



NQF Level: 2

US No: 116117

# Facilitator Guide

## Primary Agriculture

# Evaluate External Animal Anatomy and Morphology



Facilitator: .....

Company: .....

Commodity: ..... Date: .....

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agriculture

Department:  
Agriculture  
REPUBLIC OF SOUTH AFRICA



## Before you get started...

Dear Facilitator,

This Facilitator Guide (together with the relevant Learner Guide) is aimed at facilitators who will be assisting learners wishing to complete the following unit standard:

<b>Title:</b> Evaluate external animal anatomy and morphology
<b>US No:</b> 116117 <b>NQF Level:</b> 2 <b>Credits:</b> 5

This guide contains all necessary facilitation instructions to ensure that learners will attain the expected competencies required by the above-mentioned unit standard. This guide is designed to be used during the presentation of a learning session based on this unit standard. The full unit standard is attached at the end of this guide as well as at the end of the relevant Learner Guide. Learners are advised to read the unit standard at their time. Please discuss the unit standard with the learners to ensure that they understand what is expected from them to achieve the outcomes of the unit standard.

This unit standard is one of the building blocks in the qualifications listed below. Please mark the qualification you are currently facilitating, because that will be determined by the context of application:

Title	ID Number	NQF Level	Credits	Mark
National Certificate in Plant Production	48975	2	120	<input type="checkbox"/>
National Certificate in Animal Production	48976	2	120	<input type="checkbox"/>
National Certificate in Mixed Farming Systems	48977	2	120	<input type="checkbox"/>

Please mark the learning program the learners are enrolled in:

Are you enrolled in a:	Y	N
Learnership?	<input type="checkbox"/>	<input type="checkbox"/>
Skills Program?	<input type="checkbox"/>	<input type="checkbox"/>
Short Course?	<input type="checkbox"/>	<input type="checkbox"/>

**Note to Facilitator:**

If you are presenting this module as part of a full qualification or learnership, please ensure that you have familiarised yourself with the content of the qualification.

Please explain the above concepts to the learner.

There are four guides, namely the Learner Guide, the Learner Workbook, the Assessor Guide and the Facilitator Guide. These guides have been developed to address specific aspects of the learning experience. You therefore need to use these guides complementally to one another.

**Make this an enjoyable learning experience!**

## Context of Application ...

Primary Agriculture is a diverse sector and a wide range of commodities is being produced for both national and international market. Each commodity has its own production requirements and practices. You will be facilitating the learning process within a specific context where a specific agricultural commodity is being produced. The learning material has been written in a **generic** manner, as it is aimed to be available on national level and should be relevant to be applied within a variety of commodities. It is therefore inclusive of all agricultural commodities and crop in this field. Therefore, the examples that are being used in the materials may not always be applicable to your specific community, commodity, environment or region.

This presents you, the facilitator, with the challenge to **contextualise** the learning material. It is imperative that you, the Facilitator and Assessor interpret and present activities, case studies and projects related to the material in such a way that learners can easily identify and apply their knowledge within their own context. This will require from you to add examples of crop, which are applicable to the community or farm. Learners must be guided with examples from their own communities, commodities, environment or regions. This should be done by complementing the learning material with:

- Examples relevant to the commodity,
- Including commodity specific requirements,
- Including operating procedures of the farm,
- Including agricultural practice specific requirements,
- Agricultural markets,
- Guiding learners to write these specifics down in the learning guide, etc.

**The contextualisation of the learning material is a very important step in preparing for and facilitating the learning experience and enough time and effort should be put into this exercise.**

According to the qualifications mentioned on page 2, this module could be contextualised to fit the following groups of commodities:

Plant Production	Animal Production	
<ul style="list-style-type: none"> <li>• Organic production,</li> <li>• Hydroponic production,</li> <li>• Perma-culture production,</li> <li>• Agronomy,</li> <li>• Horticulture,</li> <li>• Natural resources harvesting.</li> </ul>	<ul style="list-style-type: none"> <li>• Small stock production,</li> <li>• Large stock production,</li> <li>• Dairy production,</li> <li>• Pig production,</li> <li>• Poultry production,</li> <li>• Game,</li> <li>• Aqua / mari culture,</li> <li>• Commercial insects</li> <li>• Animal fibres harvesting,</li> <li>• Bee keeping,</li> </ul>	<ul style="list-style-type: none"> <li>• Natural resources harvesting,</li> <li>• Organic production,</li> <li>• Perma-culture production,</li> <li>• Eco/Agri Tourism,</li> <li>• Agro Chemicals,</li> <li>• Horse Breeding,</li> <li>• Etc.</li> </ul>



# What & How will you be Facilitating?

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## The Learning Experience...

