

Skills for Work:  
**Rural Skills**  
**Intermediate 1**

Animal Husbandry:  
An Introduction (Cattle)



Support Material

July 2006



Scottish Further Education Unit



## **Acknowledgements**

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## **Rural Skills: Animal Husbandry: An Introduction (Cattle), Intermediate 1 DX0X 10**

### **Introduction**

These notes are provided to support teachers and lecturers presenting the Scottish Qualifications Authority Unit DX0X 10 Rural Skills: Animal Husbandry: an Introduction (Cattle context). Copyright for this pack is held by the Scottish Further Education Unit (SFEU). However, teachers and lecturers have permission to use the pack and reproduce items from the pack provided that this is to support teaching and learning processes and that no profit is made from such use. If reproduced in part, the source should be acknowledged.

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## **Reference Section**

## What are Skills for Work Courses all about?

Skills for Work Courses are designed to help candidates to develop:

- skills and knowledge in a broad vocational area
- Core Skills
- an understanding of the workplace
- positive attitudes to learning
- skills and attitudes for employability

A key feature of these Courses is the emphasis on **experiential learning**. This means learning through practical experience and learning by reflecting on experience.

### Learning through practical experience

Teaching/learning programmes should include some or all of the following:

- learning in real or simulated workplace settings
- learning through role play activities in vocational contexts
- carrying out case study work
- planning and carrying out practical tasks and assignments

### Learning through reflecting at all stages of the experience

Teaching/learning programmes should include some or all of the following:

- preparing and planning for the experience
- taking stock throughout the experience
- reviewing and adapting as necessary
- reflecting after the activity has been completed
- evaluating, self-assessing and identifying learning points

The Skills for Work Courses are also designed to provide candidates with opportunities for developing **Core Skills** and enhancing skills and attitudes for **employability**.



## Core Skills

The five Core Skills are:

- Communication
- Numeracy
- Information Technology
- Problem Solving
- Working with Others

Opportunities to develop aspects of Core Skills are highlighted in *Guidance on Teaching and Learning Approaches*.

## Employability

The skills and attitudes for employability, including self-employment, are outlined below:

- **generic skills/attitudes valued by employers**
  - understanding of the workplace and the employee's responsibilities, for example time-keeping, appearance, customer care
  - self-evaluation skills
  - positive attitude to learning
  - flexible approaches to solving problems
  - adaptability and positive attitude to change
  - confidence to set goals, reflect and learn from experience
- **specific vocational skills/knowledge**

Course Specifications highlight the links to National Occupational Standards in the vocational area and identify progression opportunities

Opportunities for developing these skills and attitudes are highlighted in each of the Course and Unit Specifications. These opportunities include giving young people direct access to workplace experiences or, through partnership arrangements, providing different learning environments and experiences which simulate aspects of the workplace. These experiences might include visits, visiting speakers, role play and other practical activities.

*A Curriculum for Excellence* (Scottish Executive 2004) identifies aspirations for every young person. These are that they should become:

- successful learners
- confident individuals
- responsible citizens
- effective contributors

The learning environments, the focus on experiential learning and the opportunities to develop employability and Core Skills in these Courses contribute to meeting these aspirations.

## **The Course in Rural Skills (Intermediate 1)**

### **Course Rationale**

The land-based sector is very diverse and includes a wide number of disciplines that share a common element of being active, practical and mainly based outdoors. The major disciplines that are recognised as land-based by the sector skills council for the area include the following: agricultural crops; fencing industries; land-based engineering industries; production horticulture industries; tree and timber related industries; environmental conservation industries; landscaping industries; agricultural livestock; animal care industries; aquaculture; equine industries; farriery; fisheries management; game and wildlife management and veterinary industries.

There is a very wide range of land-based businesses in Scotland with a great variety of job roles. Changes in rural land use, including the decline and change of traditional agriculture, have created a knowledge gap. Research has indicated that fewer people are likely to contribute to the rural economy and its development unless more individuals are introduced to the possible opportunities in land-based industries in the UK.

This Rural Skills Course has been designed to provide a broad basis for progression into further education and training in the land-based sector. It allows candidates to begin to develop some of the basic practical skills necessary to work in most of these disciplines as well as an opportunity to explore the very diverse employment prospects that exist.

The primary target group for the course is school candidates in S3 and S4. It is anticipated that, for this group of candidates, the course will rely on and build on existing partnerships between schools and further education colleges delivering specialisms in land-based industries. It may also be delivered in conjunction with training providers or employers specialising in the land-based industries. These partnerships will enable the course to be delivered in a variety of appropriate learning environments with access to relevant teaching expertise.

The course has been designed with a common core that allows candidates to develop an insight into the numerous opportunities for the land-based industries and to develop the basic common skills of the sector. It also allows candidates to choose a route that is related to either animals or plants where they can develop specific basic practical skills in that general category.

The general aims of the course are to:

- widen participation in vocationally-related learning for 14–16 year olds
- allow candidates to experience vocationally-related learning
- provide candidates with a broad introduction to the land-based sector

- encourage candidates to develop a good work ethic including reliability, flexibility and a positive attitude to work
- provide opportunities to develop Core Skills in a realistic context
- encourage candidates to take charge of their own learning and development
- provide a range of teaching, learning and assessment styles to motivate candidates to achieve their full potential
- facilitate progression to further education and/or training

The specific aims of this course are to:

- introduce candidates to the various disciplines of the land-based sector
- allow candidates to develop a basic knowledge of a selection of land-based industries and related job roles
- allow candidates to experience an outdoor working environment
- allow candidates to develop an understanding of the very flexible requirements of the individual who works with plants and/or animals
- allow candidates to develop an awareness of health and safety issues that are integral to a career in a land-based industry
- allow candidates to develop the technical knowledge, skills and understanding of some of the commonly used practical skills associated with land-based industries at this level
- introduce candidates to the technical knowledge, skills and understanding of some specific practical skills associated with a selection of land-based industries at this level
- prepare candidates for more focused further learning opportunities, study and training for employment in land-based industries

## **Unit Outcomes, PCs and Evidence Requirements**

### **National Unit Specification: statement of standards**

#### **Unit: Animal Husbandry: An Introduction (Intermediate 1)**

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

#### **Outcome 1**

Identify basic characteristics of animals.

##### **Performance Criteria**

- a) Correctly identify gender differences of animals.
- b) Correctly identify signs of health of animals.
- c) Correctly identify the breed of animals.
- d) Correctly identify the life stage of animals.

#### **Outcome 2**

Assist with the preparation and maintenance of accommodation for animals.

##### **Performance Criteria**

- a) Assist in setting up animal accommodation.
- b) Assist in cleaning animal accommodation.
- c) Demonstrate safe working practices.

#### **Outcome 3**

Assist with the preparation and provision of food and water for animals

##### **Performance Criteria**

- a) Assist in the preparation of appropriate food for animals, following instructions.
- b) Assist in the provision of food for animals.
- c) Provide water in an appropriate manner for animals.
- d) Demonstrate safe working practices.

## **Evidence Requirements For This Unit**

Performance evidence supported by an assessor observation checklist is required to show that all Outcomes and Performance Criteria have been achieved.

Evidence must be gathered in an appropriate context where live animals are kept in work settings or simulated work settings.

For each Outcome, evidence is required in relation to **one** category of animal. The animal(s) can be selected from the following:

- horses
- sheep
- cattle
- pigs
- game birds
- small 'cage' companion mammals
- domestic dogs
- domestic cats

The first section of the assessor observation checklist confirms that the candidate has identified:

- two physical characteristics that allow gender identification
- five signs of good health
- two breeds of the same category of animal (photographic identification is acceptable)
- two life stages selected from young, adolescent, adult, old, pregnant, lactating (photographic identification is acceptable)

The second section of the assessor observation checklist confirms that the candidate has assisted in:

- setting up accommodation for the animal(s)
- cleaning the accommodation for the animal(s)
- preparing food for the animals
- providing food for the animals
- providing water in an appropriate manner for the animals

The item for this Unit contains assessor observation checklists. The NAB illustrates the national standard required for this Unit. Centres who wish to devise their own assessments should refer to the NAB to ensure a comparable standard.

**NB Centres must refer to the full Unit Specification for detailed information related to this Unit.**

## Employability Skills Profile

### Employability Skills Profile: Rural Skills (Intermediate 1)

Land Based Industries: An Introduction	= A
Estate Maintenance: An Introduction	= B
Employability Skills for land based industries	= C
Animal Husbandry: An Introduction	= D
Animal Handling: An Introduction	= E
Crop Production: An Introduction	= F
Soft Landscaping: An Introduction	= G

Employability skill/attitude		Evidence
In addition to the specific, vocational skills developed and assessed in this Course, employability skills are addressed as detailed below:		
• acceptable time keeping and attendance		C
• understanding roles and responsibilities in the workplace		A
• planning and preparing for work		A, C
• working co-operatively with others		A, C, D, E, F, G
• awareness of efficient resource use		C
• ability to follow instructions		A, B, C, D, E, F, G
• health and safety awareness		B, C, D, E, F, G
• self review and evaluation		A, C
• positive attitude to learning		C

#### Assessment evidence:

- A = Portfolio containing candidate planning and review sheets and assessor checklists
- B = Assessor checklists of practical tasks undertaken
- C = Candidate/assessor review sheets, risk examination log
- D = Assessor checklists and candidate log sheets of practical tasks undertaken
- E = Assessor checklists and candidate log sheets of practical tasks undertaken
- F = Assessor checklists and candidate log sheets of practical tasks undertaken
- G = Assessor checklists and candidate log sheets of practical tasks undertaken



## **Tutor Support Section**

## How to use this pack

This pack comes in two sections.

