected schooling methods -pole work, school figures and movements, transition work, lateral work, ground work, how selected schooling methods compliment each other

Factors which may affect or impede the training of a horse

Age of horse, experience, history, previous ailments/injuries, stage of training, experience of rider/trainer, time allowance, facilities

Unit 323 Understand the Principles of Equitation

Notes for guidance

This unit is designed to provide the learner with the ability to consider and apply the theory of equitation when training horses.

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

In Outcome 1, the learner will be required to understand the correct procedures for training horses from the ground. It is anticipated that the outcome will be delivered formally with the use of demonstration used to support learning. Theoretical delivery should be based around the concepts of ground work schooling. Practical demonstrations may include lungeing, long reining and loose schooling. Learners should be encouraged and shown how to work safely with a range of equipment and deal with horses in a way which reduces stress and minimises injury to the learner, horses and others.

In Outcome 2 the learner will gain an understanding of the techniques used for developing a horse's flatwork. There will be a theoretical element of delivery for this outcome which should be supported by the use of visual aids. Visits to competitions and use of visiting speakers are encouraged in the development of learner understanding.

An awareness of British Dressage as a governing body is important. The use of current rule books within the delivery of this outcome is essential in providing an understanding of the required equipment and procedures at competitions.

In Outcome 3, the learner will be required to understand techniques adopted for training horses over fences. There will be a theoretical element of delivery for this outcome. However this should be supported by the use of visual aids which may include jumps, poles and tack in order to provide learners with an understanding of the benefits of grid work and gymnastic jumping.

Visits to competitions and use of visiting speakers are to be encouraged.

In Outcome 4, the learner will develop knowledge of methods used for training horses. This outcome will be delivered formally supported by demonstration with the opportunity to observe horse's working. The delivery of this outcome will be developed through the use of visiting speakers and visits to training yards to observe trainers working with horses and riders. The learner should be provided with the opportunity to assess a horse working on the flat and over fences. A range of schooling methods should be used in order to demonstrate comprehensive schooling techniques. Learners should be shown how to work and deal with the horse in a way which reduces stress and minimises injury to the learner, horses and others.

Learners working towards level 3 are likely to have gained some riding experience with riding and assessing horses on the flat and over fences. This unit aims to extend the learners knowledge by developing an understanding for the use of ground work in training. Emphasis should be placed on practical participation, however it is accepted that some formal delivery will be required to support the tuition. Tutors are encouraged to relate the content of all of the outcomes within training and provide learners with the opportunity to work with a range of horses and equipment which reflects current industry practice.

Centres are encouraged to introduce employers and specific professionals from industry to provide interesting and relevant information.

References

Books

British Horse Society. 2006. *The BHS Manual of Equitation.* Kenilworth Press Ltd. ISBN 1872119335

British Horse Society. 1992. *The Manual of Equitation: Complete Training of Horse and Rider (British Horse Society).* Kenilworth Press Ltd. ISBN 1872082387

Cave M. 2000. *The Course Companion for BHS Stage II*. J.A.Allen & Co Ltd. ISBN 0851318264

Cave M. 1999. *The Course Companion for BHS Stage III*. J.A.Allen & Co Ltd. ISBN 0851316567

Auty I. 2009. *The BHS Complete Training Manual for Stage 2*. Kenilworth Press Ltd. ISBN 1905693283

Auty I and Linington-Payne M. 2008. *The BHS Complete Training Manual for Stage 1.* Kenilworth Press Ltd. ISBN 1905693207

Linington-Payne M. 2008. *The British Horse Society Riding Manual.* Barron's Educational Series. ISBN 0764161124

McBane S. 1998. *Horse Care and Riding: A Thinking Approach*. David & Charles PLC. ISBN 0715302200

Unit 324 Business Management in the Land-based Sector

Level: 3

Credit value: 10

Unit aim

The learner will look at the business, the role and responsibilities of those employed in land-based businesses and resource requirements. They will develop their skills in business operations and produce a business plan.

Learning outcomes

There are **four** learning outcomes to this unit. The learner will:

1. Know the breadth and importance of an industry in the environmental and 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

Guided learning hours

It is recommended that **60** hours should be allocated for this unit. This may be on a full-time or part-time basis.

Details of the relationship between the unit and relevant national occupational standards

n/a

Endorsement of the unit by a sector or other appropriate body

This unit is endorsed by Lantra SSC.

Assessment and grading

This unit will be assessed by:

- An assignment covering practical skills and underpinning knowledge

Unit 324 Business Management in the Land-based Sector

Outcome 1 Know the breadth and importance of an industry in the environmental and land-based sector

Assessment Criteria

The learner can:

1. Describe the **importance** of businesses within the industry **to the economy**
2. Outline the range of **associated businesses** allied to the industry

Unit content

Importance to the economy

Using measures available to the industry, e.g. 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 (e.g. representative, regulatory, not-for-profit) within the sector, regional variations, changes and developments in the last 50 years

Associated businesses

Relevant industries in primary, secondary and tertiary industrial sectors (e.g. suppliers of raw materials, processors, distributors, retailers, service providers)

Associated organisations: specific interrelationships between one business and other associated organisations e.g. suppliers of goods and services, representative organisations and professional bodies, regulatory bodies, competitors, customers, aims and roles of important organisations in the sector

Unit 324 Business Management in the Land-based Sector

Outcome 2 Understand business resources and structures

Assessment Criteria

The learner can:

1. Explain the **legal structure and organisation** of a land-based business
2. Explain the **physical resource requirements** of a selected land-based business
3. Describe different **job roles and responsibilities** in a selected land-based business

Unit content

Legal structure and organisation

Features of the main business types, e.g. sole trader, partnership, limited company, not-for-profit organization, charity, public sector organisations, organization staffing structure

Physical resource requirements

Property (forms of tenure, appraisal of business potential), vehicles and machinery, tools and equipment, stocks (stock control procedures), insurance of physical resources

Job roles and responsibilities

Job roles relevant to the sector, e.g. director, manager, supervisor, team worker, trainee, administrator, volunteer, sub contractor, job title, job description, 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 (e.g. pay, working hours, holidays, equal opportunities, health and safety, employment protection), relevant employment legislation

Unit 324 Business Management in the Land-based Sector

Outcome 3 Understand the business marketplace

Assessment Criteria

The learner can:

1. Describe the **marketplace, customers and competitors** for a land-based business
2. Explain features of an efficient **supply chain** in a land-based context
3. Review **quality management** systems and practices within a land-based business

Unit content

Marketplace, customers and competitors

Size of market (e.g. value of sales, number of customers), external influences on the market (political, economic, socio-cultural, technological), customer base (number, type, characteristics, market segments), direct and indirect competitors, competitor analysis, market share

Supply chain

Suppliers, distributors, customers, choosing suppliers, ensuring supplies of inputs, supply chain assurance (e.g. environmental, animal welfare)

Quality management

Important aspects of quality in the sector, formal quality standards or approval (e.g. Farm Assured, ISO 9000, BHS approval), informal systems and practices to achieve quality, problems arising if quality is not achieved

Unit 324 Business Management in the Land-based Sector

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

Assessment Criteria

The learner can:

1. Review **financial records** for a selected land-based business
2. Examine **physical records** for a selected land-based business
3. Examine the use of financial and physical records in **monitoring business performance and progress**

Unit content

Financial records

Importance of keeping accurate records (legal requirements and management efficiency), purchasing and ordering procedures, order forms and orders, deliveries and receipts, invoices and sales records, credit control, payment methods, bookkeeping (cash analysis, petty cash, cash flow, budgets, computer accounts programmes), basic accounts (trading account, balance sheet, depreciation), taxation (VAT, income tax PAYE, national insurance contributions, corporation tax), wage calculation

Physical records

Records appropriate to the industry relating to e.g. production, inputs, staffing, customers, resource use, data protection, legal requirements to keep records, e.g. pesticide use, veterinary medicines, transport, animal movement, passports

Monitor business performance and progress

Use of financial and physical records to monitor business performance, e.g. production levels, costs of production, financial efficiency, monitoring against targets, budgets, previous periods, relevant review periods (e.g. weekly, monthly, annually), appropriate remedial actions, staff roles in recording and analysing information

Unit 324 Business Management in the Land-based Sector

Notes for guidance

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.

In Outcome 1 they 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. For some sectors this type of information is more readily available than other (e.g. agriculture), so learners should be supported in accessing whatever information is available relevant to their sector. 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. This outcome is likely to require formal teaching, which should be supported by relevant information on businesses and organisations within the sector, and could include speakers representing these. Independent study and investigation should also be encouraged.

Outcome 2 focuses on the legal and resource implications of constituting a business. They 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. It would be appropriate for learners to undertake a case study on a business premises in their sector and appraise its strengths and weaknesses for a given business use. The understanding that learners will gain on job roles and responsibilities has links with the requirements for Work Experience, and employers could be invited to explain their expectations in the workplace. The learners' investigations should focus on job roles within their specialist sector.

In Outcome 3 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. This should be related to specific businesses and teaching could again be supported by relevant visiting speakers from industry.

Outcome 4 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 need to be able to complete simple examples of the range of financial records listed. 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. This content could link with other specialist vocational units. 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.

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.

References

Books

Gillespie A. 2002. *Business in Action*. Hodder Arnold.
Jones R, Raffo C and Hall D. 2004. *Business Studies, 3rd Edition.* Causeway Press.
Nix J. 2009 *Farm Management Pocketbook*, 40th Revised edition. The Anderson Centre.
Warren M. 1997. *Financial Management for Farmers and Rural Managers*. Blackwell.
Lewis R & Trevitt, R. 2007. *BTEC National Business*. Nelson Thornes.
Dooley D, Dransfield R, Goymer J & Guy P. 2007. *BTEC National Business*. Heinemann.

Unit 325 Undertake an Investigative Project in the Land-based Sector

Level: 3

Credit value: 10

Unit aim

This unit aims to provide learners with an understanding of the principles of undertaking an investigative project and how this 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 develop project knowledge and skills by investigating a chosen topic area through a project. They will explore topic areas that interest them and select one topic for their investigative project. They will plan and carry out their investigative project working to meet deadlines and monitoring performance. The learner will prepare an evaluative report looking at how the project performed, if the schedule plan met the project aims and objectives and how improvements could be made in the future.

Learning outcomes

There are **four** learning outcomes to this unit. The learner will:

1. Be able to identify and research a suitable topic for an investigative project in the environmental and land-based sector
2. Be able to plan for an investigative project in the environmental and land-based sector
3. Be able to carry out an investigative project in the environmental and land-based sector
4. Be able to report on an investigative project in the environmental and land-based sector

Guided learning hours

It is recommended that **60** hours should be allocated for this unit. This may be on a full-time or part-time basis.

Details of the relationship between the unit and relevant national occupational standards

n/a

Endorsement of the unit by a sector or other appropriate body

This unit is endorsed by Lantra SSC.

Assessment and grading

This unit will be assessed by:

- An assignment covering practical skills and underpinning knowledge

Unit 325 Undertake an Investigative Project in the Land-based Sector

Outcome 1 Be able to identify and research a suitable topic for an investigative project in the environmental and land-based sector

Assessment Criteria

The learner can:

1. List **information sources** relevant to the topic to be researched
2. Carry out **research** into potential topics
3. **Select and describe** a relevant investigative project topic in the environmental and land-based sector
4. **Prepare a proposal** for an investigative project

Range

The topics for the investigative project should reflect both learner interest and the qualification undertaken.

Unit content

Information sources

For example textbooks, journals, magazines, internet, trade literature, television and radio, subject experts, validity and reliability

Research

Methods appropriate to the project, e.g. literature review, trials, experiments, practical activities, questionnaires, interviews, surveys

Select and describe

Suitable project topic (e.g. trial or experiment, investigation of an issue important to the sector, preparation of a plan, production of a structure or artefact, training programme, preparation for and participation in a competition, improving a process, investigation of a new product or service). Justify the selection of the project topic in relation to e.g. programme of study, interests and experience, future employment ambitions, comparison with alternative topics

Prepare a proposal

Title, aims/ objectives, methodology, information sources, resources (e.g. people, computers, materials, etc. required for completion of the project), justification of proposed project

Unit 325 Undertake an Investigative Project in the Land-based Sector

Outcome 2 Be able to plan for an investigative project in the environmental and land-based sector

Assessment Criteria

The learner can:

1. **Plan operations and resources** required to carry out a selected investigative project in the environmental and land-based sector
2. Explain the **reasons** for resources selected

Range

The topics for the investigative project should reflect both learner interest and the qualification undertaken.

Unit content

Plan operations

Project planning techniques (e.g. critical path analysis, Gantt charts), sequencing of activities, working to deadlines, allowing for other commitments, project action plan: aims, objectives, specific operations / tasks, start and completion dates, time required, resources required, possible disruptions to plan (e.g. illness, other commitments, resource problems, IT problems, research problems, lack of cooperation, cost), contingencies and remedial actions

Resources

People, time, buildings, equipment, animals, materials, literature and media (internet, trade magazine), IT applications and budget

Reasons

Suitability, availability and cost

Unit 325 Undertake an Investigative Project in the Land-based Sector

Outcome 3 Be able to carry out an investigative project in the environmental and land-based sector

Assessment Criteria

The learner can:

1. **Carry out a selected investigative project** in the environmental and land-based sector
2. **Monitor progress**, working to **deadlines**
3. Discuss the **health and safety implications** of the investigative project

Range

The topics for the investigative project should reflect both learner interest and the qualification undertaken.