### On completion of this unit standard, learners will be able to:

- ◆ Differentiate between animals with respect to their internal and external anatomical systems and morphology.
- ◆ Determine whether abnormalities in anatomical characteristics exist.
- ◆ Gain specific knowledge and skills in animal anatomy and physiology.
- ◆ Be able to identify and name various levels of the standard nomenclature of the animal kingdom.
- ◆ Be able to identify and understand the names and purposes of the external divisions or parts of animals and identify and evaluate gross abnormalities
- Be able to evaluate external animal anatomy and morphology
- ◆ Be able to identify and describe the lifecycle of a specific animal.

### Learners will also gain basic knowledge of:

- ◆ Biological names, concepts and terminology.
- ◆ Various applicable external characteristics and properties of animals and their components.
- ◆ Various applicable sensory cues regarding gross abnormalities in animals.
- ◆ Various applicable abnormalities in animals and their probable causes.
- ◆ Actions to be performed in the event of the perception of various sensory cues in the external anatomy and physiology of animals.
- ◆ The appropriate procedures and codes of practice regarding the handling and evaluation of animals.
- ◆ Basic technical drawing or sketching or verbal communications techniques.
- ◆ The effect of the identification of gross abnormalities on the well being of the animal.
- ◆ Theory regarding the basic composition and structure of various external and internal anatomical systems.

### Learning Assumed to be in Place:

- ◆ NQF 1: Unit Standard 116173 Basic Animal anatomy and Morphology.



Remember to do a diagnostic assessment of the learner's prior learning and ensure that they are starting at the correct level.

# Evaluate External Animal anatomy and Morphology An Introduction

In NQF 1: Unit Standard 116173 you learned to identify the class, species and type of animal according to several criteria under supervision. You also learned to identify and name the components of internal and external anatomical features of animals. and you learned to describe an animal's life cycle.

A deep understanding of the anatomy of animals assists the farmer to identify abnormalities in anatomy. Where defects or abnormalities in domesticated animals occur, production cannot be at its best. The learner will learn to be able to conduct a post mortem and be able to, at a basic level, determine the animal's cause of death.

This unit standard is about observing animals closely. Spend time studying every single part of their bodies. This is a crucial element to being a good farmer. A farmer knows his animals. He knows how they move, whether they have sore feet and whether their udders are healthy. Knowing these things and being observant is the best way to solve any problems before too much damage is done

If learners are to be able to comprehend that different domesticated (or wild) species have substantial anatomical differences that will influence their nutrition, health, and care it is important that they begin to recognize those anatomical and morphological characteristics that differentiates one animal specie from another. The best way to assist in this understanding is the basic knowledge of the taxonomic system. More about this in Session 1. The learner must be able to identify and name the various levels of the standard nomenclature of the animal kingdom.

The way that one domestic animal differs from another will impact on how it is fed and cared for. For example: one cannot expect good production if you feed meat to a herbivore. What makes the one animal a herbivore and the other a carnivore? When learners are encouraged to look for and find these differences in animal species, they will also start to comprehend what constitutes "normal" and healthy versus "abnormal" and defective anatomy. More about this in Session 2.

To effectively communicate in an animal production system, learners need to be aware of the words associated with different anatomical features. Without being able to use the correct words they will not be able to communicate properly with a manager, an owner, a vet or an extension officer. There is, for example, a big difference in the assistance required from a vet when an "udder" is injured, to when a "hoof" is injured. Session 3 invites learners to learn the correct names for anatomical features and allows for practical assignments where anatomy is studied first hand in a dissection.

Knowing that anatomical features help to differentiate between animals the study of the life cycle of simple to more complex forms of animal life becomes quite interesting. Learners will be encouraged to do some self-study on this aspect in Session 4.

# Learning Program Time Frames

	Total time allocated (hours)	Theoretical learning time allocated (hours)	Practical learning time allocated (hours)	Activities to be completed
<b>Complete Program (including summative assessment)</b>	50 hours	19 hours	31 hours	7 practical activities
<b>Learner Orientation and "Ice Breaker"</b>	1 hour	30 minutes	30 minutes	N/A
<b>Purpose, Introduction and Learner Directions</b>	1 hour	30 minutes	30 minutes	N/A
<b>Session 1</b>	5 hours	5 hours	N/A	N/A
<b>Session 2</b>	10 hours	3 hours	7 hours	1 – 4
<b>Session 3</b>	11 hours	3 hours	8 hours	5 – 6
<b>Session 4</b>	10 hours	3 hours	7 hours	7
<b>Preparation for Assessment &amp; revision</b>	12 hours	4 hours	8 hours	N/A

## Tips for level of learning



Remember the following before you get started:

***This unit standard is aimed at level 2 learners.***

- ◆ A typical level 2 learner might be exposed to the world of work through this learning program for the first time.
- ◆ Explain concepts and define words in a simple, clear and concise method throughout the learning program to help the learner where possible.
- ◆ Take special care to facilitate for ALL learners. Allow them opportunities to share experiences, prior knowledge, translate into their mother tongue for each other and enjoy the learning process.
- ◆ The examples given in this resource guide might be for a different geographical area or commodity to what the learner is exposed to – please adapt your examples accordingly.