In the first section advice is given to tutors on the following:

- general Guidance on delivery specifically in the context of cattle
- signposting of Employability Skills as they occur within the Unit
- guidance on integrating the *Employability Skills for Land-based Industries* Unit as well as generic employability skills, qualities and attitudes throughout the Unit
- advice on where it would be appropriate to collect evidence for the assessment of employability skills
- resource requirements in terms of physical resources and recommended texts or supplementary resources
- a suggested learning programme
- guidance on Learning and Teaching with under 16s

In the second section, student support notes are provided which include the following:

- a general introduction to the content and format of the Unit
- materials relating to the knowledge, understanding and practical skills of the Unit.
- some interactive student activities accompanied by exemplar answers for student referral or tutor use following activity
- some self evaluation/reflection tasks following activities as appropriate
- some worksheets that may support practical activities
- guidance on likely practical activities that the student will be assessed on
- a self-assessment area for students to test their own knowledge and understanding (for use when student is familiar with both all of the practical and knowledge aspects of the Unit)
- revision activities
- a glossary of topic specific terminology for student referral


**Tutors should note that this is not designed as a complete teaching pack. The student notes are intended to support the teaching process, give guidance as to the level of knowledge and understanding that is expected and give the student opportunity to reinforce and self-review what they have learnt. They are not designed to be a substitute for practical activity but are**

**a useful adjunct to it. Use of the materials and activities is not mandatory but they will provide centres with a flexible set of materials which can be selected, adapted and used in an order that best suits their situation. Tutors are encouraged to use the materials creatively in ways which will engage the younger student.**

You may wish to place the student notes on your own Intranet by downloading this pack from the *Skills for Work* section of the SFEU website [www.sfeu.ac.uk](http://www.sfeu.ac.uk). On the web-based version, the hyperlinks are live and there is a link between emboldened terms to the glossary of terms, which may be useful for the learner.

**If printing out the student notes, please note that the photographs should be in colour (e.g. to help with breed identification).**

The use of textbooks is only appropriate as an introduction to working with cattle.

Activities are identified with the  symbol.

## Guidance on Delivery of Animal Husbandry: An Introduction (Cattle)

It is important that the majority of learning activity takes place involving live cattle in either a work setting or simulated work setting. Partnerships with land-based colleges, training providers or employers are likely to provide the most appropriate settings. Students should experience the proximity of cattle, the outdoor working conditions and the associated effects on their senses (smells, dirt, and ambient temperatures).

Students must be under **direct supervision** at all times when carrying out the practical activities of this Unit.

**It is important that the deployment of appropriate learning environments is preceded by a valid risk assessment by the Centre, particularly identifying any protective clothing and equipment (PPE) that the student may require and any regulations applying to work with cattle. Students must be supplied with correctly fitting PPE prior to the undertaking of any of the practical activity.**

Centres delivering this learning programme in the context of cattle should pay particular attention to the risk assessment of sizes of student groups in relation to the number of supervisors available. A maximum group size of 8 students per supervisor is recommended.

The Health and Safety Executive (HSE) have a publication called “Your Essential Guide to Health and Safety in Agriculture” which gives comprehensive information about the health and safety aspects of working in agriculture. This can be downloaded from the following HSE website:

<http://www.hse.gov.uk/pubns/misc165.pdf>.

It should be noted in particular that children under the age of 13 years should not normally be allowed to enter cattle housing or handle cattle.

The HSE also provide a free download publication that allows farms to carry out their own self assessment. This can be found at the following address:

<http://www.hse.gov.uk/agriculture/assessment/download.htm>

Cattle husbandry routines that are undertaken or referred to should all fall within the Code of Recommendations for the Welfare of Livestock: Cattle. This document can be downloaded from the Scottish Executive website:

<http://www.scotland.gov.uk/Topics/Agriculture/animal-welfare/AnimalWelfare/Recommendations>

Students should gain an understanding in particular of the cattle that they are being asked to work with. The number of cattle kept should be sufficient to allow students to be involved with at least three or four different animals and to gain real experience of cattle husbandry routines.

### **In relation to Outcome 1 of the Unit:**

For gender (sex) identification, students should be shown where to look for differences in gender under the tail. They should also learn to identify the udder and the sheath. They should be able to identify where testicles would be situated in a bull and to point them out on a bull if one is available. They should not be expected to handle the bull to do this.

Opportunities for examining animals for health can be taken on a walk around the farmyard or even a field of quiet animals.

As many cattle holdings do not have a variety of breeds, it may be useful for students to become acquainted with common cattle breeds using photographic material. Only common cattle breeds should be examined. However, if the delivery Centre happens to have an unusual breed of cattle, it would be acceptable for students to become familiar with that breed too.

The identification of life stage in cattle is likely to lead to some discussion of different production systems and it would be advantageous to discuss the particular production system that the animals worked with are in. This should not be detailed, but should help to put the learning experience in context.

### **In relation to Outcomes 2 and 3 of the Unit:**

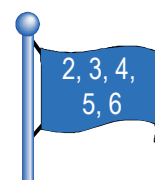
Students should be allowed to assist manual operations wherever possible but it would also be very advantageous for them to observe some of the mechanical operations in action where this occurs. The learning process should be about involving them in the real husbandry procedures that occur on that particular cattle holding. If procedures are less mechanical (such as on a croft), the student involvement is likely to be greater.



**It is important that the delivery Centre is aware that there may be some seasonal restrictions regarding the housing and feeding of cattle. It is likely to only be appropriate to assess this during the period of the year when cattle are housed (approx. October until March) and therefore receiving supplementary feeding besides grass. However, in some circumstances, cattle may be housed all year (e.g. calf units).**

It may be useful for all three of the Outcomes to have some classroom theoretical and interactive input prior to undertaking some of the practical activities. In Outcome 1, initial classroom activities introducing the category of animal, how to recognise gender, appropriate nomenclature for genders and age groups, signs of health, breeds, types and life stages relevant to cattle would all be useful. However, it is important to stress the level of this award and it is not appropriate to examine in detail any of these aspects. Classroom activity should be as interactive as possible and the activities in the student support notes may be useful additions to the experiential learning process.

## Employability Skills



### Signposting of Employability Skills in the Animal Husbandry: An Introduction (Cattle) Unit

Throughout the unit students will have the opportunity to develop the following employability skills. Where opportunities to integrate and embed these through the activities suggested in this pack, they are highlighted with a numbered flag as shown above. The numbers corresponding to each employability skill are:

1	Timekeeping and attendance	4	Working cooperatively with others	7	Health and safety awareness*
2	Understanding roles and responsibilities in the workplace	5	Awareness of efficient resource use	8	Review and self evaluation
3	Planning and preparing for work	6	Following Instructions*	9	Positive attitude to learning

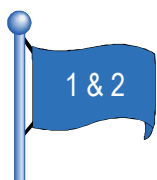
Achievement in employability skills marked with an asterisk\* will be clearly identified as a result of the evidence generated through the assessment activities for this Unit. There are opportunities in the Unit to develop the remaining skills identified, particularly if learning activity encompasses the following recommendations.

### Integrating the Content of the Employability Skills Unit and other generic employability skills

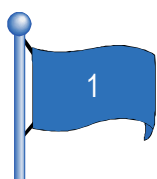
It is important to adopt a delivery approach of emphasising not only the vocational skills development but also the development of employability skills and attitudes in this Unit. This could be done by:

- setting particular start times for practical activities
- monitoring the students' ability to follow instructions
- setting incremental targets for students in terms of mock deadlines for given practical activities (once they have developed reasonable competence)
- monitoring the preparation and planning of the students for practical activities
- setting students a task as a group and allowing them to be responsible for the allocation of subsets of tasks to encourage team working
- encouraging students to reflect on their own and group performance regularly
- monitoring the safety awareness of the learners when carrying out tasks

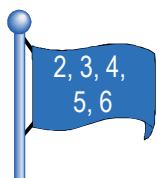
In relation to *Animal Husbandry (Cattle): An Introduction*, the following examples of learning activity may be appropriate. (Note that some of these activities require the student to have developed some familiarity with the vocational task and the work setting):



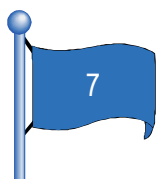
- Set a specific time when students are to be prepared for a given work task, wearing the appropriate PPE and armed with the appropriate tools or aids.



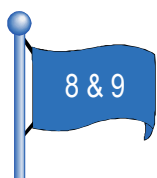
- Set a time target on a task that they have practised such as feeding a group of cattle



- Instruct a group of students on an overall activity such as bedding out a calf pen and allow the group to distribute related activities amongst themselves.

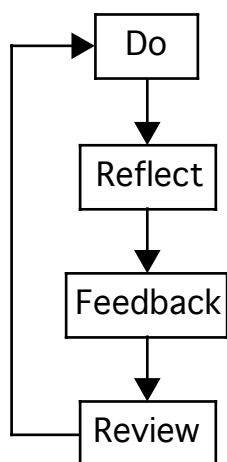


- Students could discuss the hazards for the tasks that they are about to undertake and how they can be minimised.



- Students could be encouraged to participate in self and peer review and evaluation of tasks undertaken.

As much of the activity in this course is practical, group-related and hands-on, it fits well with this simple review model.



*Review mode*

## Generating Evidence and Assessment Opportunities for Employability Skills

In addition to developing the student's employability skills throughout the delivery of the Unit, there are specific opportunities to generate evidence for assessment of employability skills. You should refer to the employability skills profile in the reference section at the front of this pack to familiarise yourself with these skills. You should also familiarise yourself with the National Assessment Bank (NAB) material for the Employability Unit.