Unit content

Carry out a selected investigative project

Suitable project as proposed in outcome 1(trial or experiment, investigation of an issue important to the sector, preparation of a plan, production of a structure or artefact, training programme, preparation for and participation in a competition, improving a process, investigation of a new product or service). Implementation (set up, start), operations (tasks, duties), evidence of actions e.g. literature review, artefacts, plans, presentations, witness statements, photographs or videos

Monitor progress

Diary or log of actions, monitoring of performance against schedule plan e.g. daily, weekly, monthly progress, budget, other appropriate measures for each resource or task, reasons and remedial actions if falling behind schedule

Deadlines

Interim, key mileposts, final, all to be reviewed at regular intervals by tutor

Health and safety implications

Health and safety, risk assessment, Personal Protective Equipment (PPE), relevant regulations and legislation, animal welfare, codes of practice

Unit 325 Undertake an Investigative Project in the Land-based Sector

Outcome 4 Be able to report on an investigative project in the environmental and land-based sector

Assessment Criteria

The learner can:

1. **Report** on a selected investigative project in the environmental and land-based sector
2. **Evaluate achievements and areas for improvement** of a selected investigative project

Range

The topics for the investigative project should reflect both learner interest and the qualification undertaken

Unit content

Report

Report on the project selected and completed in outcomes 1-3. Written report format, oral report presentation, title, aims/objectives, review of existing literature/information, methodology, results/findings (with appropriate evidence, e.g. charts and graphs, diagrams, photographs), conclusions, Harvard referencing

Evaluate achievements

Conduct and management of the project, action plan, keeping to deadlines, problems and remedial actions, project results/findings, strengths and weaknesses

Areas for improvement

Planning, implementation, methodology, results/findings, report, topics for further investigation

Unit 325 Undertake an Investigative Project in the Land-based Sector

Notes for guidance

This unit is designed to encourage and develop independent research skills in learners provides valuable skills development for all level 3 learners and especially those looking to progress onto Higher Education. The concept of the project is applicable across all of the vocational areas in the environmental and land-based sector, and learners should be guided and encouraged to select a project topic that is particularly relevant to their interests. This could integrate with other units in their programme of study. The emphasis of the unit should be on project management and working to deadlines, as well as producing a meaningful investigative project. Much of the work will be carried out independently by learners but they must have access to appropriate tutor guidance and support.

In Outcome 1, learners will need to identify a suitable topic for their investigative project. This should be relevant to their programme of study and have a particular interest for them, for example in relation to a special area of interest, experience or future employment of study ambitions. Ideal project topics could have a practical or theoretical focus, but all projects should include potential for research into existing literature and information sources as well as a practical investigation or application, so should be chosen in agreement with the tutor. Learners are likely to need guidance on suitable project topics and tutor support to ensure that selected topics are achievable in the timescale and with the resources available. The proposal should outline the aims and objectives, information sources, resource requirements, and the methodology by which the learner intends to complete the project, as well as their justification for topic selection. If appropriate to the investigation, a hypothesis should be included as part of the methodology.

In Outcome 2, learners will need to complete a detailed action plan for completion of the investigative project within the set timescale. This should include, as a minimum:

- a detailed breakdown of all actions from starting the project up to submission of the completed project report
- resources required at each stage (and reasons for their selection)
- time expected for completion and interim target completion dates.

They should also consider possible setbacks to their planned schedule and contingency plans to ensure timely completion of the project. Learners are likely to require guidance on project planning techniques and how to compile an appropriately detailed action plan. They could be provided with a suitable template.

In Outcome 3, learners will conduct and complete their investigative project, collecting supporting evidence as appropriate, for example literature review, artefacts, witness statements, photographs or videos, etc. Whilst doing this, they should maintain a log or diary of all actions, and regularly monitor their progress against their action plan. It would be appropriate for tutors to conduct progress reviews at key stages of the project. As part of conducting the project, learners should discuss any health and safety implications of their work to humans and, if appropriate, animals, and identify any relevant legislation or codes of practice. Risk assessments may contribute to evidence of this.

In Outcome 4, learners will produce a summary report of their project and the process of its completion. This should cover, as a minimum:

- title
- aims / objectives
- review of existing literature / information
- methodology
- results / findings
- conclusions
- references

All referencing should comply with academic conventions, and learners should be given appropriate guidance on this.

The project evaluation should consider the strengths and weaknesses of the finished project and the process of its completion, the usefulness and importance of project planning, and ways in which the project could have been improved.

Some parts of the project report could be presented orally rather than in written report format.

References

Books

Applegarth, M. 1998. *The Project Management Pocketbook*. Alresford: Management Pocketbooks.

Nokes, S., Kelly, S. 2007. *The Definitive Guide to Project Management: The Fast Track to Getting the Job Done on Time and on Budget.* 2nd ed. Harlow: Financial Times Prentice Hall.

Portney, S.E. 2001. *Project Management for Dummies*. Sussex: Wiley Publishing.

Unit 326 Undertake Estate Skills

Level: 3

Credit value: 10

Unit aim

This unit aims to introduce learners to the 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 using 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

There are **four** learning outcomes to this unit. The learner will:

1. Be able to construct, repair or maintain boundaries
2. Be able to construct, repair or maintain structures
3. Be able to construct, repair or maintain surfaces
4. Be able to carry out practical habitat management work

Guided learning hours

It is recommended that **60** hours should be allocated for this unit. This may be on a full-time or part-time basis.

Details of the relationship between the unit and relevant national occupational standards

CU22.1 Construct maintain and repair boundaries
CU20.1 Maintain structures and surfaces

Endorsement of the unit by a sector or other appropriate body

This unit is endorsed by Lantra SCC

Assessment and grading

This unit will be assessed by:

- An assignment covering practical skills and underpinning knowledge

Unit 326 Undertake Estate Skills

Outcome 1 Be able to construct, repair or maintain boundaries

Assessment Criteria

The learner can:

1. **Prepare the site** appropriately
2. Select appropriate **equipment and materials**
3. Carry out the **construction, repair or maintenance** of selected **boundaries** to meet given specifications

Range

Boundaries

Living boundaries (hedge, bank, ditch), constructed boundaries: fence (post and rail, post and wire, electric, netting), wall (stone, brick)

Unit content

Prepare the site

Plan activity, clear debris, ensure livestock safety, location (power supply, waste disposal, equipment and materials storage)

Equipment and materials

Materials selected relevant to task, health and safety, sustainable practice, cost implications

Construction, repair or maintenance

Undertaken safely (use of risk assessment, appropriate Personal Protective Equipment (PPE)) and to the required standards

Unit 326 Undertake Estate Skills

Outcome 2 Be able to construct, repair or maintain structures

Assessment Criteria

The learner can:

1. **Prepare the structure** appropriately
2. Prepare and ready appropriate **equipment and materials**
3. Carry out the **construction, repair or maintenance** of selected **structures** to meet given specifications.

Range

Structures

Wooden structures (gate, stile, horse jump, bird box, table, bench, door), other structures requiring repair or maintenance (animal house or pen, machinery or feed store)

Unit content

Prepare the structure

Cut required sizes, wood preparation (sanding, planing, filling), check design specification, plan activity

Equipment and materials

Equipment and materials prepared based on manufacturer instructions, health and safety, sustainable practice, cost implications

Construction, repair or maintenance

Undertaken safely (use of risk assessment, appropriate Personal Protective Equipment (PPE)) and to the required standards

Unit 326 Undertake Estate Skills

Outcome 3 Be able to construct, repair or maintain surfaces

Assessment Criteria

The learner can:

1. **Prepare the surface** appropriately
2. Prepare and ready appropriate **equipment and materials**
3. Carry out the **construction, repair or maintenance** of a selected **surface** to meet given specifications

Range

Surface

Solid (decking, concrete, paving), loose (gravel, wood chippings, sand)

Unit content

Prepare the surface

Plan activity, clear debris, ensure livestock safety, location (power supply, waste disposal, equipment and materials storage)

Equipment and materials

Equipment and materials prepared based on manufacturer guidelines, health and safety, sustainable practice, cost implications, timeliness for example preparing concrete at the right time for construction

Construction, repair or maintenance

Undertaken safely (use of risk assessment, appropriate Personal Protective Equipment (PPE)) and to the required standards

Unit 326 Undertake Estate Skills

Outcome 4 Be able to carry out practical habitat management work

Assessment Criteria

The learner can:

1. Carry out appropriate **risk assessments**
2. Safely carry out appropriate **practical habitat management** to given specifications
3. Recommend **improvements** for future work

Unit content

Risk assessments

Risk assessments completed and used, use of Personal Protective Equipment (PPE) appropriate to the tasks (safety boots, overalls, gloves, and eye protection), and safe methods of working
Relevant legislation and codes of practice: Health and Safety at Work etc Act 1974, Control of Substances Hazardous to Health (COSHH) 2002, Waste Management (England and Wales) Regulations 2006, Construction (Design and Management) Regulations 2007

Practical habitat management

Mowing, renovation, planting and staking as applicable, clearing (path, fence line), coppicing, uprooting, hedge maintenance, pruning, thinning, cutting or mowing and mulching, pond, stream and ditch clearance
Good practice: composting, materials that can be composted, re-used and/or recycled, finding alternative uses, methods of recycling, avoid wastage
Reduce environmental damage - Pollution (water courses, through litter or debris, noise), damage to habitats, and wastage of resources
Disposal of waste: organic waste (recycling, composting, chipping, burning), inorganic waste (recycling, landfill, discarding safely)

Improvements

Setting habitat management objectives, planning activities and resources, monitoring activities and resources, reviewing outcomes against objectives, recommendations and improvements

Unit 326 Undertake Estate Skills

Notes for guidance

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.

In Outcome 1, learners will develop the practical skills needed to construct, repair or maintain at least two different boundaries, including a living boundary and a constructed one.

In Outcome 2, learners will construct, repair or maintain at least two different structures. It is anticipated that learners will develop an understanding of how to construct a wooden structure, but are not expected to be able to construct larger structures such as animal or machinery housing. It is anticipated that delivery will include repair and maintenance of such larger structures as would be found in an estate setting.

In Outcome 3, learners are required to construct, repair or maintain one surface from the range shown. Delivery may include visits to see a range of surfaces and their properties and maintenance requirements.

In Outcome 4 it is anticipated that delivery of this outcome will be embedded in the practical skills development within the other three outcomes. These outcomes could also be developed in conjunction with learners' work experience at an appropriate placement.

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.

References

Books

Agate E. 2001. *Fencing: A Practical Handbook*. BTCV. ISBN 094675229X
Agate E. 2001. *Footpaths: A Practical Handbook*. BTCV. ISBN 0946752311
Agate E. 2000. *Toolcare: A Maintenance and Workshop Manual*. BTCV. ISBN 0946752249
Agate E. 2001. *Tree Planting and Aftercare: A Practical Handbook*. BTCV. ISBN 0946752257
Agate E. 2002. *Woodlands: A Practical Handbook*. BTCV. ISBN 0946752338
Brooks A and Agate E. 1998. *Hedging: A Practical Handbook*. BTCV. ISBN 0946752176
Brooks A and Agate E. 2001. *Waterways and Wetlands: A Practical Handbook*. BTCV. ISBN 0946752303
Brooks A, Adcock S and Agate E. 1999. *Dry Stone Walling: A Practical Handbook*. BTCV. ISBN 0946752192
MacLean M. 1992. *New Hedges for the Countryside. Farming Press Books and Videos*. ISBN 0852362420
Scottish Executive Rural Affairs Department. 2002. *Prevention of Environmental Pollution from Agricultural Activity: Code of Good Practice Dos and Don'ts Guide*. Scottish Executive. ISBN 0755905180
Stokes A. 1999. *Health and Safety Overview for Practical Conservation Project: A Guide to Good Practice for Conservation Groups and Land Managers*. BTCV.

Journals

Ecology
Environmental Management
Farmers Guardian
Farmers Weekly
Landwards
Organic Farming

Websites

www.btcv.org.uk	British Trust for Conservation Volunteers
www.defra.gov.uk	Department for Environment, Food and Rural Affairs
www.wales.gov.uk	Welsh Assembly Government
www.scotland.gov.uk Department	Scottish Executive Environment and Rural Affairs
www.dardni.gov.uk (Northern Ireland)	Department of Agriculture and Rural Affairs
www.fwag.org.uk	Farm Wildlife and Advisory Group
www.hse.gov.uk	Health and Safety Executive
www.lantra.co.uk	Lantra Sector Skills Council

Unit 327 Undertake Retail Merchandising for the Land-based Sector

Level: 3

Credit value: 10

Unit aim

This unit aims to provide learners with an understanding of the principles of retail merchandising in the land-based sector 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. This unit has been specifically developed for 14-19 year old learners in full-time education acquiring additional knowledge of retailing.

The learner will develop their customer service skills. The learner will understand how items are effectively displayed, along with how they are promoted and marketed. They will consider the principles of stock control and storage.

Learning outcomes

There are **four** learning outcomes to this unit. The learner will:

1. Be able to deliver effective customer service
2. Understand how to display items for sale
3. Understand methods of promotion and marketing
4. Understand the principles of ordering, pricing and controlling retail stock

Guided learning hours

It is recommended that **60** hours should be allocated for this unit. This may be on a full-time or part-time basis.