## Tips for the Facilitator



### Session 1

#### Theory

A lecture where questions are encouraged to facilitate understanding of the concept of taxonomy should be presented here.

### Session 2

#### Practical

Much of Session 2 comprises familiarisation of the classification of domestic animals based on anatomical differences. Different "game-like" activities will be done. Learners should be encouraged to question obvious and some non-obvious differences between domestic animals to understand their differences in class facilitation.

### Session 3

#### Practical

Learners need to be provided access to resources depicting animal anatomy. This can be through magazines, photos etc. Furthermore, an outing must be organised by the facilitator where a dissection of an animal is done with an experienced veterinary surgeon facilitation.

### Session 4

#### Theory

#### Practical

This is an activity where learners need to refer to library or internet resources to complete their tasks.

## Facilitator's Checklist & Training Aids

### Learner support strategies:

Learners are supplied with all resources and aids as required by the programme – including:

- Objects & devices such as equipment, protective clothing, safety gear, etc.
- Learner Guides and Learner Workbook
- Visual aids, etc.

Use this checklist below during your preparation to ensure that you have all the equipment, documents and training aids for a successful session.

Preparation:	Yes	No
<b>Qualification Knowledge</b> – I have familiarised myself with the content of the applicable qualification		
<b>Unit Standard Knowledge</b> – I have familiarised myself with the content of all aspects of the applicable unit standard		
<b>Content Knowledge</b> – I have sufficient knowledge of the content to enable me to facilitate with ease		
<b>Application knowledge</b> – I understand the programme matrix & have prepared for programme delivery accordingly		
<b>Contextualisation</b> – I have included information which is specific to the commodity and practices related to the commodity		



# Contextualisation of Content!

Go through this module and indicate what specific **information** / **activities** / **examples** should be included in this module?

Contextualisation	
<ul style="list-style-type: none"> <li>▪ Commodity specific?</li> </ul>	
<ul style="list-style-type: none"> <li>▪ Operating procedures of the farm?</li> </ul>	
<ul style="list-style-type: none"> <li>▪ Agricultural practices?</li> </ul>	
<ul style="list-style-type: none"> <li>▪ Agricultural markets?</li> </ul>	



**Session**

# 2 External characteristic composition and the purpose thereof in the different classes of animals

**Learner Guide:  
Page 14**

*After completing this session, the learner should be able to:*  
**SO 2: Identify and understand the names and purposes of the external divisions or parts of animals and identify and evaluate gross abnormalities.**

Concept (SO 2)	Time frame	Activities related to the concept
Animal body parts are identified and demonstrated pictorially, practically or diagrammatically.	10 hours	Activities 1 – 4
Gross abnormalities and their possible causes are identified.		
The purpose of animal body parts are identified and demonstrated pictorially, practically or diagrammatically.		



**Please allow learners to complete Activity 1**

Type of activity	Resources
<b>1. Divide Learners in groups.</b>	Learning material, pictures of various animal species and "Puzzle" provided as Annex A.
<b>Instructions to give to the learners</b>	
<ul style="list-style-type: none"> <li>◆ Study the scientific classification of farm animals</li> <li>◆ Group the animals with the same Phylum, class, order, family and genus together.</li> <li>◆ Discuss and write down the reasons why some of the animals have the same Phylum, class, order or family.</li> <li>◆ Answer a few questions in the form of a puzzle where terms are matched.</li> </ul>	
<b>Conclusions</b>	
Learners must demonstrate abilities as indicated in the relevant assessment criteria.	



**Please allow learners to complete Activity 2**

Type of activity	Resources
<b>2. Group work</b>	Learning material, pictures of various animal species. This activity should be undertaken as a game or competition. Maybe learners come up with new ways of differentiating between animals, or the first group to finish the exercise could be the winner.
<b>Instructions to give to the learners</b>	
Let the class divide into at least two groups of learners. Give them a few domesticated animals and let them work out the rough classification by grouping those animals that they feel are in the same Phylum then those that are in the same class and order. They can even try to put them in the same family. At the end of the session let them discuss their classification among the group. Let them explain the reasons of their different groupings in the classification among themselves.	
<b>Conclusions</b>	
Learners must demonstrate abilities as indicated in the relevant assessment criteria.	