There are opportunities to complete all parts the review sheets of the Employability Skills for Land-based Industries Unit (Outcomes 1 and 2) when carrying out tasks related to Outcome 2 and 3 of this Unit (feeding and cleaning animals). If course teams choose to adopt this method of assessment they should consider the following:

- Design the activity in a manner that will make it clear to the students that they have been given the opportunity to demonstrate all of the employability skills by beginning with a short briefing.
- Pay particular attention to the inclusion of awareness of efficient use of resources: choose an activity where the student has to, for example, place fresh straw in the pen or muck out a pen.

### Example

*"Today we are going to work in small groups and muck out these calf pens. You must:*

- *form groups*
- *decide what tools are required*
- *decide who is doing what between yourselves*
- *carry out your part of the activity*
- *tidy up after yourselves*
- *report back to [the tutor] when completed*
- *return to [the classroom] and complete section 1 of the review sheet and bring it to [the tutor] for their section to be completed*

*You'll be assisted with tasks when required and you can ask for help whenever you need it."*



Students should be briefed, prior to commencement of a planned task, that they will be assessed on the main employability skills identified in the review sheet which are:

- acceptable time keeping and attendance
- planning and preparing for work
- working co-operatively with others
- awareness of efficient resource use
- following instructions
- working safely

The students can then be briefed on the second section of the review sheet (strengths, weaknesses and action plan). They should then be asked to complete this prior to the next session planned with the tutor.

Almost all of the practical activities involved in the delivery of this Unit give the student the opportunity to complete the assessment of Outcome 3 of the *Employability for Land-based Industries* Unit. Carrying out simple risk assessment prior to practical activities is an excellent way to raise student safety awareness of tasks that they are about to undertake as suggested above and could become a regular feature of the delivery of all practical activity in this Unit. This would make the formal assessment activity familiar to the student, allowing several opportunities to complete the pro-forma assessment for Outcome 3 of the Employability Unit.

## Resources

### Resource Requirements for Animal Husbandry: An Introduction (Cattle)

#### Physical Resources:

- classroom or workroom facilities to deliver theory aspects of the course: should include presentation facility, whiteboard or flipcharts
- access to a site or sites where a group of cattle (either dairy or beef) are kept in a work setting or simulated work setting; (this should ideally be a working farm, croft or land-based college)
- there must be suitable and safe housing facilities for the cattle in accordance with the code of recommendations for the welfare of livestock cattle

As students are expected to help to prepare cattle housing and help to muck it out, centres need to give consideration to the time of year that this Unit is delivered, with most cattle only being housed in the Winter months.

#### Personal Protective Clothing and Equipment (PPE):

Centres should provide PPE for all students as deemed necessary in accordance with risk assessment of tasks to be undertaken. This is likely to include the following items:

- strong Wellingtons or other washable footwear
- overalls or warm, washable clothing
- waterproof jacket (of a standard that will not deteriorate on contact with disinfectants)
- waterproof over-trousers (of a standard that will not deteriorate on contact with disinfectants)
- waterproof gloves

#### Recommended Supplementary Learning Resources

The following websites have some useful information about cattle husbandry and agriculture in general:

<http://www.ca.courses-careers.com/agriculture.htm> information about careers in agriculture

<http://www.scotland.gov.uk/Topics/Agriculture> up to date information about agriculture in general

[www.ukagriculture.com/](http://www.ukagriculture.com/) interesting information and news about agriculture in general

[www.aboutscotland.com/jedforest/](http://www.aboutscotland.com/jedforest/) a farm with livestock near Jedburgh Scotland that does farm visits

[www.nfu.org.uk](http://www.nfu.org.uk) this website and the section about agriculture has some excellent information about working in farming

There are very few books currently in print relating to cattle husbandry that are pitched at a suitable level for this course but the following book may be useful:

Heather Smith Thomas (2005), *“Getting Started with Beef and Dairy Cattle”* Storey Books, US

- There are some Practical Activities Worksheets towards the end of the Student Support Section that may be of use to tutors to help consolidate practical learning carried out.
- There are additional quizzes to be found on the SFEU website [www.sfeu.ac.uk](http://www.sfeu.ac.uk). You may wish to download these and place them on your own Intranet for easy access.

## **Suggested Learning Programme for *Animal Husbandry: An Introduction (Cattle)* Unit**

Chunks of learning activity are suggested for this Unit. The order, grouping and timing of these sessions are at the discretion of individual centres and will depend on factors such as timetabling, class size etc. Classroom activities may be best grouped together and carried out before the practical activity. However, the emphasis is on practical experiential learning and not on didactic delivery of information and most of the allocated time should be dedicated to demonstration of correct practice with the students' involvement in assisting with daily husbandry routines. It may be appropriate to mix some of these activities with those found in the Animal Handling: an Introduction Unit.



**All practical activities should be preceded by an inspection of students to ensure the correct fitting of PPE.**

The following chunks may be appropriate:

<b>Class Based Activity – 8 hours max</b>	<b>Practical Activity – 32 hours minimum</b>
<p><i>The classroom sessions are designed to be short and interactive and they may be grouped together</i></p>	<p><i>Practical worksheets to support tasks are found at the end of the student support section</i></p>
<ul style="list-style-type: none"> <li>• introduction to animal husbandry: classroom activity</li> <li>• being employed to work with cattle: classroom activity</li> <li>• introduction to cattle: classroom activity</li> <li>• common terminology: short classroom activity</li> <li>• distinguishing between male and female cattle: short classroom activity</li> <li>• signs of health: interactive activity and feedback: short classroom activity</li> <li>• recognising health: classroom or farm-based activity</li> <li>• breeds: a classroom session</li> <li>• life stages: a classroom session or farm-based activity</li> <li>• safety induction for working on the cattle holding: a classroom activity</li> </ul>	<ul style="list-style-type: none"> <li>• practical sessions on examining various cattle to identify gender, health, breeds, life stages (<b>Practical worksheet 1</b>)</li> <li>• practical session introducing types of cattle housing, bedding material, tools and rules of cattle holding (<b>Practical worksheet 2</b>)</li> <li>• practical session demonstrating correct technique for mucking out cattle pens or yards</li> <li>• group discussion on hazards associated with mucking out and how to minimise the risk of these</li> <li>• set practical sessions for groups to help bed and possibly muck out given a generous timeframe (this could incorporate first review sheet of employability unit)</li> <li>• group/peer review of performance at bedding out (<b>Practical worksheet 3</b>)</li> <li>• set practical session for groups to help bed out given a slightly tighter timeframe</li> <li>• repeat above practical sessions to ensure competence (this could incorporate second review sheet of employability unit)</li> <li>• practical session introducing types of food, tools for feeding and rules for feeding.</li> <li>• group discussion on hazards associated with feeding cattle and how to minimise the risk of these</li> <li>• practical sessions of preparing feed and water under instruction and supervision. (<b>Practical worksheet 4</b>)</li> <li>• practical sessions of providing feed and water under instruction and supervision (this could incorporate third review sheet of employability unit)</li> <li>• summative assessment session for each Outcome when learner ready for assessment.</li> </ul>

## Learning and Teaching with Under 16s

Scotland's Colleges have made significant progress in meeting the needs of young learners. Our knowledge of the learning process has increased significantly and provides a range of strategies and approaches which gives us a clear steer on how lecturers can add to their skill repertoire. Lecturers can, and do, provide a stable learning environment where young students develop a sense of self-respect, learn from appropriate role models and see an opportunity to progress. There are basic enabling skills for practical application which can further develop the learning process for this group of students. So what are the characteristics of effective learning and teaching which will help to engage young learners?

### Ten ways to improve the learning process for Under 16s

(This list is not exhaustive!)

1. **Activate prior knowledge and learning** – ascertain what the learner knows already and teach accordingly. Young people do have life experience but it is more limited than adult learners and they may not always be aware of how it will assist them in their current learning.

**Tips** - Question and answer; Quick Quiz; Quick diagnostic assessment on computer; present key words from the course or unit and see how many they recognise or know something about.

2. **Tune learners into the Big Picture** – the lecturer knows the curriculum inside out and why each lesson follows a sequence, however the young learner does not have this information and is re-assured by being given the Big Picture.

**Tips** – Mind map or concept map; use visuals, for example wall displays of diagrams, photographs, flow charts; explain the learning outcomes in language they will understand; We Are Learning Today (WALT) targets and What I'm Looking For (WILF) targets; give clear and visible success criteria for tasks.

3. **Use Advance Organisers** – these are lists of the key concept words that are part of the course or unit.

**Tip** – Highlight on any text the concept words that you will be using; make a visible list and put it on display – concept words can be struck off or referred to as they occur (NB this helps with spelling and independent learning as they do not have to keep checking meaning); highlight essential learning and action points.

4. **Vary the teaching approaches.** The two main approaches are instructing and demonstrating, however try to provide opportunities to facilitate learning.

**Tips** – Ask students what they know now that they did not know before, or what they can do now they could not do before, at appropriate points in the lesson or teaching block; ensure there are problem solving activities that can be done individually or in groups; ask students to demonstrate what they have learned; use a range of question and answer techniques that allow participation and dialogue, eg. provide hints and cues so that they can arrive at answers themselves.

5. **Preview and review of learning.** This helps to embed previous learning and listening skills and provides another opportunity to elicit learner understanding. Consolidates and reinforces learning.

**Tips** – At the beginning of each lesson, or session, review previous learning and preview what is coming up; at the end of each lesson or session, review what has taken place and what will be focussed on next time – these can both be done through question and answer, quizzes and mind mapping activities.