Details of the relationship between the unit and relevant national occupational standards

n/a

Endorsement of the unit by a sector or other appropriate body

Skillsmart Retail has approved this unit to be used within Edexcel BTEC and City & Guilds qualifications only

Assessment and grading

This unit will be assessed by:

- An assignment covering practical skills and underpinning knowledge

Unit 327 Unit 327 Undertake Retail Merchandising for the Land-based Sector

Outcome 1 Be able to deliver effective customer service

Assessment Criteria

The learner can:

1. Review the needs of different **customer groups**
2. Demonstrate effective **customer service skills**
3. Evaluate **customer service** in a given land-based outlet

Unit content

Customer groups

Individuals, businesses, customer classification – e.g. age, sex, socio-economic group

Customer service skills

Effective communication (e.g. addressing customers face to face, appropriate telephone manner, effective written communication), courtesy, appropriate dress and body language, helpfulness, product knowledge

Customer service

Customer expectations, service standards, approach to customers, policies (e.g. refunds, complaints), after sales service, advice and assistance, compliance with Data Protection Act 1998

Unit 327 Undertake Retail Merchandising for the Land-based Sector

Outcome 2 Understand how to display items for sale

Assessment Criteria

The learner can:

1. Analyse the **customer flow** and **space layout** of a given land-based outlet
2. Evaluate **display systems**
3. Discuss the influence of **legislation** on goods displayed

Unit content

Customer flow

Direction of customer movements, clarity of store layout aiding customer flow, e.g. store plans, signage location and clarity, location of promotional offers

Space layout

Store design and plan including position of entrance and exit, location of tills, aisle widths, access for customers including those with disabilities

Display systems

Product groupings (e.g. by category of product, by species, according to perishability, seasonality, special promotions) types of display, location of displays

Legislation

Relevant legislation e.g. Sale of Goods Act 1968 (as amended 1979 & 1994), Trades Description Act 1968, Weights and Measures Act 1985, Consumer Protection Act 1987 (as amended 1994), Price Marking Order 2004

Unit 327 Undertake Retail Merchandising for the Land-based Sector

Outcome 3 Understand methods of promotion and marketing

Assessment Criteria

The learner can:

1. Compare **methods of promotion**
2. Evaluate **marketing strategies** for given land-based outlets
3. Recommend **improvements** to a given marketing strategy

Unit content

Methods of promotion

Advertising in different media, (e.g. radio, newspaper, internet, television), public relations and sponsorship, special offers and discounts, direct mailing

Marketing strategies

Strategies relating to the product (e.g. product design, product range, packaging), price, promotion (e.g. advertising, Public Relations and sponsorship, special offers and discounts, direct mailing), place (e.g. location, transportation, home delivery)

Improvements

Recommendations to support a given objective, e.g. increase market share, increase sales, increase customer base

Unit 327 Undertake Retail Merchandising for the Land-based Sector

Outcome 4 Understand the principles of ordering, pricing and controlling retail stock

Assessment Criteria

The learner can:

1. Explain **buying** and ordering processes
2. Evaluate **stock control** and **storage methods**
3. Review **pricing methods**

Unit content

Buying

Methods of payment, credit arrangements, methods of ordering, documentation, locating suppliers, stock delivery

Stock control

Stock rotation, planning to meet demand, monitoring stock

Storage methods

Perishable and non perishable items, security, storage of animal health products, minimising wastage, compliance with relevant legislation and guidelines, e.g. Veterinary Medicines Regulations 2009, DEFRA Code of Practice for Suitably Qualified Persons and Guidance for the Registration of Retail Premises 2008, Pet Animals Act 1951 (as amended in 1983)

Pricing methods

Cost based, competitor based and offers and discounts

Unit 327 Undertake Retail Merchandising for the Land-based Sector

Notes for guidance

This unit is designed to provide learners with an understanding of the important skills for those working in and managing land-based retail outlets. Centres are encouraged to find a selection of appropriate outlets which could be used for comparison and case study material. Examples may include pet shops, farm retail shops, equine suppliers and shops selling pet care products, but could equally include other outlets such as a shop within a zoo, cattery or animal health charity.

As learners will be visiting other businesses and organisations, there should be an emphasis on safe working practices and appropriate risk assessments should be undertaken.

In Outcome 1, the focus is on customer service skills. It is anticipated that delivery of this unit will be through a mix of formal lectures, visits to appropriate outlets, and the opportunity to practise customer service skills in a real or simulated situation. Work placement in an appropriate setting would also help learners to develop effective customer service skills. It will be important to explore the potential impact of good and poor customer service on the business's current and future customers, and thus on the success of the business.

In Outcome 2, after appropriate classroom based activity, the learner will need access to land-based retail outlets to enable them to carry out the required analysis and evaluation of customer flow, space layout and display systems. It may be helpful to visit a larger outlet, possibly one that is part of a national chain, and a smaller independently owned one for comparison and to stimulate debate about the key factors. The study of relevant legislation may be assisted by considering case study examples of where this has been breached and the consequences of this to the business.

Outcome 3 requires learners to review promotional methods and marketing strategies for a selected land-based outlet. This could be the same outlet or a different one to those studied for outcomes 1 and 2. It may be helpful to study a larger outlet where there is often more evidence of formal strategies. The evaluation of and recommendation of improvements to, a marketing strategy should be carried out in the context of a specific business objective.

Outcome 4 could be delivered through more formal classroom based activity but it would be beneficial if this is supplemented with real work examples, through visits or guest speakers. It is important that learners develop an understanding of the different storage, legislative and security considerations for the varied types of stock which may be sold through a land-based outlet. Specific examples that are of relevance include animal health products, feedstuffs and in the case of a pet shop, live animals. This outcome also looks at buying, ordering and pricing methods and case study material would be useful to explore an appropriate range of methods.

At level 3 learners will have significant experience as customers of retail outlets. This perspective and experience will be helpful in developing their understanding of customer service and marketing methods in the land-based sector. It will be important that teaching and delivery focuses on the application of knowledge and skills to outlets in the land-based sector that are as relevant as possible to learners' interests.

References

Books

Leland, K., Bailey, A. 2006. *Customer Service for Dummies*. Sussex: Wiley Publishing.

Bradley, S., Hebron, L and Woods, A. 2001. *S/NVQ 3 Customer Service Candidate Handbook.* Oxford: Butterworth Heinemann.

Ferrel, O.C. et al. 2005. *Marketing: Concepts and Strategies.* 5th ed. Geneva: Houghton Mifflin.

Hall, D. et al. 2008. *Business studies.* 4th ed. St Albans: Causeway Press Ltd.

Needham, D., Dransfield, R. 1994. *Business Studies Second Edition. 2nd ed.* Cheltenham: Nelson Thornes.

Websites:

www.bized.co.uk	Business education website
www.businesslink.gov.uk	Business Link website
www.marketingteacher.com	Marketing resources
www.thetimes100.co.uk	Case study materials and resources

Unit 328 Undertake Equestrian Teaching

Level: 3

Credit value: 10

Unit aim

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

The unit provides learners with the skills necessary to apply basic principles of equitation and stable management in a teaching context. The learner will develop the skills to include clarity of communication and confidence with dealing with a range of learning needs. The unit enhances understanding of equitation and stable management techniques. Learners will develop their teaching ability by conducting riding lessons on the flat and over ground poles plus a lead rein and lunge lesson and deliver a short lecture.

Learning outcomes

There are **four** learning outcomes to this unit. The learner will:

1. Be able to prepare lesson plans
2. Be able to teach and evaluate a riding lesson
3. Be able to teach and evaluate a lead-rein and lunge lesson
4. Be able to deliver a short lecture

Guided learning hours

It is recommended that **60** hours should be allocated for this unit. This may be on a full-time or part-time basis.

Details of the relationship between the unit and relevant national occupational standards

322 Prepare for coaching sessions
323 Conduct coaching sessions

Endorsement of the unit by a sector or other appropriate body

This unit is endorsed by Lantra SSC

Assessment and grading

This unit will be assessed by:

- An assignment covering practical skills and underpinning knowledge.

Unit 328 Undertake Equestrian Teaching

Outcome 1 Be able to prepare lesson plans

Assessment Criteria

The learner can:

1. Use an appropriate format for a **lesson plan**
2. Plan the **content and structure of a lesson** appropriate to the needs of the learner
3. **Select equipment and resources** for the lesson
4. Ensure appropriate use of **assessment**

Unit content

Lesson plan

Devising a format for a lesson plan, requirement of a lesson plan, the reason for lesson planning, time, duration, subject, the meaning and structure of aims and objectives, recording and using different learning styles

Content and structure of a lesson

Time, duration, subject, learners, resources, aims, objectives, subject content

Select equipment and resources

The use of: horses, facilities, board, overhead projector (OHP), power point, jumps, poles, school, layout of area, classroom or school

Assessment

Why assessment should be an important aspect of measuring progress and stimulating development, different uses of assessment, how assessment is recorded

Unit 328 Undertake Equestrian Teaching

Outcome 2 Be able to teach and evaluate a riding lesson

Assessment Criteria

The learner can:

1. Teach and evaluate **a group lesson on the flat**
2. Teach and evaluate **an individual lesson on the flat**
3. Teach and evaluate **a lesson over fences**
4. Investigate **First Aid procedures used in the event of an accident**

Unit content

A group and individual lesson on the flat and a lesson over fences

Matching riders to horses, the right equipment is used for the purpose of the lesson, structure of a lesson, getting riders into the arena, checking safety and tack, assessment of riders ability, initial organisation of riders, working the riders in, subject content, rider participation, exercises used to develop the subject delivery, picking up the needs of individual riders while meeting the needs of a group, finishing a session, ensuring effective participation, making a session inclusive for those taking part

Basic subject delivery of flat lessons should include: basic safety when teaching group and individual lessons, rules of the school, mounting and dismounting, checking tack when mounted, riding position, aids, the paces, transitions, canter on the correct leg, diagonals, school movements, turns and circles, how the horse should go

Subject content to be included when teaching over ground poles should include: the use of poles, how many and when, the use of a placing pole, the use of single poles on the ground, the use of multiple poles, distances between poles, poles used as an introduction to jumping, the jumping and forward position, different phases of jumping, pace and approach to poles for both trot and canter

First Aid procedures used in the event of an accident

What to do in the event of an emergency, assessment of situation, ensuring the area is safe, assessing the patient and providing first aid care, airway, breathing, comfort, calling for help, removing horses

Unit 328 Undertake Equestrian Teaching

Outcome 3 Be able to teach and evaluate a lead-rein and lunge lesson

Assessment Criteria

The learner can:

1. **Teach** and evaluate **a lead rein lesson**
2. Teach and evaluate a **lunge** lesson

Unit content

Teach a lead rein and lunge lesson

Matching rider to a horse, the right equipment is used for the purpose of the lesson, the aims and expected outcomes of lead rein and lunge lessons, structure of a lesson, getting riders into the arena, checking safety and tack, assessment of riders ability, initial organisation of the session, loosening up the rider as required, subject content, rider participation, exercises used to develop the subject delivery, picking up the needs of an individual rider, finishing a session, ensuring effective participation

Subject content for teaching lead rein and lunge lessons should include: preparation for the session, tack and safety, mounting and dismounting, the purpose of lead rein and lunge lessons, riding position, basic control, stopping, starting and steering

Unit 328 Undertake Equestrian Teaching

Outcome 4 Be able to deliver a short lecture

Assessment Criteria

The learner can:

1. **Prepare a short lecture**
2. **Prepare equipment and props to deliver a short lecture**
3. **Deliver a short lecture to a group of people**

Unit content

Prepare a short lecture

Lecture plan, consideration of the level of the lecture, participants, aims, objectives, timing and time of delivery, subject content

Prepare equipment and props to deliver a short lecture

The use of equipment and props, why use equipment and props, props and resources to aid delivery, for example when teaching grooming using a grooming kit, the use of OHP, power point, interactive boards, the use of questions and answer, learner participation

Deliver a short lecture to a group of people

Taking account of the group, age range, experience and needs, the use of voice and resource props, location, room size, comfort and warmth

Subject content for lectures should be based around The National Occupational Standards level 2 and may include horse and stable management, riding and exercising horses, subjects relevant to the care and welfare of horses and health and safety

Unit 328 Undertake Equestrian Teaching

Notes for guidance

This unit is designed to provide the learner with an introduction to equestrian teaching. The unit does not qualify an individual to teach however it does provide a sound basis of equine teaching and practice from which to develop the skills required to become a coach.

It is essential that learners develop knowledge and skills through participation in organised teaching practice sessions. Throughout the unit the emphasis should be on safe working. It is expected that learners will be aware of safe working practices and accepted behaviour within the context in which they are working.

In Outcome 1, the learner will be required to develop an understanding of lesson planning, the purpose of planning and the use of documentation in the recording and development process. It is accepted that some formal input will be required in the delivery of this outcome. However, it is recommended that an integrated approach to all outcomes is essential for the success of this unit. Learners will be expected to use lesson plans formulated within this outcome for sessions delivered in outcomes 2, 3 and 4.