**Please allow learners to complete Activity 3**

Type of activity	Resources
<b>3. Individual work and written report</b>	Learning material, pictures of various animal species.
<b>Instructions to give to the learners</b>	
Let the learners make a list of possible abnormalities that can occur in farm animals that will negatively effect the production of those animals. The learners must then try to obtain as many examples as possible of the abnormalities that may occur, as well as photo's or pictures of such abnormalities. The learner must then explain how he or she thinks the abnormality will affect the animal and production.	
<b>Conclusions</b>	
Learners must demonstrate abilities as indicated in the relevant assessment criteria.	



**Please allow learners to complete Activity 4**

Type of activity	Resources
<b>4. Individual work and written report</b>	Learning material, pictures of various animal species.
<b>Instructions to give to the learners</b>	
The learners have already compiled a list of abnormalities in the previous activity (Activity 3). The learners must discuss the abnormalities and give the probable causes for the external abnormalities.	
<b>Conclusions</b>	
Learners must demonstrate abilities as indicated in the relevant assessment criteria.	

Session

# 3 Basic composition and structure of the exterior anatomical systems

Learner Guide:  
Page 32

After completing this session, the learner should be able to:  
**SO 3: Evaluate external animal anatomy and morphology.**

Concept (SO 3 and 4)	Time frame	Activities related to the concept
The composition of each of the external divisions of the animal is identified.	11 hours	Activities 5 and 6
The structure of each of the external divisions or parts of animals is identified.		
Gross abnormalities in animal body parts are identified and evaluated and their possible causes are identified.		
Anatomical systems are identified and their structures, purpose and components are named and described according to criteria.		
The structures of anatomical systems are demonstrated pictorially diagrammatically or practically according to criteria.		
External parts of further anatomical systems are identified practically.		



**Please allow learners to complete Activity 5**

Type of activity	Resources
1. Individual work and written report with pictures	Learning material, pictures of various animal species.
Instructions to give to the learners	
The learners must collect pictures of different animal species. These pictures should then be labeled with all the anatomical parts of the animal that are visible. If they found photos where abnormalities in external anatomy are depicted they should write a short paragraph about this abnormality. The learners should then discuss the effects of these defects on the production capabilities of the animal.	
Conclusions	
Learners must demonstrate abilities as indicated in the relevant assessment criteria.	



**Please allow learners to complete Activity 6**

Type of activity	Resources
2. Group outing, but individual notes and report for PoE.	The facilitator must arrange an outing to a veterinary surgeon where a dissection of a domesticated animal will be performed.
Instructions to give to the learners	
An arrangement should be made with a local veterinary scientist who will assist with a post mortem of an animal, to discuss the various anatomical features of the animal both internally and externally. Using a sheep or goat for this purpose will be less expensive than a cow or steer. While the Vet is dissecting the carcass the learners should ask as many questions as possible and make notes regarding the various organs that they see. The learners should draw simple sketches of the various organs and their placement in the animal's body. Using an old animal for this dissection is often useful since disease lesions and injuries are more common in older animals. Learners should be encouraged to handle the organs to feel their consistency and to take part in the dissection.	
Conclusions	
Learners must demonstrate abilities as indicated in the relevant assessment criteria.	

**My Notes ...**

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# Session 4 The lifecycle of an animal

**Learner  
Guide:  
Page 39**

*After completing this session, the learner should be able to:*  
**SO 4: Identify and describe the lifecycle of a specific animal.**

Concept (SO 5)	Time frame	Activities related to the concept
The various steps in the life cycle of the animal and their descriptions are identified.	10 hours	Activity 7
The morphology of the various steps in the life cycles is identified.		
The environmental or habitat preferences for the various steps in the life cycle and the vulnerability of the animal, where appropriate are identified.		



**Please allow learners to complete Activity 7**

Type of activity	Resources
1. Group work and group written report with pictures	Learning material, library resources and the internet, pictures of various animal species that have interesting life cycles (Good examples would include things like insects such as butterflies, worms such as liver flukes, and frogs).
Instructions to give to the learners	
Let the class divide into two to three groups. Assign an animal to each group and let each group research the life cycle of their animal.	
Conclusions	
Learners must demonstrate abilities as indicated in the relevant assessment criteria.	

# What will I do differently next time?

Take some time to **reflect** on your own activities as facilitator of this Unit Standard. Then write down five of the most important lessons you have learnt and include a motivation:

What will I do differently next time?	Motivate how or why (Give examples, reasons, etc.)
1.	
2.	
3.	
4.	
5.	

As facilitator, you have hands on experience in the application of the unit standard. And you might experience difficulties with the unit standard that the developers did not anticipate. Also, the unit standard will be revised at the end of the registration period. Your comments below can be an important contribution in the revision process and should be brought to the attention of either the AgriSETA ETQA manager or the SGB chairperson.

Please take some time to reflect on your experience and list a few of the difficulties you had to address.

Difficulties I had with the Unit Standard	Recommended Changes to Address the Difficulty
6.	
7.	
8.	
9.	
10.	