6. **Language in the learning environment.** Do not assume that the language which is used in the learning environment is always understood by young learners, some words may be familiar but do not have the same meaning when used vocationally.

**Tips** - At appropriate points ask students what words mean; explore the various meanings of words to find out if they may have come across this language in another context; by looking at the structure and meaning of words there is an opportunity for dialogue about learning and to build vocabulary.

7. **Giving instructions in the learning environment.** This is one of the most difficult tasks a lecturer has to do whatever the curriculum area. With young learners this may have to be repeated several times.

**Tips** – Ask a student to repeat back what you have asked them to do before beginning a task; ask them to explain the task to one of their peers; use the KISS principle – Keep It Short and Simple so that they can absorb and process the information.

8. **Effective feedback.** Feedback is very important for the learner to assess their progress and to see how and what they can improve. Provide opportunities to engage in dialogue about the learning function of assessment – provide details of the learner's strengths and development needs either in written or spoken form. With younger learners identifying one or two areas for development is sufficient along with acknowledgement of what has been done well. Essentially, learners are helped by being given a **specific** explanation of how work can be improved. You can also use summarise assessment formatively, ie. as an opportunity to identify strengths, development needs and how to improve.

**Tips** – Ask students themselves to identify their own strengths and development needs – self evaluation; peer evaluation of work can be successful once they have been taught how to do it; the lecturer can produce a piece of work and ask students to assess it anonymously; have a discussion about the success criteria for the task and ensure the students are clear about them; allow learners to set criteria for success and then measure their achievements against these.

**9. Managing the learning behaviour.** Under 16s are coming into Scotland's Colleges and training establishments from largely structured and routine-driven environments in schools and early feedback from those undertaking Skills for Work courses indicates that they very much enjoy the different learning environment that colleges and other training providers offer. Remember though that these are still young learners. They will still expect lecturers to provide structure and routine and will perform best in a calm orderly learning environment. Young students will respond to firm, fair and consistent management. Such routines have to be established quickly and constantly reinforced.

**Tips** – Health and safety is non-negotiable and consequences of non-compliance with the regulations should be made clear and adhered to at all times; set out your expectations from day one and provide a consistent message; have clear beginnings, middles and endings for each session; be a positive role model for your students, i.e. be there before they are and manage the learners with respect; always deliver what you promise; build up good relationships and get to know the learners, make the curriculum interesting and stress the relevance of the learning; set up a positive behaviour management system. By following these guidelines you will build up two-way respect, which, while sometimes challenging to achieve, can be very powerful and work to everyone's benefit.

**10. Care and welfare issues.** School/college partnerships mean increasing numbers of young learners in college. Lecturers have to be aware of their professional responsibilities and mindful of young people's rights. However lecturers have rights too, in terms of feeling safe and secure in working with young people and there are basic steps staff can take to minimise risks. It is essential that colleges ensure that lecturers have a working knowledge of the Child Protection policies (local authority and college documentation) and to follow procedures and policies diligently. School/College Liaison Officers will be familiar with these documents and can provide support and advice. There are also training sessions on Child Protection available from SFEU (see below).

**Tips** – Avoid one-to-one situations with young students in a closed area; do not do or say anything that could be misinterpreted; if the opportunity arises, do some observation in schools to see and discuss how teachers use the guidelines for their own protection as well as the young person's.

Most young people are a delight to work with and they will positively enjoy the experience of learning in college. However, there will inevitably be some who are disengaged, disaffected and who have not yet had an opportunity to experience success. 'Skills for Work' is a unique educational initiative that young people can be motivated to buy into - you as the lecturer are key to the success of these programmes.



## **Skills for Work Workshops**

To take this 10 point plan forward and to add to it, you can attend one of SFEU's 'Get Skilled Up' half day workshops for lecturers delivering Skills for Work Courses, when we explore further the learning process and look at a range of specific teaching and learning techniques to use with the under 16 age group. To find out when the next event is visit our website [www.sfeu.ac.uk](http://www.sfeu.ac.uk) or contact the Learning Process team at SFEU on 01786 892000.

## **Child Protection Workshops**

These are run on a regular basis by staff at SFEU in Stirling and also in colleges. For more information on these workshops please contact members of the Access and Inclusion team at [www.sfeu.ac.uk](http://www.sfeu.ac.uk) or contact the team at SFEU on 01786 892000.

## **Student Support Section**

## Welcome to Animal Husbandry: Cattle

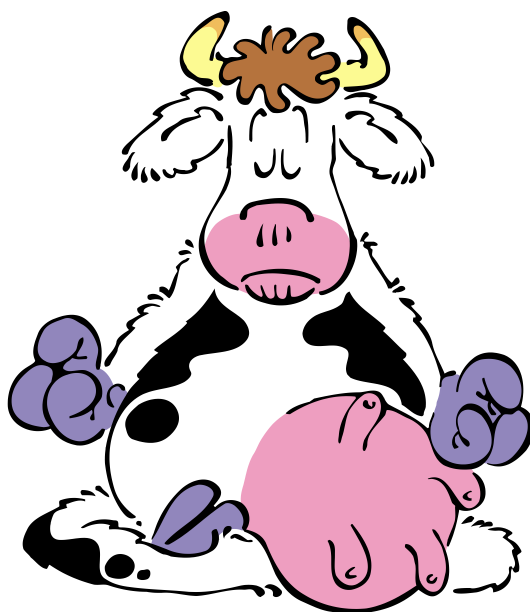
The notes that you'll be given as you progress through the course help you with the background knowledge for the skills that you will learn whilst on this course. You'll find that there are several activities and self-assessment tasks, often followed by some answers. In some parts, you'll be asked to think about things that you maybe don't know very much about yet but don't worry! These activities are just to make you think about everything you do instead of just rushing in there! They're not tests and the answers you're given here go into a lot more detail than you would be expected to come up with by yourselves.

This is a practical course where you'll be assessed mainly on your practical and employability skills. The notes and exercises you're given are to help you to understand the important aspects of cattle husbandry and to support your practical studies. Some words or phrases in the notes are in **bold** and underlined in blue. This is because they are words or phrases which are explained in the '**glossary**' (a list of words and their meanings) which your tutor will give you.

If you find yourself becoming very interested in cattle husbandry, you will find several web links and book references that you can look at. You can also go to the following web link, which will help you to find out how to take your interest further:

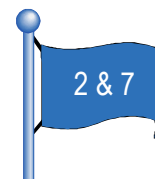
<http://www.afuturein.com/>

However, your tutors are there to support and help you. If you want to find out more - just ask!



## Cattle Husbandry

What is Cattle Husbandry all about?



Have a go at answering the following questions:

1. What do we mean by the term 'animal husbandry'?
2. What sort of activities do you think are needed to ensure that cattle are healthy and well cared for?
3. Why do we keep cattle in this country?
4. Why is health and safety so important when working with cattle?

5. What personal qualities will an employer be looking for in someone who is going to work with cattle – in other words, what kind of person would he or she be looking for?

6. Why is working with cattle not a '9-5' job?

## Answers

1. The dictionary definition of husbandry is 'careful management'. In terms of good animal husbandry it means that you are looking after them to ensure their health and well-being. You are caring for them appropriately.
2. Activities that ensure the health and welfare of cattle include:
  - ensuring that they have adequate food and water
  - ensuring that they are free from pain, injury, distress and fear
  - ensuring that they are kept in suitable conditions (if inside, they should be housed properly)
3. Cattle are kept in the UK mainly as part of a commercial production system. This may be an [intensive](#) system such as in many dairy and beef industries or it may be in a less intensive system such as a [croft](#). Your tutor will give you more information about the way the cattle that you are going to deal with are kept.
4. Health and Safety is important because:



- Cattle are very large animals and can be dangerous.
- The average cow weighs about 600kg, (probably at least 10 times as much as you do!)
- They are tame in the sense that they do not live wild, roaming the country but they are not domesticated like pets.
- They fear humans and they do not always behave predictably.

**You're being given the chance to work with cattle on this course: it is vital that you always follow instructions carefully.**

5. An employer is likely to expect you to be:

- hard-working
- caring about the health and well-being of the cattle
- willing to learn
- reliable: you turn up when you should - and on time!
- honest and trustworthy
- able to follow instructions
- aware of safety issues
- aware of your role and your responsibilities
- able to get along with everyone else and do your share
- careful that you don't waste things that cost money

Perhaps you thought of some more?

6. Working with cattle is not a 9-5 job. They need to be fed at the weekends, even on your birthday and Christmas when you were hoping for a 'lie-in'! Dairy cows have to be milked twice daily: some farms start the morning milking at 5am and do the evening milking at 7pm.

When you're participating in the activities of this Unit, you'll find out a bit more about the basics of cattle and you'll have plenty of practical opportunity to feed, water and bed them. This is all about finding out if working with cattle is for you.

## Basic Characteristics of Cattle



Figure 1: *A group of healthy beef cattle*

### Life Stages

It's important to be able to identify the particular life stage of an animal because this will affect how we feed and look after them. We also need to know the correct terminology for the various life stages of cattle.

- all cattle are [bovine](#) animals
- farmers will often refer to them as the [beasts](#)

### Adult Animals

- adult animals are those that are fully-grown
- [cow](#) is the word for an adult female animal (farmers do not refer to all of their animals as cows, but tend to call them 'beasts')
- cows normally are quite large with an obvious [udder](#)
- a [bull](#) is an entire (not castrated) adult male bovine animal
- bulls tend to be much larger than cows with huge thick necks and muscles visible on their bodies
- they become mature (stop growing and have reached puberty) at between 15-18 months of age.