In Outcomes 2 and 3 the learner will be expected to participate in a range of stage managed teaching sessions. Although it is expected that a formal approach to teaching will be required learners should be provided with opportunity to work within a practical instructional environment.

Learners should be encouraged to observe instructors and coaches at work in a variety of situations which include both flat and jumping sessions as well as individual sessions on the lunge and lead rein. They should also be encouraged to assess the needs of riders and to consider approaches to develop rider skills. Emphasis should continually be placed on safe working practice where demands on pupils match what can be achieved on horses they can ride safely.

In Outcome 4 the learner will be expected to participate in a range of stage managed lecture sessions. Although it is expected that a formal approach to teaching will be required learners should be provided with opportunity to work within a practical lecture environment.

Learners should be encouraged to observe lecture sessions both practical and theoretical. Emphasis should continually be placed on safe working practice within all delivered lecture sessions.

Learners working toward level 3 are likely to have some experience of riding and dealing with others in riding and practical situations. They should have some awareness and developed a responsibility for their own safety and the safety of others and horses within their charge. The unit aims to extend the learners knowledge and practical experience of working safely within a training environment.

References

Books

Cave, M. 1997. *The Course Companion for the BHS Preliminary Teaching Test*. JA Allen.
Houghton-Brown J. 1995. *Coaching The Rider*. WileyBlackwell.
Houghton-Brown J. 1997. *Teaching Jumping.* WileyBlackwell.
Mortimer M. 1981. *The Riding Instructors Handbook.* David and Charles.

Unit 329 Contribute to Managing an Equine Event

Level: 3

Credit value: 10

Unit aim

This unit aims to provide learners with an understanding of how to contribute to managing an equine event 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.

It aims to provide learners with an understanding of the principles of organising and running an equine event and how this can be applied in practice. The learner will also be able to contribute towards the planning, running and evaluation of an equine event.

Learning outcomes

There are **four** learning outcomes to this unit. The learner will:

1. Know the Regulatory Framework relevant to equine event management
2. Be able to apply business skills to running an equine event
3. Be able to plan and take part in running an equine event
4. Be able to evaluate the success of an equine event

Guided learning hours

It is recommended that **60** hours should be allocated for this unit. This may be on a full-time or part-time basis.

Details of the relationship between the unit and relevant national occupational standards

n/a

Endorsement of the unit by a sector or other appropriate body

This unit is endorsed by Lantra SSC

Assessment and grading

This unit will be assessed by:

- An assignment covering practical skills and underpinning knowledge.

Unit 329 Contribute to Managing an Equine Event

Outcome 1 Know the Regulatory Framework relevant to equine event management

Assessment Criteria

The learner can:

1. Describe the **rules and regulations** of competitions
2. Outline the roles of **Governing Bodies** in competitions
3. Outline the relevant **legislation** to adhere to when running an event

Unit content

Rules and regulations

Relevant rules set by affiliated and other bodies for example British Dressage (BD), British Equestrian Vaulting, British Eventing (BE), British Harness Racing Club (BHRC), British Horse Ball Association, British Horse Driving Trials Association (BHDTA), British Reining, British Showjumping (BSJA), British Show Hack, Cob and Riding Horse Association, British Show Pony Society (BSPS), Endurance GB, Hurlingham Polo Association (HPA), Ponies Association UK, Mounted Games Association, Trec, UK Polocrosse Association (UKPA)

Governing Bodies

British Equestrian Federation (BEF), British Horse Society (BHS), International Federation for Equestrian Sports (FEI), The Pony Club

Legislation

Current legislation and Codes of Practice, for example Health and Safety at Work etc Act 1974, Animal Welfare Act 2006, Horse Passports (England) Regulations 2004, environmental regulations, insurance regulations

Unit 329 Contribute to Managing an Equine Event

Outcome 2 Be able to apply business management skills to running an equine event

Assessment Criteria

The learner can:

1. Contribute to **financial operations** required for a competition
2. Contribute to the **promotion of an event**
3. Produce **promotional material** for an event

Unit content

Financial operations

Budget
Income, (forecast, actual), entry money, sponsorship, trade stands, advertising
Expenditure (forecast, actual), judges expenses and gifts, prizes (rosettes and prize money), hire of toilet facilities, refreshments and hospitality, Public Address system, score sheets, advertising, printing, staffing costs (if applicable)
Profit and loss, reconciliation of projected and actual costs
Petty cash

Promotion of an event

Methods: leaflets, posters, show schedules, magazine, newspaper adverts, newspaper articles, radio, use of affiliated clubs and societies, TV and the Internet

Promotional materials

In house, use of printing firms, use of external agencies, display of materials, distribution of materials, key features and qualities of publicity displays, information to be included - activities, price, date, time, target groups, contact name and telephone number

Unit 329 Contribute to Managing an Equine Event

Outcome 3 Be able to plan and take part in running an equine event

Assessment Criteria

The learner can:

1. Contribute to organising **forward planning activities** for an equine event
2. Contribute to **site and people management** of an equine event
3. Contribute to **managing an equine event**
4. **Report the results** of the equine event as appropriate to the type of competition

Unit content

Forward planning activities

Booking services: volunteers, judges, catering, human and animal first aid

Administration: insurance, allocation of roles before and during an event (show secretary, scorers, runners, ring stewards, arena party, commentator, judges, course builder, car park attendants, health and safety person, catering and hospitality, timekeeper), ordering and booking equipment and materials (for example prizes and rosettes), availability and maintenance of equipment (tools and facilities), competitors' times, contingency arrangements in case of adverse weather conditions

Site and people management

Plan of site, parking considerations, toilet facilities, catering considerations, roped off areas, signage, course building and setting up arenas (including displays), secretaries and scorers facilities, site health and safety, security

Volunteer management and motivation, hospitality for judges and VIPs, care of the public, care of competitors, roles of organisers

Managing an equine event

Allocation of competitors times and numbers, score calculation, display of results, adherence to competition rules, prize giving

Report the results

Report results to appropriate publications and Governing Bodies, posting score sheets/winnings to absent competitors

Unit 329 Contribute to Managing an Equine Event

Outcome 4 Be able to evaluate the success of an equine event

Assessment Criteria

The learner can:

1. Contribute to the **monitoring and evaluation of an equine event**
2. **Display the financial outcome** of an equine event in an appropriate format
3. **Recommend improvements** for future event

Unit content

Monitoring and evaluation of an equine event

Physical records: numbers of public attending, numbers of competitors
Recording of complaints, corrective action taken, dealing with problems
Recording of participants views: methods of collection and evaluation
Adherence to time schedule evaluation
Evaluate how financial resources are allocated and used

Display the financial outcome

Financial records required to account for income and expenditure

Recommend improvements

Reflection on personal performance, providing solutions to problems, learning from experience
Action plan for improvements for future events

Unit 329 Contribute to Managing an Equine Event

Notes for guidance

This unit is designed to develop the learners understanding and skills required towards the successful running of an equine event. It is anticipated that learners will participate in a real equine competition or event run by the centre for outside competitors. This need not be a special event for this unit, but if the centre is running regular competitions, these could be used for the delivery and assessment of the unit.

The event can be any type that the centre offers. It does not need to be an affiliated event, but it must be a credible competition which involves certain rules and results. Throughout the delivery of this unit, health and safety must be emphasised throughout, not only as far as the learners are concerned, but also safety with due regard to the public. The need to improve the practical knowledge and management of equine competitive events has become more important due to the increasing demands of heath and safety regulations and the number of events and competitors taking part.

In Outcome 1, learners will review the rules and legislation that apply to running an event. Learners will explore the various rule books and understand of how to use these in relation to a given discipline. Although the unit content lists numerous affiliated clubs/association, not all of these need to be covered, but there must be some variation in coverage to illustrate different types of rules and regulations that apply. During the practical running of an event learners will know exactly how to access this information and how to apply the rules.

It is anticipated that learners will already have gained some of the required business skills through taking the unit in Business management prior to taking this unit. This unit then builds upon those skills, as an understanding of business management is essential for planning and running an event and this will be covered in Outcome 2. Financial, marketing, promotional and advertising aspects of promoting an event will be studied to ensure that learners gain a thorough understanding of all aspects of event management. When contributing to the actual event, learners will be responsible to undertaking these activities in a practical context.

In Outcome 3 learners will be involved in the actual running of an event. Planning and running an event is physically demanding as it requires energy, commitment and financial planning to ensure that the competitors have a good experience and will come back to future competitions. The practical aspect of running an event will be explored in Outcome 3.

Outcome 4 encourages learners to assess the success of the event they have organised. This is an essential aspect of event management as it informs the organiser of the viability of running this event in the future and how many competitors they will need to break even or make a profit.

This unit could also benefit from visits from outside speakers who are actively involved in running events themselves, so that experiences can be shared in a more stimulating context. Learners could also benefit from visits to events to see for themselves different ideas for various aspects of organising and running an event.

References

Books

Bradwell J. 1988. *Eventing: Preparation, Training and Competition.* The Crowood Press. ISBN 1852230339
Brown J. 2001. *Horse Business Management: Managing a Successful Yard, 3rd Edition*. Blackwell Science. ISBN 0632058269
Eastwood S, Jensen A and Jordon A. 2005. *Business Management for the Equine Industry.* Blackwell Publishing. ISBN 140512606X
Equi Study. 2003. *Accounting in the Horse Industry.* Equi-Study. ISBN 1873587538
Noughton B. 1999. *Equine Business Guide.* Warwickshire College. ISBN 0951095560
British Dressage Group. 2006. *Dressage Rule Book 2006.* British Dressage.
British Eventing. 2006. *British Eventing Rules 2006.* British Horse Society.
British Horse Society. 2006. *The BHS Hunter Trial Rules and Regulations.* The British Horse Society.
British Horse Society. 2006. *TREC Rulebook.* The British Horse Society.
British Show Jumping Association. 2006. *BSJA Rules.* British Show Jumping Association.

Journals

British Dressage journal
British Eventing magazine
BSJA journal
Horse and Hound magazine

Websites

www.bef.co.uk	British Equestrian Federation
www.bhs.org.uk	British Horse Society
www.britishdressage.co.uk	British Dressage
www.britisheventing.co.uk	British Eventing
www.britishshowponysociety.co.uk	British Show Pony Society
www.bsja.co.uk	British Showjumping
www.endurancegb.co.uk	Endurance GB

Unit 330 Fundamentals of Science

Level: 3

Credit value: 10

Unit aim:

The aim of this unit is to enable learners to develop the practical techniques necessary to pursue a potential career in science. Learners will investigate the quantities necessary in chemical reactions, structure and functions of cells, calorific value of different fuels and develop skills in communicating scientific information.

Learning outcomes

There are **four** learning outcomes to this unit. The learner will:

1. Be able to use the necessary skills to measure quantities for chemical reactions
2. Be able to use the correct equipment to identify structures and functions in different cell types
3. Be able to investigate different types of energy and their transfers
4. Be able to communicate scientific information

Guided learning hours

It is recommended that **60** hours should be allocated for this unit. This may be on a full-time or part-time basis.

Details of the relationship between the unit and relevant national occupational standards

n/a

Endorsement of the unit by a sector or other appropriate body

This unit is endorsed by SEMTA.

Assessment and grading

This unit will be assessed by:

- An assignment covering practical skills and underpinning knowledge

Unit 330 Fundamentals of Science

Outcome 1 Be able to use the necessary skills to measure quantities for chemical reactions

Assessment Criteria

The learner can:

1. Outline the key **features** of the periodic table, **atomic structure** and chemical **bonding**
2. Demonstrate practically the ability to **prepare chemical solutions** and **test their accuracy**

Unit content

Features

Metals and non-metals including transition metals, halides, noble gasses, significance of atomic mass, atomic number and changes in group and period

Atomic structure

Elements, mixtures and compounds. Mass and charge of protons, neutrons and electrons and how that structure can derive from the periodic table. Principle of electron shells and how these are filled. Structure and uses of isotopes

Bonding

The formation of ionic, covalent and hydrogen bonds and the relevance of Van de Waals forces. Use of the periodic table to determine the structure of simple ionic and covalent compounds. Balancing chemical equation

Prepare chemical solutions

Difference between precision and accuracy. Handling and measurement of solids and liquids including both weight and volume measurements with an emphasis on safe working practice. Preparation of solutions based upon w/w, w/v and v/v measurements. Serial dilution of solutions and mixing of solutions of different molarities to obtain the required concentrations. Preparation, dilution and mixing of molar solutions. Preparation of acid and alkali solutions, calculation and measurement of pH

Test their accuracy

Measurement of the concentration of solutions by a common industrial assay such as by a titration, colourimetric or spectrophotometic technique

Unit 330 Fundamentals of Science

Outcome 2 Be able to use the correct equipment to identify structures and functions in different cell types

Assessment Criteria

The learner can:

1. Accurately record observations of different **types of tissues** from a light microscope
2. Interpret electron micrographs of different **types of tissues**
3. Describe the key **structures and functions** of a eukaryotic and prokaryotic cell

Range

Cell types: eukaryotic, prokaryotic
Tissue types: epithelial, connective, nervous, muscle

Unit content

Tissue types

Dense, loose, regular, irregular and fluid connective tissues. Simple and stratified epithelial tissues. Skeletal, cardiac and smooth muscle types. Nervous tissue

Structures and functions

Structure and function of cell walls (prokaryotic and eukaryotic), nucleoid, cytosol, flagella, pili, plasmids, cytoskeleton, cell membrane, chloroplasts, centrioles nucleus, rough and smooth endoplasmic reticulum, ribosomes, Golgi apparatus, mitochondria, endosymbiosis theory, peroxisomes and lysosomes

Unit 330 Fundamentals of Science

Outcome 3 Be able to investigate different types of energy and their transfers

Assessment Criteria

The learner can:

1. Describe different types of **energy transfer**
2. Carry out a practical investigation into the calorific value of **different fuels**

Range

Thermodynamics, photosynthesis and cellular respiration in eukaryotes, calorimetric determination

Unit content

Energy transfer

First, second and third laws of thermodynamics. Enthalpy calculation and measurement. Photosynthesis in plant cells and the production of ATP in both animal and plant cells including an outline of glycolysis, citric acid cycle and oxidative phosphorylation. Formation of electrochemical gradients and potential difference across membranes

Different fuels

Calorimetric determination of carbohydrate, lipid based food products and a hydrocarbon fuel fraction and an organic solvent

Unit 330 Fundamentals of Science

Outcome 4 Be able to communicate scientific information

Assessment Criteria

The learner can:

1. Outline the **methods** by which scientific information is communicated
2. Report on a **scientific investigation** that has been carried out

Range

Peer reviewed and non-peer reviewed methods in a range of media

Unit content

Methods

Peer reviewed and non-peer reviewed sources. Journals, books (academic texts, fiction and non-fiction), newspaper and magazine articles, television and radio documentaries and advertising, academic and industry conferences, poster presentation, electronic distribution, websites and educational resources

Scientific investigation

Sourced from published primary sources or from learners own investigation which may be from this unit or another suitable investigation

Unit 330 Fundamentals of Science

Notes for guidance

This unit aims to provide learners with a grounding in a range of both theoretical and practical scientific skills that underpin the life sciences. It is envisaged that although the content of this unit is necessarily general it should, wherever possible, be contextualised to the final qualification being undertaken.