## Young animals

- a young bovine is one between birth and 6 months old
- a young bovine is a [calf](#) until it is weaned from its mother's milk (in the case of beef cattle) or is digesting food normally (in the case of dairy cattle).
- a young male calf is called a bull calf
- a young female calf is called a heifer calf
- beef calves may stay with their mother until they are 6 - 9 months
- dairy calves are likely to be removed from their mother when as young as one day old.

## [Adolescent](#) Animals

- adolescent animals are those that are growing up
- [heifers](#) are adolescent female cattle
- [bullocks, stirks or steers](#) are terms used to describe young adolescent male [castrated](#) animals
- adolescent cattle can be recognised because they are smaller and less well developed
- fattening animals are likely to be slaughtered before they are 24 months old
- dairy heifers will become milking cows and often calve down at 2 years of age.

## Pregnant Animals

- when cows are pregnant they are said to be 'in-calf'
- when they give birth they are said to '[calve down](#)'
- cows are pregnant for approximately 9 months
- it is sometimes difficult to recognise pregnancy in a cow early on (the vet will diagnose this by doing ultrasound testing etc) but late on in pregnancy, the cow's abdomen may appear very wide and dropped.

## Extra Information

Dairy and beef cows are production animals: they are often pregnant and producing milk for the growing calf or for the milk lorry at the same time. They may stop milk production late in their pregnancy: this is called "[drying-off](#)".

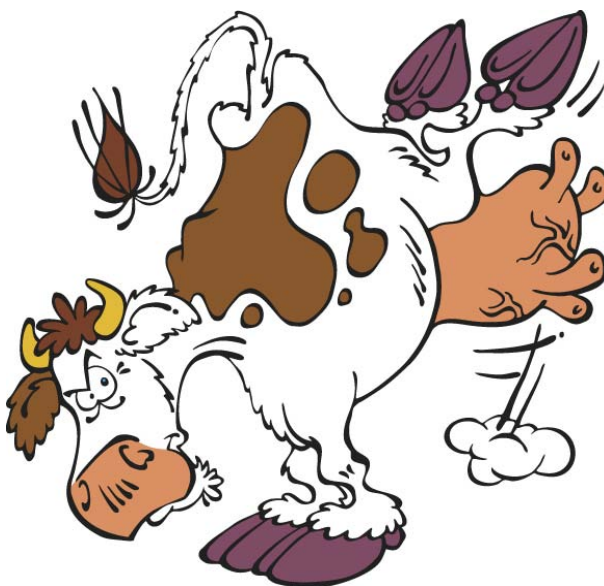
## [Lactating](#) Animals

- lactating cows are those that are producing milk for their calves or milk that is for human consumption
- lactating cows may have a large udder and a calf near by if she is a beef cow
- dairy cows that are lactating have very large udders and are milked regularly (normally twice per day).



**Safety Tip!**

Cows are very protective of their calves and extra care should be taken when dealing with lactating cows that have just had a calf.



 **Activity**

From the descriptions and information above, can you identify what life stage (using the correct terminology) the following animals fall in to?



a)

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b)

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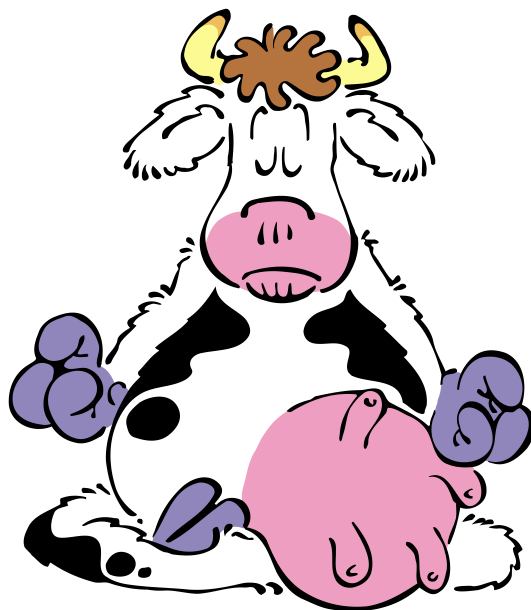


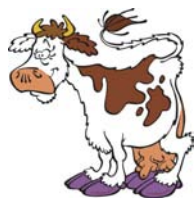
c)

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## **Answers**

- a) This is a lactating cow (an Ayrshire one). She has a very well-developed udder. You may have said she was pregnant because of the size of her abdomen - she may well be pregnant too.
- b) These are calves (Holstein-Friesian calves). They are small and 'gangly'.
- c) This is an adolescent bullock (a Charolais one). He is of medium size.





### How to tell Male from Female Bovines

- cows will normally have a visible udder if they have had a calf
- adult bulls are heavily muscled, with large broad heads, a visible [sheath](#) below their belly and visible testicles between their hind legs. The sheath is a protective skin guard for the male animal's penis.



Figure 2: *A bull's testicles viewed from the rear*

- bullocks will be smaller than adult male animals, less well muscled and have a visible sheath but no testicles





 **Activity**

Using the descriptions, can you identify the gender of the following three bovine animals?



**Answer**

- a) This is a bull: notice his large muscled body and neck. You can see he is male from his sheath too and you can just see his testicles. This is a Belgium Blue (breed) bull.
  
- b) This is a cow: She has a well-developed udder, is less muscular than a bull. If you looked under her tail, you would see her genitals there. She has no sheath. This is an Ayrshire (breed) cow.
  
- c) This is a bullock (or steer or stirk). He is less well muscled than the bull. You can see that he is male because of the sheath underneath him and if you looked behind him, you would notice that he has no testicles. This is a Charolais (breed) bullock.



## Signs of Health

We often instinctively know what a healthy animal is, but can you think of some signs that lead us to the conclusion that a beast is in a good state of health?

### Activity

List as many signs as you can think of that would indicate that a 'beast' is healthy.



## Answer

There are many things that you can look for to identify that a beast is healthy. Some of them don't even involve looking at the animal itself but rather examining his/her surroundings.

Here are some of the signs of health obvious from looking at the animal:



Figure 3: A healthy Ayrshire cow

## Signs of health

- the **coat** is shiny, clean and free from red/bald/sore areas or evidence of staining around the backend
- the **body** condition: well covered without being thin and bony (note that the hip bones of cattle normally stick out a little)
- the **eyes** are bright, without any discharge, films or white or dark spots over the eyes (cloudiness)
- the **gums** and conjunctivae (this is the pink bit on the inside of the eye) are a salmon pink colour
- moving freely with no signs of lameness
- normal **dung**: no obvious signs of diarrhoea ([scour](#)).

### Behavioural signs that indicate good health

- cattle appear content and alert, showing interest in what is going on with no evidence of stress
- [chewing the cud](#) (this when cattle regurgitate food from their stomachs and re-chew it to make it easier to digest) and eat happily
- coming forward to the feed troughs with the other cattle.



Figure 4: Some cows happily eating and chewing the cud

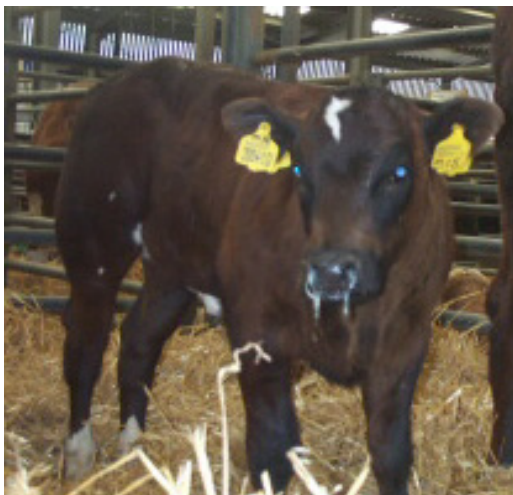


#### Top Tip!

Good husbandry means catching problems early: if you suspect a problem with any animal, always report it sooner rather than later.

#### Activity

This is not a healthy calf. But can you identify at least one feature from the appearance of this calf that helps you to recognise that it is not healthy?



## **Answer**

This calf appears to have a very snotty nose. A small amount of clear snot from the nose is normal but when it is thick and coloured, this is a sure sign of illness and help should be sought immediately.

### **Other signs of ill-health to look out for:**

- a cough or obvious heavy breathing
- excessive or abnormal looking discharge from their eyes or nose
- signs of injury (swellings, blood, wounds etc).

## Breeds

There are many breeds and recognised cross breeds of cattle throughout the world but it's more important that we become familiar with the common breeds and cross breeds used in the British beef and dairy industries.

Crossbreeds are particularly important because the British beef industry relies on the crossing of cattle to obtain the best quality of meat. You may want to find out more about cattle breeds of the world. Here is a good weblink that will provide links to various cattle breed societies:

<http://www.agritrading.net/news/cattleassociations.asp?catID=104>

The common dairy breeds (milk producing cows) in the UK include:

- the **Holstein-Friesian**: this is a large black and white cow with long legs and a fairly lean body frame
- the **Ayrshire** is one of the most traditional breeds of dairy cow in the UK. The Ayrshire is smaller than the Holstein-Friesian and is brown and white.
- the **Jersey**, although not so common, is a very traditional dairy breed in the UK; Jersey cows have brown coats with dark 'eyeliner' and a dark muzzle.

Common beef breeds (fattening cattle) in the UK include:

- the **Highland**: this is a red, rather hairy traditional beef breed with large horns
- the **Charolais**: this is a cream coloured, French breed that is common in the UK
- the **Aberdeen Angus**: this is relatively short, all-black breed, originating in Scotland



Figure 5: *Some crossbreed beef bullocks*

 **Activity**

From the descriptions, can you identify the breeds of cattle from the following pictures?

a)



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b)



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c)



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**Answer**

- a) These are Holstein-Friesian cattle.
- b) This is a Highland cow with her calf.
- c) This is an Ayrshire cow.