Practical laboratory investigations are an important feature of this unit and as such learners will be aware and familiar with relevant safe working practices before any investigation is undertaken.

Outcome 1 introduces learners to the periodic table and although formal lectures will form an element of delivery this outcome provides an opportunity for learners to practice the skills required in chemical calculations. The practical element enables learners to produce a range of solutions and test their accuracy using methods should be derived from those used in industry or research laboratories. This practical activity also allows learners to gain knowledge about potential chemical hazards such as the preparation and mixing of alkali and acidic solutions. CLEAPSS produce a range of resources that may help in preparing for this element of outcome 1.

Outcome 2 introduces learners to eukaryotic and prokaryotic life including the structure and function of cellular organelles. Electron micrographs provide sufficient magnification for learners to practice the identification of cell organelles. This outcome also allows learners to study the organisation of cells into tissue types and the role of these tissue types in a variety of organs and organ systems. Example slide sets are available from a range of educational suppliers. Although standard light microscopy is sufficient some tissue types may benefit from examination under oil immersion microscopy. If possible learners should be given the opportunity to measure cells using an eye piece graticule.

In Outcome 3, learners will gain a working knowledge of energy transfer and the laws of thermodynamics which should be contextualised to animal examples. However physical examples may help learner grasp concepts before being applied to biological systems. Calorimetric determination forms the investigative element of this outcome and may be carried out inexpensively with standard laboratory glassware, a more accurate and inexpensive alternative is copper calorimetric apparatus and if funds allow bomb calorimeters may now be purchased from educational suppliers. Learners should be encouraged to not only compare the fuels but to relate these to contextualise their finding to industrial examples and to evaluate the methods used.

In Outcome 4, learners will review a variety of methods used to communicate scientific finding to academia, industry and the general public. Learners have the opportunity to evaluate each of these methods in terms of their reliability, impact, accuracy and bias. Learners should explore examples of good and poor practice in the reporting of scientific results especially where scientific results have been misinterpreted. Learners should explore how poor study design and interpretation can have serious implications, such as the debate over the MMR vaccine. Learners should also explore the impact of popular science television and radio documentaries which reach large numbers of the public and be able critically evaluate these sources. This outcome also allows learners to report on a scientific finding and should take the form of one of the form studied. Learners may use one of their own investigations for this unit or another suitable unit. Alternatively learners may take an existing publication, such as a journal paper, and produce a report in an alternative media such as a webpage, popular press article, podcast or broadcast.

Centres are encouraged to engage employers and other institutions where possible and this unit would benefit from such engagements. Possible activities may involve visits to analytical laboratories, food processing facilities, local and national media organisations.

References

Books

Boyle M. 2008. *Biology.* Collins Educational. ISBN 0007267453
Hill J.W. Petrucci R.H. 1996. *General Chemistry: An Integrated Approach*. New Jersey. Prentice Hall. ISBN 0023544811
Jones A. Reed B. Weyers J. 2007. *Practical Skills in Biology.* Benjamin Cummings. ISBN 0131755093
Kent M. 2000. *Advanced Biology.* OUP Oxford. ISBN 0199141951
Purves B. Sadava D. Orians G. Heller C H. 2009. *Life: The Science of Biology*. W. H. Freeman. ISBN 0716799016
Toole G. and Toole S. 1999. *Understanding Biology for Advanced Level.* Nelson Thornes. ISBN 0748739578
Williams G. 2000. *Advanced Biology for You.* Nelson Thornes. ISBN 0748752980

Journals

Biological Sciences Review, Phillip Allen Publishing
Bioscience Education, Higher Education Academy (e-journal www.bioscience.heacademy.ac.uk/journal)
Biochemistry and Molecular Biology Education – John Wiley and Sons
Biochemical Education – Elsevier Science
Journal of Biological Education – Institute of Biology
Journal of Microbiology and Biology Education – American Society for Microbiology
New Scientist, Reed Business Information

Websites

www.cleapss.org.uk	Consortium of Local Education Authorities for the Provision of Science Services
www.ase.org.uk	The Association for Science Education
www.ncbe.reading.ac.uk	National Centre for Biotechnology Education
www.royalsociety.org	The Royal Society

Unit 331 Understand the Principles of Inheritance and Genetic Manipulation

Level: 3

Credit value: 10

Unit aim

This unit aims to provide learners with an understanding of the principles of inheritance and genetic manipulation. This unit is primarily aimed at learners within a centre-based setting looking to progress into the sector or further education and training.

The aim of this unit is to develop knowledge and understanding of the principles of inheritance and the applications of genetic manipulation in animals.

Learning outcomes

There are **four** learning outcomes to this unit. The learner will be able to:

1. Understand the molecular basis of inheritance
2. Understand the principles of Mendelian genetics
3. Understand the principles of population genetics
4. Know the principles of genetic manipulation

Guided learning hours

It is recommended that **60** hours should be allocated for this unit. This may be on a full-time or part-time basis.

Details of the relationship between the unit and relevant national occupational standards

n/a

Endorsement of the unit by a sector or other appropriate body

This unit is endorsed by Lantra SSC

Assessment and grading

This unit will be assessed by:

- An assignment covering practical skills and underpinning knowledge

Unit 331 Understand the Principles of Inheritance and Genetic Manipulation

Outcome 1 Understand the molecular basis of inheritance

Assessment Criteria

The learner can:

1. Describe the **structure of DNA**
2. Describe **DNA replication**
3. Describe **chromosomal structure**

Range

Eukaryotic cells

Unit content

Structure of DNA

DNA, RNA (including tRNA, mRNA and rRNA)

DNA replication

Semi-conservative replication (Meselson-Stahl experiment), enzymatic involvement, importance and mechanisms of proof-reading and repair, replication forks, Okazaki fragments

Chromosomal structure

Euchromatin, heterochromatin, nucleosomes, genes, alleles, telomeres, chromatids, karyotypes

Unit 331 Understand the Principles of Inheritance and Genetic Manipulation

Outcome 2 Understand the principles of Mendelian genetics

Assessment Criteria

The learner can:

1. Explain how the **behaviour of chromosomes during meiosis** leads to variation
2. Explain **monohybrid and dihybrid inheritance ratios**

Range

Diploid species of animal

Unit content

Behaviour of chromosomes during meiosis

Homologous pairs, crossing over (effect of distance on linked genes), independent assortment

Monohybrid and dihybrid inheritance ratios

Continuous and discontinuous variation, dominance (complete and incomplete), heterozygous and homozygous genotypes, genetic diagrams for both monohybrid and dihybrid crosses to F2 generation, including phenotypic ratios and probability calculations

Unit 331 Understand the Principles of Inheritance and Genetic Manipulation

Outcome 3 Understand the principles of population genetics

Assessment Criteria

The learner can:

1. Describe the process of **evolution through natural selection**
2. Describe the **effect of mutations on variation**
3. Explain evolution in terms of the **Hardy-Weinberg Principle**

Unit content

Evolution through natural selection

Adaptations, stabilising, directional and disruptive selection

Mutations

Harmful, beneficial and neutral mutations

Spontaneous and induced mutations and their effects: point, insertion, deletion, translocation, duplication, frameshift, nonsense, missense, neutral and silent

Hardy-Weinberg Principle

Gene pools, genetic drift, gene flow, conditions for Hardy-Weinberg equilibrium, use of $p^2+2pq+q^2 = 1$ to illustrate evolution of populations

Unit 331 Understand the Principles of Inheritance and Genetic Manipulation

Outcome 4 Know the principles of genetic manipulation

Assessment Criteria

The learner can:

1. Describe **techniques used in genetic manipulation**
2. Identify **applications of genetic manipulation**
3. Evaluate the **advantages and disadvantages of genetic manipulation techniques**

Range

Genetic manipulation in animals, reference to prokaryotic genetic manipulation as necessary to cover the specification

Unit content

Genetic manipulation techniques

Extraction of DNA, gel electrophoresis, use of restriction enzymes, polymerase chain reaction, recombinant DNA technology, use of marker genes, knockout mice (gene targeting), use of vectors in transfection and transduction

Applications of genetic manipulation

Genetic testing, DNA fingerprinting, gene targeting, analysis of gene function and regulation, animal cloning, production of pharmaceuticals from animals (e.g. insulin, alpha-1 antitrypsin)

Advantages and disadvantages of genetic manipulation techniques

Practical limitations of techniques, how limitations might be overcome, commercial, social and ethical considerations of genetic manipulation in animals

Unit 331 Understand the Principles of Inheritance and Genetic Manipulation

Notes for guidance

The context of this unit should be animal-based, though clearly some elements (such as DNA structure) are common to many animals and as such do not require species-specific illustration. The tutor must cover as broad a range as possible in order to for the learner to find the unit relevant and engaging.

The world of genetics is moving at an ever-increasing rate and learners need to be aware of both the basis of inheritance and the applications of genetic manipulation in order to keep pace for further study. It is recommended that up to date journals are used in order to enhance the delivery of this unit for that reason. Wherever possible, the theory should be delivered with practical illustration. First-hand experience of genetic techniques such as DNA extraction can be rewarding and motivating for students without an excessive equipment burden on the tutor. Protocols for this can be found within the reading list. Access to an industrial laboratory would be invaluable experience where possible. It is expected that learners will be familiar with safe working practice, be aware of risk assessments and be equipped with personal protective equipment as necessary throughout all practical work.

Genetics is an area in which great controversy is often provoked. Exploration of the techniques used in genetic manipulation and the potential applications in both domestic and wild animals allows learners to formulate their own, informed views on contemporary issues and may open up avenues of further study for many.

Many links to other scientific units (such as Animal Biology) can be made throughout this unit. Where possible and practical it is recommended that delivery is integrated and these links are emphasised to the learner.

Outcome 1 explores the molecular basis of inheritance. Learners must be aware of the link between structure and function of nucleic acids. Making jigsaw models or using modelling clay can help to make learners aware of the 3D nature of the structures. The sequence of events during DNA replication, including proof-reading and repair, must be covered with the names and roles of enzymes at each stage. Knowledge of chromosomal structure must not be 'stand-alone' but linked to how the structure enables characteristics to be inherited and expressed.

Outcome 2 follows on from outcome 1 and explores the contribution of chromosomal behaviour during meiotic divisions to variation of potential offspring. Knowledge of the stages of meiosis is assumed and hence the requirement here is for a detailed examination of the chromosome behaviour during prophase I and metaphase I, linked to the resultant formation of gametes. Diploid species must be used though learners should be aware of the existence of polyploidy in other species. Learners must be able to construct diagrams of both monohybrid and dihybrid inheritance through to the F2 generation, as well as being able to explain differences between expected and observed phenotypic ratios.

Outcome 3 requires learners to study the principles of population genetics and evolution through natural selection. They must be able to describe and identify the specified mutations, linking them to their relative effects on variation between individuals. They must show an understanding of variation within populations and how species may evolve as a result of alterations to the gene pool. The Hardy –Weinberg principle must be explored in full, with its relevance to evolution. The ability to use the Hardy-Weinberg equation is required.

Outcome 4 requires the learner to be able to describe genetic manipulation techniques. Where possible they should be given the opportunity to carry out techniques or at least observe them being carried out, directly or via video. Learners must be able to describe the equipment, materials and stages in the technique (including timescales). This should lead logically onto examination of practical limitations and how they may be overcome. Applications of genetic manipulation techniques must be individually considered in terms of

commercial, social and ethical considerations rather than simply 'genetic manipulation', though this may be a useful starting point from which discussions may begin. Prokaryotes and viruses often play a part in genetic manipulation techniques and as such learners are required to understand how their replication methods allow this to occur.