## Preparing Cattle Accommodation and Mucking Out

Cattle are normally all housed through the winter months in Scotland for several reasons:

- the grass doesn't grow and so their staple food is gone
- the fields tend to get very muddy with the cattle stomping around; (this is called poaching and it can affect grass growth in the future)
- they tend to get cold and muddy which is bad for their well-being (and will reduce their growth rate or milk production rate)

Cattle are housed under various systems depending on the type of cattle and the production system that they are part of.

- Cattle are normally housed as a group with the exception of calves which may be kept individually in pens or huts.
- On commercial farms, the preparation and mucking out of cattle housing must be part of a system that is labour saving and cost effective: systems are often mechanised, using tractors and other machinery. Hopefully you will see these machines in action.
- There are always manual tasks to be done and you may well be involved in the hosing out of cattle sheds or pens as part of this course.

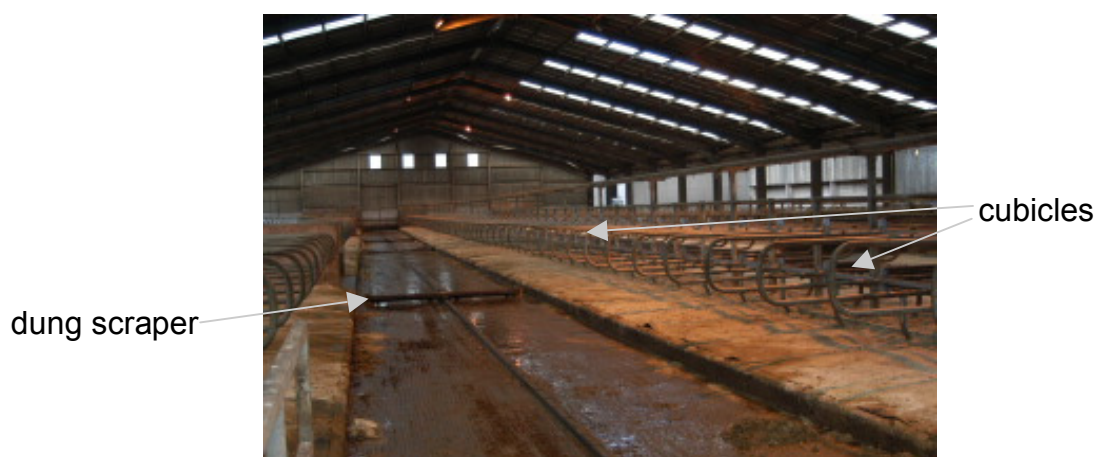


Figure 6: *Cubicle shed with automatic dung scraper*

Figure 6 shows a [cubicle](#) shed. This is a common way to house dairy cattle.

- Cows may lie in the individual cubicle or get up and walk around.
- They tend to dung and pass urine (together known as [slurry](#)) out into the passageway which is often scraped by an automatic scraper which passes through two to three times per day.

- Cubicles are often bedded with sawdust, chopped straw or sometimes rubber cow mats.
- The sheds are hosed thoroughly with pressure washers at regular intervals.



*Figure 7: Some cows tethered by halters in a cubicle shed: this type of housing is usually only seen at cattle shows*



*Figure 8: Some young cattle in a deep-littered straw yard or court*

*Figure 8 shows a **straw yard** or **court**.*

- this is a common way to house young cattle over the wintertime
- they are often [“deep-littered”](#) which means that clean straw is laid down on top of the dirty straw and the bed builds up before being mucked out when the cattle are turned out to grass in the springtime.





*Figure 9: A cattle court being scraped out after dung has been removed using a loader or forklift*

Straw yards are normally cleared out after the cattle are put out to grass in the springtime.



*Figure 10: Calves in calf huts*

Dairy calves are removed from their mothers when they are as young as a day old in most circumstances.

This makes the calves very open to infection and disease and so they are normally housed individually to help prevent the spread of disease.

Although the huts in *Figure 10* look quite chilly, it is better for calves to have plenty of airspace.

## Bedding

### Straw

Straw is the stalk of grain and so it is a bi-product of harvesting wheat, barley and oats. It sometimes comes in small square [bales](#), which can be handled by one or two people, but more often nowadays, it comes in large round bales, which need to be moved around by a tractor.

Straw can sometimes be dusty and contain harmful fungi. If it is very dusty, it is not good for you or the cattle.



#### Safety Tip!

You should always wear a facemask if you are working with dusty straw.

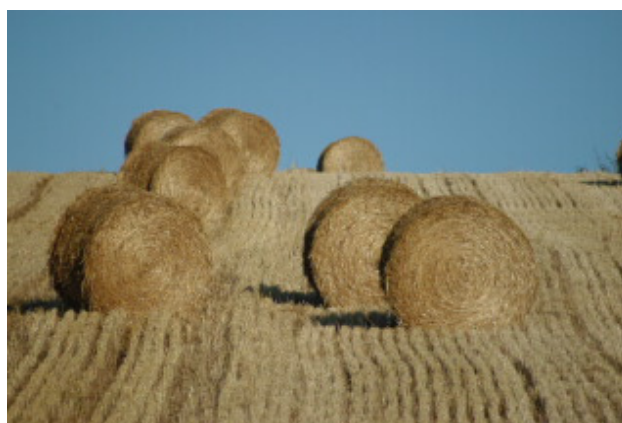


Figure 11: *Straw bales in a field*

### Sawdust

Sawdust is normally used to provide a light dust in the [milking parlour](#) for dairy cows or in the cubicles. It is rarely laid down thick enough to provide comfort for the animals but does prevent them from slipping on wet, concrete floors.

### Rubber Matting

Rubber mats are often placed in cubicle sheds. They are both hygienic, comfortable and help prevent cows from slipping.

There's no substitute for practice when preparing and mucking out beds. You'll be given a demonstration on how the bed should be prepared and mucked out and plenty of opportunity to practice!

## Slats

You won't be mucking out slatted sheds, but may come across them. These are sheds with floors that have gaps between them that allow the dung to pass through into a pit below. Slats are convenient but are not very comfortable for the animals.

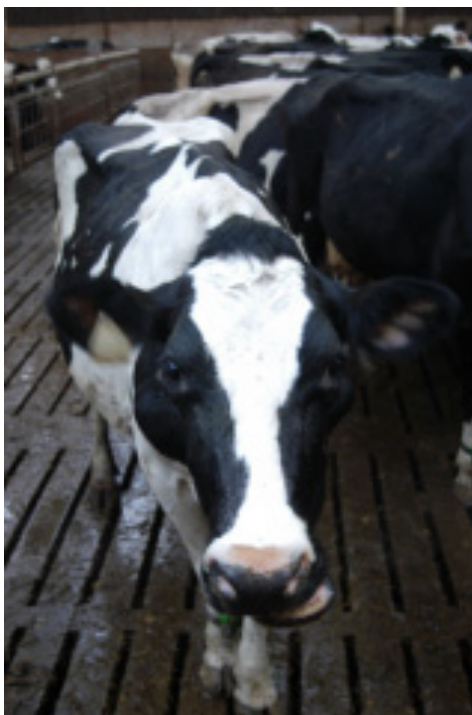


Figure 12: A dairy cow on 'slats'

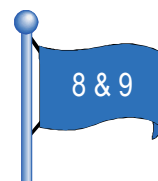


### Top tips to impress your tutor!

Things to think about:

- always turn up on time and be ready to start when your tutor tells you to
- always work co-operatively with your co-workers: share tasks out fairly
- always try to use bedding efficiently. You don't want to waste lots of straw - wasting money is one of the best ways to upset your boss! However, remember that you must balance this with the welfare of the animals - if animals are kept in poor conditions they will often become ill.
- always work safely: be correctly dressed, ready to work
- follow instructions carefully and ask about anything that you're unsure about

 **Activity**



Think about how things went when you mucked/ bedded out cattle accommodation for the first time:

I was good at:

I need to get better at:



## Feeding and Watering Cattle

- cattle are [ruminants](#).
- this means that they are vegetarians with four stomachs, one of which has been specially adapted to digest grass and other fibrous foods ([roughage](#)).
- this special stomach is called the [rumen](#). Cattle are more efficient fibre digesters than horses.
- their main food source is fresh grass in the summer months and preserved forms of grass during the winter.
- during summer, a dairy cow can eat up to 70 kilogrammes of grass, drinking 60 litres of water. She can produce 20 litres of milk per day.
- a beef cow will drink and eat less.

## Types of Roughage (preserved grass)

The main types of preserved grass are [silage](#) and [hay](#). This will be fed to cattle during the winter months when the grass has stopped growing.

Silage is pickled grass and tends to be wrapped in plastic or is made in a [silage clamp](#) which is a large concrete pit that is covered over.

The farmer will take sections of silage to feed the animals when they are housed through the winter months.

If the silage is coming out of a clamp, it is usually cut with a special piece of machinery known as a block cutter.



*block cutter*

It may then be fed by means of a mixer wagon that mixes the silage with concentrate feeds and spreads it out as shown below.



*mixer wagon*



*Figure 13: Some cows eating silage*

When silage is fed to cattle from bales, the plastic is removed and it is normally placed in a [ring-feeder](#) (like the one shown below)



*Figure 14: Some cattle eating silage at a ring feeder*

Hay is very dry and comes in bales (large round ones or smaller square ones, like the straw). It is a more traditional roughage food for cattle but is rarely used in large commercial farms today although small enterprises and crofts may still use hay.



*Figure 15: Large round bales of hay*



## Other Types of Cattle Feed

### Flaked Barley and Oats

Flaked barley and oats are cereals given to cattle that have a high-energy requirement because they are growing or lactating. They may be mixed with a mineral and vitamin supplement to balance the diet.



Figure 16: *Flaked barley*

### Cattle Cake

Cattle cake is a high energy food often fed to dairy cattle. It is made from oil seed rape, peas and soya beans. It may be balanced with vitamins and minerals.

### Vitamins and Minerals

Vitamins and minerals are supplementary nutrients added to food. They are necessary for healthy growth, repair and maintenance of the body.

### Straw

Unlike most of the other livestock, cattle are able to digest straw and some systems of production will feed straw to their cattle.

There is no substitute for practice when preparing and providing food. You'll be given a demonstration on how and when the feeds should be prepared and plenty of opportunity to practise.

Important tasks that you will be involved in include:

- cleaning food troughs ready for use
- distributing both roughage and concentrate food to cattle



### **Top tips to impress your tutor!**

Things to think about:

- always work safely: be correctly dressed, ready to work; do not muck about
- always work co-operatively with your co-workers: share tasks out fairly
- always feed exactly what you are told: if you are unsure then ask!
- follow instructions carefully and ask about anything that you are unsure about



## Watering Cattle

It is vital that all cattle have access to a fresh, clean supply of water at all times. This may be provided in buckets or, much more likely, in automatic water drinkers or troughs. In fields, cattle may also get water from a natural water source such as a stream or spring.

Cattle may drink up to 70 litres of water per day (depending on their size, if they are lactating, the weather, the amount of wet feed they are eating etc). Think about a 2-litre bottle of juice and you'll appreciate just how much they drink!

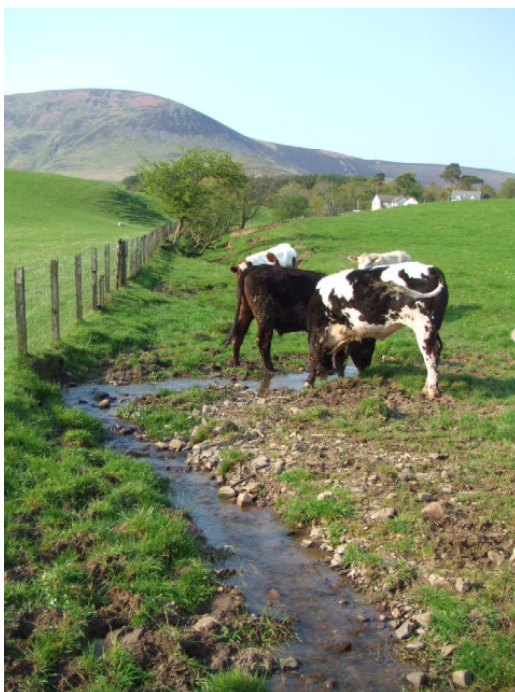
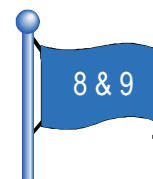


Figure 17: *Cattle drinking from a natural water source*



Figure 18: *A field water trough*

 **Self-assessment**



Now that you've had a chance to practise the various skills and found out more about cattle husbandry, you can have a go at answering these questions.

Tick the correct box.

1. What do we call a female cow that has not had a calf?	
a) a heifer	<input type="checkbox"/>
b) a stirk	<input type="checkbox"/>
c) a bullock	<input type="checkbox"/>
d) a bull	<input type="checkbox"/>

2. Which one of the following breeds would not be considered a dairy breed?	
a) Ayrshire	<input type="checkbox"/>
b) Holstein-Friesian	<input type="checkbox"/>
c) Highland	<input type="checkbox"/>
d) Jersey	<input type="checkbox"/>

3. Chewing the cud is when cattle:	
a) grind their teeth	<input type="checkbox"/>
b) regurgitate food and re-chew it	<input type="checkbox"/>
c) relax and sleep	<input type="checkbox"/>
d) pass dung	<input type="checkbox"/>

4. Which of the following is not a sign of good health in cattle?	
a) shiny coat	<input type="checkbox"/>
b) snotty nose	<input type="checkbox"/>
c) chewing the cud	<input type="checkbox"/>
d) bright eyes	<input type="checkbox"/>

5. A cow can be pregnant and producing milk at the same time:	
a) True	
b) False	

6. Lactation is:	
a) the correct term for a pregnant cow	
b) the production of milk	
c) the term for a young male animal	
d) the correct term for the milking parlour	

7. Straw can be a food source and a bedding material for cattle:	
a) True	
b) False	

8. Pickled preserved grass is called:	
a) hay	
b) ryegrass	
c) straw	
d) silage	

9. A cow is pregnant for around:	
a) 12 months	
b) 4 months	
c) 9 months	
d) 9 weeks	

10. A dairy cow in early lactation may drink as much as:	
a) 70 litres per day	
b) 7 litres per day	
c) 17 pints per day	
d) 17 litres per day	

How did it go?

Check your answers against the grid on the next page.

## Answers

Question	Correct answer
1	a) Heifer
2	c) Highland
3	b) regurgitate food and re-chew it
4	b) snotty nose
5	b) the production of milk
6	a) True
7	a) True
8	d) silage
9	c) 9 months
10	a) 70 litres per day



You may also want to have a go at the PowerPoint quiz about cattle husbandry, located on the SFEU website [www.sfeu.ac.uk](http://www.sfeu.ac.uk)

## **Practical Activities Worksheets**

This section contains practical worksheets that may be useful in getting students to reflect on what they've learned in practical activities.

## Practical Worksheet 1

Name: ..... Date: .....

**You've been looking at a group of cattle today. Answer the following questions on what you found out about them.**

	<b>Answer</b>
1. Were they dairy or beef cattle?	
2. What sort of age group were they (young, adolescent, adult, lactating or pregnant)?	
3. Did they all seem healthy?	
4. List 5 signs of health that you noticed in the healthy ones.	a) b) c) d) e)
5. If there were any that did not appear healthy, what signs made you think that they were not healthy?	
6. Were they all the same sex?	
7. List the breeds or cross breeds of the cattle that you saw.	

## Practical Worksheet 2

Name: ..... Date: .....

You were looking at how cattle were kept and the equipment that is used in order to keep them housed and fed. Answer the following questions on today's activities.

	Answer
1. What sort of housing were these cattle kept in?	
2. What sort of bedding did they have?	
3. What are the routine tasks needed to keep the cattle comfortable in this housing system?	
4. What tools and equipment are needed to bed the cattle?	
5. Do these cattle stay in this type of housing throughout the year?	
6. If the answer to the above question is no, then what happens to them next and when?	
7. List 3 rules that you have been asked to follow when working with these cattle.	a)  b)  c)



### Practical Worksheet 3

Name: ..... Date: .....

**You've been involved in cleaning and setting up some cattle housing today. Answer these questions:**

	<b>Answer</b>
1. What type of cattle housing were you involved in bedding today?	
2. Briefly describe the tasks that you helped with in bedding the cattle.	
3. Briefly explain what you did to help, including any tools that you used.	
4. Were there any problems? If the answer is yes, explain briefly what happened.	
5. List two safety rules that you had to follow in order to carry out this task.	a)  b)
6. Is there anything that you would do the next time you do this that might make it easier and more efficient?	
7. How often does this task have to be done?	

### Practical Worksheet 4

Name: ..... Date: .....

You have been involved in feeding and watering cattle today. Answer the following questions:

	Answer
1. What type of cattle were you feeding today?	
2. Briefly explain what you did to help, including any equipment that you used.	
3. Were there any problems? If the answer is yes, explain briefly what happened.	
4. List two safety rules that you had to follow in order to carry out this task.	a)  b)
5. Is there anything that you would do the next time you do this that might make it easier and more efficient?	
6. How often does this task have to be done?	