There are many high quality resources available online that may be used to deliver this unit. Many of these offer simulations of genetic experiments that learners can carry out as well as animations to demonstrate and clarify genetic concepts. It is important that learners are guided through the vast quantity of internet resources available: many resources are aimed at genetic study at too high a level while others are simply not rigorously reviewed.

References

Books

Bertorelle G. 2009. *Population Genetics for Animal Conservation*. Cambridge University Press

Caroll S.B. Grenier J. Weatherbee S.D. 2004. *From DNA to Diversity*. Blackwell Publishing Ltd

Dawkins R. 1999. *The Extended Phenotype*. Oxford University Press

Dawkins R. 2006. *The Selfish Gene*. Oxford University Press

Hartl D. L. Jones E.W. 2009. *Essential Genetics: a Genomics Perspective, Fifth Edition*. Jones and Bartlett Publishers, Inc

Lochhead W. 2009. *An Introduction to Heredity and Genetics – A Study of the Modern Biological Laws and Theories Relating to Animal and Plant Breeding*. Read Books

Thomas A. 2003. *Introducing Genetics*. Taylor & Francis Ltd

Journals

Annual Review of Genetics
Biological Sciences Review
Biotechnology and Bioengineering
Gene Analysis Techniques
Genetics Selection and Evolution
Genetics
Journal of Animal Breeding and Genetics
Journal of Zoological Systematics and Evolutionary Research
Mammalian Genome
New Scientist
Theoretical Population Biology

Websites

www.jbpub.com/genetics/essentials4e/	Essential Genetics companion website
www.hhmi.org/biointeractive/index.html	Howard Hughes Medical Institute
www.johnkyrk.com	Cell biology animations by John Kyrk
www.learn.genetics.utah.edu	University of Utah Genetic Science Learning Centre
www.molecularstation.com/science-videos	Molecular Station science videos and lectures
www.ncbe.reading.ac.uk	National Centre for Biotechnology Education
www.thenakedscientists.com	The Naked Scientists – science radio, podcasts and practical techniques

Unit 332 Chemistry for Biology Technicians

Level: 3

Credit value: 10

Unit aim:

This unit aims to provide learners with an understanding of the principles of chemistry for biology technicians 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.

Learning outcomes

There are **four** learning outcomes to this unit. The learner will:

1. Be able to relate enthalpy changes to the bonding of a range of substances
2. Be able to show how rates of reaction are affected by varying the reaction conditions
3. Be able to interpret key features of equilibrium processes
4. Be able to demonstrate the structure and properties of simple organic molecules

Guided learning hours

It is recommended that **60** hours should be allocated for this unit. This may be on a full-time or part-time basis.

Details of the relationship between the unit and relevant national occupational standards

n/a

Endorsement of the unit by a sector or other appropriate body

This unit is endorsed SEMTA.

Assessment and grading

This unit will be assessed by:

- An assignment covering practical skills and underpinning knowledge

Unit 332 Chemistry for Biology Technicians

Outcome 1 Be able to relate enthalpy changes to the bonding in a range of substances

Assessment Criteria

The learner can:

1. Carry out experiments to illustrate the relative magnitudes of the **enthalpy changes** associated with the formation and breakage of chemical **bonds**

Unit content

Enthalpy changes

First, second and third laws of thermodynamics. Enthalpy as an extensive property and a function of state. Enthalpy change diagrams and calculation, change in enthalpy for simple chemical reactions, stoichiometric calculations, measurement of heat capacity and specific heats. Hess's Law and standard enthalpies of formation. Enthalpy changes in ionic reactions, combustion and cellular respiration. Standard free energy change

Bonds

The formation and breakage of ionic, covalent and hydrogen bonds and the relevance of Van de Waals forces. Use of the periodic table to determine the structure of simple ionic and covalent compounds. Balancing of chemical equations

Unit 332 Chemistry for Biology Technicians

Outcome 2 Be able to show how rates of reaction are affected by varying the reaction conditions

Assessment Criteria

The learner can:

1. Carry out experiments to show the effect on the **rates of reactions** of changes in concentration, particle size, temperature and presence of a catalyst

Unit content

Rates of reactions

Measuring the rate of reaction: the instantaneous, initial, general and average rate of reaction. The rate law of reactions, rate constant and the method of initial rates. First, zero and second order reactions and their identification. Collision and transition state theories. Reaction profiles and calculation of enthalpy changes. Reaction mechanisms (elementary reactions, slow, fast and reversible steps). Homogenous and heterogeneous catalysts. Enzymes and the effect of temperature. pH, substrate/product concentrations and inhibition

Unit 332 Chemistry for Biology Technicians

Outcome 3 Be able to interpret key features of equilibrium processes

Assessment Criteria

The learner can:

1. Carry out an experiment on osmosis to demonstrate the drive towards the establishment of **equilibrium**
2. Outline how the acid dissociation constant , Ka, provides information about the extent to which **acids and bases** dissociate in aqueous solution
3. Construct half equations and redox equations for simple **redox reactions**

Unit content

Equilibrium

Dynamic nature of equilibrium, the equilibrium constant expression, and reaction quotient, kinetic and thermodynamic views of equilibrium. Le Châtelier's Principle. Calculation of the Equilibrium constant. Relationship of free energy change to the equilibrium constant. The effect of temperature and catalysts on the establishment of equilibrium

Acids and bases

Brønsted-Lowry theory, conjugate acid-base pairing, amphiprotic substances (including water), ionisation/dissociation constants, variation in strength of binary acids, oxoacids and carboxylic acids. Self ionisation of water and the pH scale, calculation of pH. Calculation of equilibrium in solutions of weak acids and weak bases, Buffers, capacity and range. Neutralisation and titration of a strong acid with a strong base and weak acid with a strong base. Effect of pH on amino acids and zwitter ion formation

Redox reactions

Principle of transfer of electrons in oxidation and reduction. Half reaction method of balancing redox equations, standard electrode potentials, spontaneous change and equilibrium in a voltaic cell. Criteria for spontaneous change in redox reactions. Balancing redox reactions

Unit 332 Chemistry for Biology Technicians

Outcome 4 Be able to demonstrate the structure and properties of simple organic molecules

Assessment Criteria

The learner can:

1. Construct structural formulae for named examples of **simple organic compounds**, identifying structural, geometric, and optical isomers where appropriate
2. List typical properties of **simple organic compounds**

Unit content

Simple organic compounds

Short chain alkanes, alkenes, alcohols, alkyl halides, carboxylic acids, aldehydes, ketones, ethers, esters, amines, amides. Recognition of functional groups in organic molecules. Linear and ring structure of sugars and differentiation between aldehyde and keto sugars

Unit 332 Chemistry for Biology Technicians

Notes for guidance

This unit aims to provide learners with a grounding in key elements of organic, inorganic and physical chemistry that underpin the life sciences. It is envisaged that although the contents of this unit are necessarily broad they the outcomes will, wherever possible, be contextualised to the final qualification being undertaken.

Practical laboratory investigations are an important feature of this unit and as such learners will be aware and familiar with relevant safe working practices before any investigation is undertaken. It is imperative that learners gain practical experience in relevant calculations, drawing and identifying chemical structures and the process of scientific investigation including formulating hypotheses/performing a calculation, reporting results and evaluating their findings.

In Outcomes 1 and 2, learners will explore the energy changes associated with making and breaking chemical bonds and the effect of a series of variables on reaction rate. Although the delivery of underpinning theories will necessitate a degree of formal lecturing, practical investigative approached are strongly encouraged. Learners can measure enthalpy changes in exothermic and endothermic reactions using simple calorimetric apparatus and compare these to calculations that they have made. Simple calorimeters can be made using polystyrene cups or laboratory glassware. More accurate copper vessels are inexpensive and bomb calorimeters maybe purchased from educational suppliers at a further cost but are not required. Learners should become practiced at the required calculations and are encouraged to explore the opportunities for scientific discovery, reporting and evaluation provided throughout this unit.

Outcome 3 allows learners to explore the dynamics and significance of equilibrium equations. Again it is recognised that an element of formal lecturing will be required to deliver the underpinning theory involved in this. However, outcome 3 also allows the practical investigation in terms of the osmotic potential of the cell, a simple model of which may be created using semi-permeable tubing. Learners are encouraged to gain practical experience of calculating the equilibrium constant as well as those required when working with acids and bases. Titration experiments provide an excellent opportunity for learners to test their calculations as well as allowing them to produce their own titration curves and investigate the range and capacity of buffers.

In Outcome 4, learners will be required to identify and produce structural formulae for a range of simple organic molecules and identify different types of isomerism. Where possible, the content should be contextualised so that learners are aware of the industrial and commercial uses of key examples of each family of molecules. Ideally learners should, through the course of this unit, handle and explore the properties of selected examples, an example of which may be the effect of increasing length of the carbon chain on boiling point (and intermolecular forces) on alkanes and alcohols. Learners should have the opportunity to gain practice in drawing and identifying organic molecules and predicting the properties of simple examples based upon experimental findings.

Centres are encouraged to engage with employers and other institutions wherever possible and where possible these should be contextualised to the final qualification. The use and production of chemicals is so widespread within the life sciences that a wide range of engagement opportunities are available. These may include visits to farms, food processing and production industries, analytical and research laboratories, chemical and pharmaceutical industries and the petrochemical industry.

References

Books

Boyle M. 2008. *Biology.* Collins Educational. ISBN 0007267453
Hill J.W. Petrucci R.H. 1996. *General Chemistry: An Integrated Approach*. New Jersey. Prentice Hall. ISBN 0023544811
Jones A. Reed B. Weyers J. 2007. *Practical Skills in Biology.* Benjamin Cummings. ISBN 0131755093
Kent M. 2000. *Advanced Biology.* OUP Oxford. ISBN 0199141951
Purves B. Sadava D. Orians G. Heller C H. 2009. *Life: The Science of Biology*. W. H. Freeman. ISBN 0716799016
Toole G. and Toole S. 1999. *Understanding Biology for Advanced Level.* Nelson Thornes. ISBN 0748739578
Williams G. 2000. *Advanced Biology for You.* Nelson Thornes. ISBN 0748752980

Journals

Biological Sciences Review, Phillip Allen Publishing
Bioscience Education, Higher Education Academy (e-journal www.bioscience.heacademy.ac.uk/journal**)**
Biochemistry and Molecular Biology Education – John Wiley and Sons
Biochemical Education – Elsevier Science
Journal of Biological Education – Institute of Biology
Journal of Microbiology and Biology Education – American Society for Microbiology
New Scientist, Reed Business Information

Websites

www.cleapss.org.uk	Consortium of Local Education Authorities for the Provision of Science Services
www.ase.org.uk	The Association for Science Education
www.ncbe.reading.ac.uk	National Centre for Biotechnology Education
www.royalsociety.org	The Royal Society

Unit 333 Understand the Principles and Carry Out the Practice of Biochemistry and Microbiology

Level: 3

Credit value: 10

Unit aim

This unit aims to provide learners with an understanding of the principles of biochemistry and microbiology 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.

Learners will explore key processes that underpin life and investigate the lifecycle, hazards and benefits of a range of microorganisms.

Learning outcomes
There are **six** learning outcomes to this unit. The learner will:

1. Know the principles of biochemistry in relation to cellular structure and function
2. Understand the production of Adenosine Triphosphate (ATP) from glucose by aerobic and anaerobic respiration
3. Understand enzyme kinetics
4. Understand the growth and reproduction of bacteria, viruses and fungi
5. Know the hazards and uses of microorganisms
6. Be able to isolate and classify bacteria

Guided learning hours
It is recommended that **60** hours should be allocated for this unit. This may be on a full-time or part-time basis.

Details of the relationship between the unit and relevant national occupational standards
N/A

Endorsement of the unit by a sector or other appropriate body
This unit is endorsed by Lantra SSC.

Assessment and grading
This unit will be assessed by:

- An assignment covering practical skills and underpinning knowledge

Unit 333 Understand the Principles and Carry Out the Practice of Biochemistry and Microbiology

Outcome 1 Know the principles of biochemistry in relation to cellular structure and function

Assessment Criteria

The learner can:

1. Describe the **structure** of **carbohydrates, proteins and lipids**
2. Outline the **function** of **carbohydrates, proteins and lipids** within an animal.

Range

Carbohydrates – monosaccharides, disaccharides, polysaccharides
Protein – amino acids, peptides, proteins
Lipids – triacylglycerols, fatty acids, cholesterol, phopholipids, waxes

Unit content

Structure of carbohydrates

Straight chain and ring structure of monosaccharides and condensation reactions to form 1-4 and 1-6 glycosidic bonds, combination of monosaccharides to produce common dissaccharides, reducing and non-reducing sugars, structures of glycogen, amylase and amylopectin

Structure of proteins

Common structure of an amino acid and significance of the 'R' group, condensation to form a peptide bond. Primary, secondary, tertiary and quaternary structures and the use of hydrogen bonds and disulphide bridges in forming these structures. Fibrous and globular proteins and denaturation

Structure of lipids

Structure of glycerol and fatty acids. Formation of a triacylglycerol from glycerol and three fatty acids. Structure of saturated and unsaturated fatty acids. Naming of fatty acids based upon both 'n' and Omega. Formation of phospholipids and their hydrophilic and hydrophobic properties

Function carbohydrates

Function of carbohydrates as energy stores, respiratory substrates and as structural components of animal and plant cells and tissues

Function of proteins

Function of proteins as respiratory substrates, storage molecules, enzymes, transport molecules (within the cell, across membranes and between cells), cell signalling molecules (hormones, receptors and signal transduction) and as structural components of animal and plant cells and tissues

Function of lipids

Functions of lipids as storage molecules, respiratory substrates, structural components of animal and plant cells and tissues, insulation, protection (e.g. waterproofing), buoyancy (e.g. blubber), cell membranes, and intercellular messengers (e.g. lipid based hormones)

Unit 333 Understand the Principles and Carry Out the Practice of Biochemistry and Microbiology

Outcome 2 Understand the production of Adenosine Triphosphate (ATP) from glucose by aerobic and anaerobic respiration

Assessment Criteria

The learner can:

1. **Explain** the process of
    - **glycolysis**
    - **citric acid cycle**
    - **oxidative phosphorylation**
2. Compare **aerobic** and **anaerobic** respiration

Range

Cellular Glucose Metabolism: Glycolysis, Link Reaction, Citric Acid Cycle (Kreb's Cycle/Tricarboxylic Acid Cycle) Oxidative Phosphorylation: Respiratory Chain/Electron Transport Chain, ATP Synthase, aerobic respiration, anaerobic respiration

Unit content

Glycolysis

The location of glycolysis in the cell, the principles of energy investment, Adenosine Triphosphate (ATP) use/production and final yield. The significance and production of NADH, pyruvate and water. The changes in chemical structure in terms of changes in the number of carbon atoms and the significance of changes in phosphorylation. The link reaction necessary to form acetyl-CoA from pyruvate

Citric Acid Cycle

The location of the cycle within the entry of acetyl-CoA into the cycle. The number of steps involved in each complete cycle and the changes in the number of carbon atoms as well as the steps that result in production of water, carbon dioxide, NADH, $FADH_2$, and GTP

Oxidative phosphorylation

The location of the electron transport chain and ATP synthase within the cell. The number of protein complexes and the significance of redox reactions, the transport of electrons and the movement of protons. The entry points for NADH and $FADH_2$ and the relative Adenosine Triphosphate (ATP) yields. The principle of proton motive force and the action of Adenosine Triphosphate (ATP) synthase

Aerobic and anaerobic respiration

Comparison of the ATP yield from each. Method of lactic acid production, energetic cost of lactic acid production and the conversion of lactic acid back to glucose, the principle of oxygen debt and the detrimental effects of excess lactic acid in animals

Unit 333 Understand the Principles and Carry Out the Practice of Biochemistry and Microbiology

Outcome 3 Understand enzyme kinetics

Assessment Criteria

The learner can:

1. Evaluate models of enzyme **action**
2. Compare types of enzyme **inhibition**
3. Review the effect of **environmental changes** on enzyme reaction rates

Range

Action, inhibition and control of enzyme catalysed reaction in eukaryotic and prokaryotic cells

Unit content

Action

Lock and Key and Induced Fit models with reference to catabolic and anabolic enzyme reactions

Inhibition

Competitive, non-competitive, reversible and irreversible inhibition and their effect on the velocity of enzyme catalysed reactions

Environmental changes

pH, temperature, substrate and product concentration, and their effect on the velocity of enzyme catalysed reactions. The effect of denaturation on enzyme activity and causes of denaturation

Unit 333 Understand the Principles and Carry Out the Practice of Biochemistry and Microbiology

Outcome 4 Understand the growth and reproduction of bacteria, viruses and fungi

Assessment Criteria

The learner can:

1. Compare the **reproduction** of microorganisms
2. Examine the **growth requirements** of microorganisms

Range

Bacteria, fungi and viruses

Unit content

Reproduction

Binary fission of bacteria, typical bacterial growth curve phases, sporulation (bacteria and fungi), transformation and transduction events, plasmids and their transfer by conjugation, budding. Viral adsorption, penetration, multiplication and release

Growth requirements

The effect of temperature, pH, osmotic variables, oxygen and nutrients. Use of growth requirements in bacterial selection and identification. Hyphae formation in fungi. Reliance of viruses on biochemistry of infected cell. The use of antiseptics, disinfectants, sterilisation (heat, radiation, filtration and chemical) and antibiotics to control microbial growth

Unit 333 Understand the Principles and Carry Out the Practice of Biochemistry and Microbiology

Outcome 5 Know the hazards and uses of microorganisms

Assessment Criteria

The learner can:

1. Describe key **uses** of microorganisms with reference to animal and human health
2. Outline the relevance of **COSHH** legislation with reference to working with microorganisms
3. Identify **hazards** associated with handling microorganisms

Range

Bacteria, fungi, protozoa and viruses

Unit content

Uses

The use of fungi and bacteria in food technology to produce alcohol, foods such as cheese and leavened bread as well as vitamin and amino acid production. Production of high fructose corn syrup, vinegar, citric acid, silage, haylage and the importance of nitrogen fixation. The potential of genetic modification of microorganisms, a current example being insulin derived from bacterial sources. The role of microorganisms in animal digestion in the reticulo-rumen, coecum and large intestine

Control of Substances Hazardous to Health (COSHH) 2002

The application of COSHH to microorganisms including the classification of microorganisms based upon hazard and risk. The application of COSHH to chemicals commonly used in microbiological identification such as disinfectants, stains and solvents

Hazards

Infection/zoonosis, toxin production, environmental contamination, spore formation, aerosols formation. Hazards posed by commonly used equipment and chemicals in microbiological examination and identification such as naked flames, disinfectants, stains and solvents

Unit 333 Understand the Principles and Carry Out the Practice of Biochemistry and Microbiology

Outcome 6 Be able to isolate and classify bacteria

Assessment Criteria

The learner can:

1. **Isolate** a monoculture from a mixed culture of bacteria under aseptic conditions
2. Use microbiological **tests to classify** a bacteria using a key

Range

Bacteria

Unit content

Isolate

Obtain a pure monoculture from a mixed culture of two or more species

Tests to classify

Use of a key to identify a monoculture of bacteria based upon the media composition, cellular metabolism, oxygen availability, colony morphology, motility, cell morphology and chemical staining properties

Unit 333 Understand the Principles and Carry Out the Practice of Biochemistry and Microbiology

Notes for guidance

This unit is designed to provide learners with an understanding of cell metabolism and microbiology as well as the importance of these to the life and well being of all animals.

Throughout the unit, the emphasis should be on safe working and the use of investigative methods. It is expected that learners will be aware of and familiar with safe laboratory working practices within the context in which they are working. This unit provides an opportunity for learners to develop not only general laboratory training but also to learn specific and valuable microbiological techniques currently used in industry and research.

In Outcome 1, the learner will be required to describe the structure-function relationships of a range of carbohydrates, proteins and lipids. Although it is accepted that formal lectures will play a role in delivering this outcome, it is recommended that an investigative practical laboratory approached is used where possible. Learners should be able to see and handle examples of different molecules and where possible compare and contrast their properties. For example learners might explore the physical properties of oils, fats and waxes and relate these to their chemical structure.

Outcome 2 is principally concerned with glucose metabolism by aerobic and anaerobic methods. This central pathway also provides an opportunity to explore the metabolism of both proteins and lipids as well as the role played by a range of vitamins and minerals in cell metabolism. Again it is accepted that formal lectures will be used during the delivery of this outcome, however there is scope for a more investigative approach. Yeast provides excellent models for aerobic and anaerobic respiration and learners themselves can be used to demonstrate the physiological effects of anaerobic respiration, which may then be related to the underlying biochemistry.

Outcome 3 explores the role of enzymes in cell metabolism and provides an excellent opportunity for learners to perform a practical investigation into enzyme kinetics. A range of plant and animal derived enzymes are available and a wide range of investigations may be derived from these. There are also a number of commercially available kits that may be used to investigate enzyme kinetics.

The delivery of Outcomes 4, 5 and 6 will involve a degree of formal lectures, though there is the opportunity to combine bacteriological aspects of Outcomes 4 and 5 into a practical microbiological investigation used to deliver Outcome 6. Learners should also have the opportunity to investigate the use of micro organisms in food production, which also provides an opportunity to learn about the reproduction and growth of fungi, for example in the production of wine, vinegar or blue cheese. The inhibition of bacterial growth may also be incorporated into the investigation involved in Outcome 6, for example through the use of disinfectant washes or antibiotic sensitivity testing discs.

Outcome 6 is designed to be delivered through a practical microbiological investigation whereby learners start with a mixed bacterial culture and are able to isolate and identify a monoculture using a simple bacterial key. CLEAPSS provides guidelines for working with micro organisms within education and many of the associated hazards can be avoided by purchasing 'known' non-pathogenic cultures. These may then be combined to produce a mixed culture that learners can work from. This investigation provides an opportunity for learners to gain experience of current industry techniques and acquire valuable practical skills.

Centres are encouraged to engage employers and other institutions wherever possible and this unit would benefit from any such engagement. Possible activities may include visits to research labs, food processing facilities and diagnostic facilities. It is worth noting that many publicly funded research grants specify an obligation for public engagement and that it is envisaged that this unit may be particularly useful to learners wishing to progress to higher education.

References

Books

Boyle M. 2008. *Biology.* Collins Educational. ISBN 0007267453
Jones A. Reed B. Weyers J. 2007. *Practical Skills in Biology.* Benjamin Cummings. ISBN 0131755093
Kent M. 2000. *Advanced Biology.* OUP Oxford. ISBN 0199141951
Toole G. and Toole S. 1999. *Understanding Biology for Advanced Level.* Nelson Thornes. ISBN 0748739578
Williams G. 2000. *Advanced Biology for You.* Nelson Thornes. ISBN 0748752980

Journals

Biological Sciences Review, Phillip Allen Publishing
Bioscience Education, Higher Education Academy (e-journal)
Biochemistry and Molecular Biology Education – John Wiley and Sons
Biochemical Education – Elsevier Science
Journal of Biological Education – Institute of Biology
Journal of Microbiology and Biology Education – American Society for Microbiology
New Scientist, Reed Business Information

Websites

www.hse.gov.uk	Heath and Safety Executive
www.cleapss.org.uk	Consortium of Local Education Authorities for the Provision of Science Services
www.ase.org.uk	The Association for Science Education
www.ncbe.reading.ac.uk	National Centre for Biotechnology Education
www.sgm.ac.uk	Society for General Microbiology
www.sfam.org.uk	Society for Applied Microbiology
www.royalsociety.org	The Royal Society
www.biochemistry.org	The Biochemical Society

Unit 334 Understand the Principles of Chemistry for Biological and Medical Science

Level: 3

Credit value: 10

Unit aim

The aim of this unit is to enable learners to be familiar with basic chemical concepts which underpin biology and biomedical professions.

Learning outcomes

There are **four** learning outcomes to this unit. The learner will:

1. Be able to use the necessary skills to safely measure quantities for chemical reactions
2. Understand the effect of environmental conditions on rates of reaction
3. Understand the relationship between molecular bonding and enthalpy changes
4. Be able to interpret key features of equilibrium processes in fluid states

Guided learning hours

It is recommended that **60** hours should be allocated for this unit. This may be on a full-time or part-time basis.