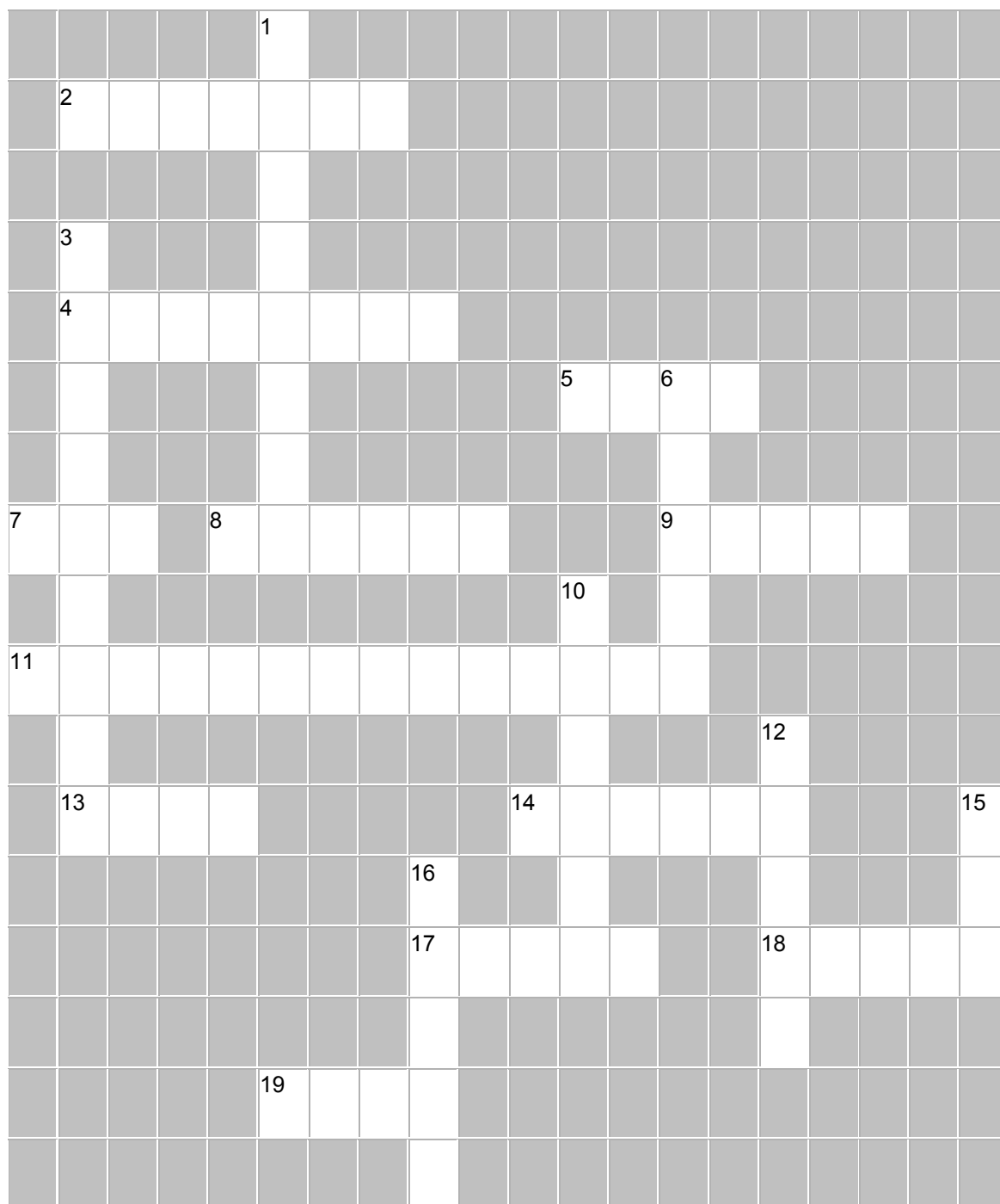
### Practical assessment checklist

This checklist will help you to understand what your tutor will be looking for when you're doing the practical assessments in this Unit. Use this checklist to think about whether you are doing all these things when you are practising for the assessment tasks and to work out what you need to improve on.

Can I:	Yes/No	Things I need to work on or get help with
<ul style="list-style-type: none"> <li>demonstrate that I know how to tell the difference between male and female cattle</li> </ul>		
<ul style="list-style-type: none"> <li>identify 5 signs of health from looking at cattle</li> </ul>		
<ul style="list-style-type: none"> <li>identify 2 common breeds or cross breeds of cattle from the ones that I've learned about</li> </ul>		
<ul style="list-style-type: none"> <li>recognise young, adolescent, adult or lactating cattle by looking at them</li> </ul>		
<ul style="list-style-type: none"> <li>help to muck out a calf pen</li> </ul>		
<ul style="list-style-type: none"> <li>help to bed out a cattle shed or calf pen</li> </ul>		
<ul style="list-style-type: none"> <li>prepare feeds for cattle (including removing the strings/wrapping from silage/hay)</li> </ul>		
<ul style="list-style-type: none"> <li>help to give feeds and water to cattle</li> </ul>		
<ul style="list-style-type: none"> <li>carry out all of these tasks safely</li> </ul>		

## Further Revision

### Cattle Husbandry: Crossword



**Across:**

- 2** An adolescent male, neutered bovine animal, also known as a stirk (7)
- 4** A type of dairy cow that is brown and white (8)
- 5** The number of compartments that a cow has to her stomach (4)
- 7** Preserved grass (3)
- 8** A young female cow that has not yet had a calf(6)
- 9** The types of cow that are kept mainly for the production of milk (5)
- 11** Where dairy cows are taken to be milked (7,7)
- 13** The number of months that a cow is pregnant for (4)
- 14** Pickled preserved grass (6)
- 17** The compartment of the cow's stomach where fibre is digested (5)
- 18** The stalks of grain, used as bedding material (5)
- 19** A young bovine animal (4)

**Down:**

- 1** The fibre part of cattle diets. (8)
- 3** The life stage where a cow produces milk (9)
- 6** Where the milking machine is attached to the cow (5)
- 10** A word to describe an animal that is of the species that cattle are (6)
- 12** A farmer's term for any bovine animal on the farm (5)
- 15** A female bovine animal that has had a calf (3)
- 16** A small community farm, often to be found in the Highland and Island areas of Scotland (5)

### Cattle Husbandry

#### Crossword Solution

					<sup>1</sup> R														
	<sup>2</sup> B	U	L	L	O	C	K												
					U														
	<sup>3</sup> L				G														
	<sup>4</sup> A	Y	R	S	H	I	R	E											
	C				A					<sup>5</sup> F	<sup>6</sup> O	U	R						
	T				G							D							
<sup>7</sup> H	A	Y		<sup>8</sup> H	E	I	F	E	R			<sup>9</sup> D	A	I	R	Y			
	T									<sup>10</sup> B	E								
<sup>11</sup> M	I	L	K	I	N	G	P	A	R	L	O	U	R						
	O									V				<sup>12</sup> B					
	<sup>13</sup> N	I	N	E						<sup>14</sup> S	I	L	A	G	E			<sup>15</sup> C	
									<sup>16</sup> C			N			A				O
									<sup>17</sup> R	U	M	E	N		<sup>18</sup> S	T	R	A	W
									O						T				
					<sup>19</sup> C	A	L	F											
								T											

## **Glossary of Terms**

<b>Adolescent</b>	Growing up: between young and adult
<b>Bales</b>	A package of hay or straw usually made by a machine and tied up with string called 'baler twine', or plastic netting.
<b>Beast</b>	All cattle on the farm: the farmer will often call them 'beasts'
<b>Beef cow</b>	A cow that is being kept for the purpose of raising beef calves. She will not be milked to produce milk that we drink.
<b>Bovine</b>	About cattle, or an animal of that species: Cows are female 'bovine' animals
<b>Bull</b>	Male bovine animal that has testicles (is entire)
<b>Bullock</b>	Male bovine animal that has been castrated (testicles removed) (See also Stirk and Steer)
<b>Byre</b>	An old-fashioned way of housing dairy cows: they would be permanently chained up in the byre through the winter months
<b>Calf</b>	A young bovine animal up until weaning or until they are digesting feed properly
<b>Calve down</b>	To give birth (for cows only)
<b>Castrated</b>	A male animal that has had its testicles removed (done to most fattening cattle)
<b>Chewing the cud</b>	Regurgitating food to re-chew. Part of the normal digestive process of cattle.
<b>Cow</b>	Female bovine animals

<b>Croft</b>	A small farm, normally in areas of the Highland and Islands where less intensive farming takes place on a community basis
<b>Cubicles</b>	Small partitioned spaces where dairy cows (usually) will rest in. This is a modern system of housing dairy cows. The cows may wander between cubicles in the 'cubicle shed'.
<b>Dairy cow</b>	A cow that is being kept for the purpose of milk production for human consumption. The calves produced from a dairy cow may become milking cows too (if they are female) or they may be fattened if male.
<b>Deep-litter</b>	A system of putting clean bedding on top of dirty bedding. The bed will build up and be mucked out when cattle are turned out in the springtime.
<b>Drying-off</b>	When the farmer stops drawing milk from a dairy cow before she calves down
<b>Hay</b>	A preserved form of grass. A less common foodstuff for cattle in intensive systems.
<b>Heifer</b>	A female cow that has not yet had a calf
<b>Husbandry</b>	Care to ensure the health and well-being
<b>Intensive</b>	Intensive farming systems are those where the number of animals is greater than can be supported just by the land of the farm. This means that extra feeding and work is required to maintain the welfare of the animals.
<b>Lactation (lactating)</b>	The life stage when milk is being produced (cows only)
<b>Milking Parlour</b>	Where cows are taken to be milked. The milk is then collected in a bulk tank and eventually ends up on our breakfast cereal!
<b>Production system</b>	This is the commercial system of rearing animals that the farmer uses. It may be intensive, which means that the farmer is rearing lots of animals in a relatively small amount of land or it may be more extensive.



<b>Ring Feeder</b>	A round metal holder for placing round bales of silage in. Used to feed cattle inside and outside.
<b>Roughage</b>	The fibre part of cattle diet, which is essential for them. This may be grass, silage, straw or hay.
<b>Rumen</b>	This is the large compartment of the bovine stomach (of which there are four), where fibre is digested
<b>Ruminant</b>	An animal that has a rumen. They also have no top teeth at the front!
<b>Scour</b>	Scour is the name given to diarrhoea in cattle. It is a common problem, particularly in calves.
<b>Sheath</b>	The protective outer skin that covers a male animal's penis.
<b>Silage</b>	Pickled grass often fed to cattle. May be wrapped in plastic or stored in a clamp which is a large concrete pit.
<b>Slurry</b>	The waste product of cattle made up of dung (faeces) and urine mixed together. It may be kept in a midden (dung heap) or a slurry tank. It will be recycled on to the fields.
<b>Steer</b>	Male bovine animal that has been castrated (testicles removed)
<b>Stirk</b>	Male bovine animal that has been castrated (testicles removed)
<b>Stockperson</b>	Someone who looks after livestock (usually cattle and sheep) on a farm or croft.
<b>Straw</b>	The stalk of cereals such as barley or wheat. Used as bedding and also fed to some cattle.
<b>Udder</b>	The mammary glands of the cow. The cow's udder has 4 teats.
<b>Wean</b>	To remove the young animal from its mother's milk or from pale-fed milk (in the case of dairy calves).