Details of the relationship between the unit and relevant national occupational standards

N/A

Endorsement of the unit by a sector or other appropriate body

This unit is endorsed by Lantra SSC

Assessment and grading

This unit will be assessed by:

- An assignment covering practical skills and underpinning knowledge

Unit 334 Understand the Principles of Chemistry for Biological and Medical Science

Outcome 1 Be able to use the necessary skills to safely measure quantities for chemical reactions

Assessment Criteria

The learner can:

1. Perform **volumetric calculations** leading to accurate chemical quantities required for reactions
2. Identify **hazards and controls associated with chemical reactions**
3. **Measure accurately** quantities of solid, liquid and gaseous chemicals

Unit content

Volumetric calculations

Avogadro's constant, calculations involving mass, moles, concentrations and volumes (e.g. $M=CV$, $M_aV_a = M_bV_b$), titration curves, units and interconversions (e.g. mol, dm^3, cm^3, mol dm^{-3}, g, $gmol^{-1}$)

Hazards and controls associated with chemical reactions

Laboratory safety symbol interpretation, Personal Protective Equipment (PPE), hazard identification and risk assessment

Measurement of solids, liquids and gases

Use of balances, measuring cylinders, burettes and gas syringes

Unit 334 Understand the Principles of Chemistry for Biological and Medical Science

Outcome 2 Understand the effect of environmental conditions on rates of reaction

Assessment Criteria

The learner can:

1. Summarise properties of elements, groups and rows in the Periodic Table, in terms of:
    - **structure**
    - **physical properties**
    - **chemical properties**
2. Describe **reaction mechanisms** and profiles
3. Identify **environmental conditions** that affect **rates of reactions**
4. Analyse the effect of environmental conditions on rates of reaction

Unit content

Structure, physical and chemical properties of chemicals

Atomic structure (neutrons, protons, electrons), electronic configuration and place in the Periodic Table, patterns in atomic radii, first ionisation energies, electronegativity, reactions of group 1, 2 and 4 elements with water, oxygen and chlorine, reactions of period 3 elements with water, oxygen and chlorine

Rates and mechanisms of reactions

Units of rate (mol $dm^{-3}s^{-1}$), collision theory, activation energy, reaction profiles, Maxwell-Boltzmann Distribution, simple reaction mechanisms (e.g. halogenalkanes and hydroxide ions), reactions with orders 0, 1 and 2, rate determining steps

Environmental conditions

Effect of concentration, temperature, pressure and addition of a catalyst to reactions, effect of pH, temperature and concentration of substrates on enzyme-catalysed reactions

Unit 334 Understand the Principles of Chemistry for Biological and Medical Science

Outcome 3 Understand the relationship between molecular bonding and enthalpy changes

Assessment Criteria

The learner can:

1. Explain ionic and covalent **bonding**
2. Analyse the **bonding** properties of **carbon**
3. Analyse **enthalpy changes** for endothermic and exothermic reactions
4. Apply Hess's Law to determine enthalpy changes in reactions

Unit content

Bonding

Ionic, covalent, hydrophilic/hydrophobic interactions, hydrogen bonds, Van der Waals forces

Bonding in carbon

Valences of carbon, structures of carbon compounds (straight, branched, ring), importance of carbon compounds in organisms (e.g. carbon dioxide, carbonate ions etc)

Enthalpy changes

Entropy, units (ΔH), standard enthalpy changes (combustion, formation, neutralisation and reaction) linked to bond formation and bond breakage, theory and application of Hess's law

Unit 334 Understand the Principles of Chemistry for Biological and Medical Science

Outcome 4 Be able to interpret key features of equilibrium processes in fluid states

Assessment Criteria

The learner can:

1. **Calculate pH values** from proton concentrations and vice versa
2. Analyse **equilibria of liquids and gases** across membranes
3. Predict **shifts in equilibrium** due to:
    - concentration
    - temperature
    - pressure
4. Describe **reduction and oxidation** processes in biological systems

Unit content

pH calculations

Hydrogen ion concentration in aqueous solutions, K_w, Henderson-Hasselbalch equation, $pH = {}_{log10}[H+]$, $[H+]=10^{-pH}$

Equilibria of liquids and gases

Diffusion, osmosis, water potential, membrane potential, oxygen-haemoglobin dissociation curve, blood serum analysis and indicators of common disorders in one relevant species

Shifts in equilibrium

Reversible reactions, Le Chatelier's Principle, calculation of equilibrium constant, effects of changing concentration, temperature and pressure on the position of equilibrium

Reduction and oxidation

Oxidation, reduction, oxidising and reducing agents, oxidation numbers for organic compounds, redox reactions of ATP in respiration, action of oxidoreductases, redox processes in digestion

Unit 334 Understand the Principles of Chemistry for Biological and Medical Science

Notes for guidance

This unit should be delivered in a varied fashion, using tutorials, problem solving and practical investigations alongside formal lectures and practice. Animations and games are available on the internet for use by learners or within teaching sessions. Learners should be given vocationally relevant contexts wherever possible and biological examples should be used to illustrate the relevance of the chemistry throughout.

Tutors must ensure that learners are aware of hazards involved in laboratory work, and that learners have appropriate personal protective equipment before commencing any practical investigations. Learners could begin practical work with putting together risk assessments specific to the laboratory in which the investigations are taking place, and would benefit from being able to see risk assessments produced by working laboratories. If possible, learners should be able to visit diagnostic laboratories and guest lectures by biomedical scientists are encouraged.

The preclinical curriculum for veterinary and biomedical sciences has biochemistry and physiology as core components. It is important that learners understand basic chemical concepts in order to go on to study these subjects at a higher level, as well as understanding the importance of chemical understanding within a biological context.

One of the most useful diagnostic tools available to biomedical practitioners is blood analysis. Though part of this will involve the study of blood cells (haematology) a significant proportion involves analysis of substances in the blood serum, such as sodium, potassium and chloride levels, and blood urea, nitrogen and ammonia. The values of these results can be presented in different units and therefore an understanding of the units, and the ability to convert to different units, is essential.

Accurate interpretation of blood serum analysis requires chemical knowledge in areas such as behaviour of elements / molecules and the periodic table, chemical reactions and kinetics, quantitative chemistry and disassociation of acids and bases.

The unit contains practical mathematics and tutors are strongly encouraged to build learners' confidence in more basic mathematical techniques prior to introducing the more advanced mathematics.

References

Books

Atkins P. de Paula J.,2009. *Elements of Physical Chemistry.* Oxford University Press.

Burrows A. Parsons A. Price G. Holman J. Piling G. 2009. *Chemistry3: Introducing Inorganic, Organic and Physical Chemistry.* Oxford University Press

Chapman C.1998. *Basic Chemistry for Biology.* McGraw-Hill Education

Clark J. 2000. *Calculations in AS/A Level Chemistry.* Longman

Dean J. Jones A Reed R. Jones A. Weyers J. Holmes D. 2001. *Practical Skills in Chemistry*. Prentice Hall

Lobban C. 1992. *Successful Lab Reports: A Manual for Science Students*. Cambridge University Press

Parsons R. 2008. *Head Start to AS Level Chemistry*. Coordination Group Publications

Sackheim G. 2007. *An Introduction to Chemistry for Biology Students (9th Edition)*. Pearson Education

Winter M. 1994. *Chemical Bonding*. Oxford University Press

Journals

Biological Sciences Review
Journal of Biological Chemistry
New Scientist
Pure and Applied Chemistry

Websites

www.bbc.co.uk	BBC, particularly the 16+ science section chemistry-react.org Nuffield Advanced Chemistry
www.chemguide.co.uk	Chemguide (Jim Clark)
www.cleapps.org.uk	CLEAPPS
www.practicalbiology.org	Practical Biology (Nuffield Foundation Curriculum Programme / Society of Biology
www.practicalchemistry.org	Practical Chemistry (Nuffield Foundation Curriculum Programme / Royal Society of Chemistry / CLEAPPS
www.rsc.org	Royal Society of Chemistry
www.wellcome.ac.uk	Wellcome Trust

Unit 335 Prepare Horses for Transportation

Level: 3

Credit value: 5

Unit aim

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

The aim of this unit is to provide the learner with the skills to be able to carry out the preparation of horses for transport. The unit will prepare the learner to go on and continue to practice and improve these skills if they progress into work or a work-related situation. The unit covers preparing horses for transporting by road.

Learning outcomes

There are **two** learning outcomes to this unit. The learner will:

1. Be able to prepare horses and vehicles for transportation
2. Understand the requirements of transporting horses

Guided learning hours

It is recommended that **30** hours should be allocated for this unit. This may be on a full-time or part-time basis.

Details of the relationship between the unit and relevant national occupational standards

N/A

Endorsement of the unit by a sector or other appropriate body

This unit is endorsed by Lantra SSC

Assessment and grading

This unit will be assessed by:

- An assignment covering practical skills and underpinning knowledge

Unit 335 Prepare Horses for Transportation

Outcome 1 Be able to prepare horses and vehicles for transportation

Assessment Criteria

The learner can:

1. Check vehicle for **roadworthiness and legal requirements**
2. **Prepare** horses for **travelling**
3. **Load and unload horses** including reluctant/difficult loaders.

Unit content

Roadworthiness and legal requirements

Driver licensed to drive horsebox or trailer, driver checks, (oil, water, tyres, lights, brakes) tax, MOT or plating as appropriate for vehicle, HGV and non-HGV, vehicle insurance, safe travel area for horse including floor checks

Travel preparation

Travelling boots/bandages, rug according to conditions, tail bandage and guard, poll guard, type of headcollar (leather or should have safe breaking point), preparation of travel area for horse, comfort of horse e.g. ventilation, haynet if appropriate

Load and unload horses

Load and unload horses safely, load reluctant/difficult loaders, importance of confident attitude and stance of handler, positioning of vehicle to encourage horse to load, equipment for difficult loader e.g. bridle/chifney, lunge line, health and safety e.g. gloves, stout boots, hard hat

Unit 335 Prepare Horses for Transportation

Outcome 2 Understand the requirements of transporting horses

Assessment Criteria

The learner can:

1. Describe the **legal requirements for transporting** horses by road
2. Explain the requirements of **animal welfare** when transporting horses
3. Describe how to deal with a horse that is **difficult** or reluctant to **load**

Unit content

Legal requirements of transport

Current legislation, operator's licence for commercial transporters, Welfare of Animals (Transport) Order 2006, Transit of Animals (Road and Rail) Order 1975, Highway Code, driving tests since 1997, records of journeys, transport times, weight limits, HGV and non-HGV, post 1997 driving licence requirements

Animal welfare

Codes of Practice, National Equine Welfare Council, importance of ventilation, signs of stress, tiredness, dehydration, driving responsibly, frequency of rests, feeding and watering during travel

Difficult loaders

Position of vehicle: next to wall, park so that ramp angle is lower
Inviting environment: front ramp down, partitions opened, use of companion horse, training of horse; loading regularly, feeding in trailer/lorry, use of assistant/s to motivate horse
Identify reasons for difficulty: horse frightened or awkward and manage accordingly, driving responsibly to prevent problem recurring
Equipment for horse: bridle/chifney, lunge line
Personal Protective Equipment (PPE) for handlers: gloves, hard hat, boots

Unit 335 Prepare Horses for Transportation

Notes for guidance

This unit is designed to provide the learner with the knowledge and skills required to transport horses. They will also learn how to check a vehicle prior to travelling and how to load horses.

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 within the context in which they are working.

Outcome 1 covers legislation and preparation for travel. This will require some formal delivery but learners should have access to vehicles and horses to load and unload. Initially quiet loaders should be made available but learners should have the opportunity to work with more difficult horses as their abilities develop. Current and relevant legislation should be covered regarding the transportation of horses.

Outcome 2 covers the underpinning knowledge for transporting horses and is likely to be in a more formal lecturing context. Learners should understand current legislation and Codes of Practice in relation to animal welfare when transporting horses. Emphasis should be placed on safe and responsible driving and how to manage difficult loaders.

Learners working towards level 3 are likely to have experience of horse transportation. This unit aims to extend and build upon the learner's skills in horse transportation. Emphasis should also be placed on the planning of journeys to promote the care and welfare of horses. It is also important that the learner understands current legislation and Codes of Practice in relation to the transport of horses.

Centres are encouraged to introduce employers and specific professionals from industry to provide interesting and relevant experience to the learner. Visits to competitions and/or relevant events would add depth to the learner experience.

References

Books

Henderson J. 2005. *The Glovebox Guide to Transporting Horses.* J A Allen & Co.

Journals

AATA Manual for the Transport of Live Animals
Second Edition
Defra in particular:
Guidance Notes on the Welfare of Animals (Transport) Order 1997
Strategy for the Horse Industry in England and Wales
The Blue Cross – Trailer Safety

Websites

www.newc.co.uk National Equine Welfare Council

Appendix 1 Relationships to other qualifications

Literacy, language, numeracy and ICT skills development

These qualifications include opportunities to develop and practise many of the skills and techniques required for success in the following qualifications:

- Functional Skills (England) – see **www.cityandguilds.com/functionalskills**
- Essential Skills (Northern Ireland) – see **www.cityandguilds.com/essentialskillsni**
- Essential Skills Wales – see **www.cityandguilds.com/esw**

There might also be opportunities to develop skills and/or portfolio evidence if learners are completing any Key Skills alongside these qualifications.

Appendix 2 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.**

Providing City & Guilds qualifications – a guide to centre and qualification approval contains detailed information about the processes which must be followed and requirements which must be met for a centre to achieve 'approved centre' status, or to offer a particular qualification. Specifically, the document includes sections on:

- The centre and qualification approval process and forms
- Assessment, verification and examination roles at the centre
- Registration and certification of learners
- Non-compliance
- Complaints and appeals
- Equal opportunities
- Data protection
- Frequently asked questions.

Ensuring quality contains updates and good practice exemplars for City & Guilds assessment and policy issues. Specifically, the document contains information on:

- Management systems
- Maintaining records
- Assessment
- Internal verification and quality assurance
- External verification.

Access to Assessment & Qualifications provides full details of the arrangements that may be made to facilitate access to assessments and qualifications for learners who are eligible for adjustments in assessment.

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

- *Walled Garden*
  Find out how to register and certificate learners on line
- *Events*
  Contains dates and information on the latest Centre events
- *Online assessment*
  Contains information on how to register for GOLA assessments.

Useful contacts

Type	Contact	Query
UK learners	T: +44 (0)84 4543 0033 E: learnersupport@cityandguilds.com	• General qualification information
Centres	T: +44 (0)84 4543 0000 F: +44 (0)20 7294 2413 E: centresupport@cityandguilds.com	• Exam entries • Registrations/enrolment • Certificates • Invoices • Missing or late exam materials • Nominal roll reports • Results
Walled Garden	T: +44 (0)84 4543 0000 F: +44 (0)20 7294 2405 E: walledgarden@cityandguilds.com	• Re-issue of password or username • Technical problems • Entries • Results • GOLA • Navigation • User/menu option problems
Employer	T: +44 (0)121 503 8993 E: business_unit@cityandguilds.com	• Employer solutions • Mapping • Accreditation • Development Skills • Consultancy

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

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