



NQF Level: 2 US No: 116127

Assessment Guide

Primary Agriculture

Apply layout principles for conservation and infrastructure



Assessor:

Workplace / Company:

Commodity: Date:

Before we start...

This assessment guide contains all necessary activities and instructions that will enable the assessor and learner to gather evidence of the learner's competence as required by the unit standard. This guide was designed to be used by a trained and accredited assessor whom is registered to assess this specific unit standard as per the requirements of the AgriSETA ETQA.

Prior to the delivery of the program the facilitator and assessor must familiarize themselves with content of this guide, as well as the content of the relevant Learner Workbook.

The assessor, facilitator and learner must plan the assessment process together, in order to offer the learner the maximum support, and the opportunity to reflect competence.

The policies and procedures that are required during the application of this assessment are available on the website of the AgriSETA and should be strictly adhered to. The assessor must familiarise him/herself with this document before proceeding.

This guide provides step-by-step instructions for the assessment process of:

Title: Apply layout principles for conservation and infrastructures
US No: 116127 NQF Level: 2 Credits: 5

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

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

Please mark the learning program you 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 Assessor:

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

Instructions to learner:

Group Activity

Learner Guide: Page 15**Facilitator Guide: Page 12****Part 1. Investigating the farm**

Part 1 of the activity takes place on a farm where the learners will explore the local ecology and other factors influencing farm layout. This activity will take a whole day.

In small groups (of two or three) learners will be assigned a specific area of the farm where they must use the lists provided (feel free to add to these) to record their findings. In Part 2 of the activity learners will report back to the main group.

The data to be collected includes:

- ◆ The main plant types found on your site.
- ◆ All animals found on your site – including insects, birds, reptiles and mammals.
- ◆ All other organisms that you think have an influence on the ecology of the farm.
- ◆ Wind direction.
- ◆ Location of the boundaries.
- ◆ Location of any buildings, roads or infrastructure, and briefly assess their condition.
- ◆ Location of features such as rivers and dams, and briefly assess their condition.
- ◆ Location of prominent trees and natural features, such as mountains, plains and natural sections.
- ◆ Demarcation of areas you believe to be 'natural' or 'farmed on'.
- ◆ Look at a farm in the greater context of the surrounding community and its relation to the city - is the farm affected by its neighbours? Are the neighbours affected by this farm?
- ◆ Look at the aspect of adaptation in plants and animals- how have plants adapted to best suits their environment.

Look at **The learner list** land as being in a state of constant change. - Seasonal and production.

Model Answer(s):

The assessor will have to source indigenous plant lists to use for the assessment of this activity.

- The learners should identify the dominant plant species of the vegetation type (grasses, shrubs, trees).*
- The learners should identify the dominant animal, insect, bird, reptile and mammal species of the vegetation type (grasses, shrubs, and trees).*
- Other organisms could vary from context to context.*
- Wind direction should be as per the area's climatic information.*
- The boundaries should be accurately depicted.*
- Buildings, roads and infrastructure should be correctly identified and placed, and their condition assessed as per the current situation.*
- Rivers and dams should be correctly placed and assessed.*
- Dominant landscape features are identified.*
- Distinction is made between farmed and unfarmed areas.*
- The dominant influence of the farm on the surrounding area is identified.*
- The dominant external influences are identified.*
- The plant and animal adaptations are correctly identified.*

My Notes ...

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Part 2. Putting information together

The group’s report back must include:

- ◆ A summary of the findings,
- ◆ A list of the living organisms for which learners found evidence (plants, animals, insects, reptiles),
- ◆ The most common organisms (e.g. mostly reptiles, mostly birds or so on).
- ◆ The location of 'natural' and "farmed" areas.
- ◆ The learner’s opinion of the state of the farm in terms of its biological diversity.

Model Answer(s):
The assessor will have to source indigenous plant lists to use for the assessment of this activity.
The group presentation should include the following:

- *A summary of plants, animal, insect and reptile life,*
- *The dominant animal species are identified*
- *The natural and farmed areas are distinguished*
- *An accurate assessment of the farm's biodiversity is made, based on the findings.*

My Notes ...

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Part 3.

The learners' task is to design the layout of a farm. This is a group activity that builds on the last activity in a way that allows learners to apply their learning.

The group will be provided with a large map of a farm. This map contains hills, rivers and valleys. The facilitator has placed buildings, houses, sheds, reservoirs, crops and animals on this map. The group need to use the map of the farm to lay out the infrastructure of the farm in a way that they think is best suited to ensure environmental sustainability.

Once they have decided where to put their infrastructure learners will present their plan to the rest of the group and motivate their reasoning. The presentation must explain:

- ◆ A summary of the findings,
- ◆ Describe the new layout
- ◆ Reasons for the new layout

Model Answer(s):

The assessor will have to source information regarding the local conditions, such as indigenous plant lists, soil types, climate, etc. to use for the assessment of this activity.

- *The placement of the structures and infrastructure are such that:*
- *Climate is taken into account (maximum, minimum rainfall, floods, etc.)*
- *Soil is conserved,*
- *Indigenous vegetation is conserved*
- *Services are of the minimum distance; access/electricity/piping for water*
- *Waste water is used appropriately*
- *Buffer zones are identified; windbreaks, fire breaks, buffer zones*

My Notes ...

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Instructions to learner:

Practical (Group) Activity

Learner Guide: Page 21 Facilitator Guide: Page 14

In the table below is a list of problems on the farm. Learners must select one problem from each category. In their groups, learners must investigate the problem and decide on a course of action that will solve the problem. Learners must draw up a list of materials they will need. The facilitator will see to it that learners receive the required materials. Construct the intervention. A technical expert will be available to learners during their planning and an assessor will assess their final product.

Category A	Category B
Heavy rains caused erosion to a road	Chickens are escaping from the chicken run
Soil erosion in a field	A tap is leaking
A gully is approaching a spring	The trellis system is breaking
The farm rubbish dump is overflowing and plastic bags are being blown around	A tractor has a flat tyre
The access road is full of potholes	Goats are eating the main crop

Model Answer(s):

It is not possible to provide observation checklists for every possible activity that can be undertaken. The assessor must ensure that the checklist compiled, includes the following:

- *Those safety procedures are followed.*
- *That appropriate protective clothing is worn.*
- *That appropriate tools are selected.*
- *That appropriate equipment is selected.*
- *The construction is performed step-by-step in such a way that the finished product is secure, sturdy and meets appropriate standards.*

Instructions to learner:

Complete the exercise

Learner Workbook: Page 24 Facilitator Guide: Page 15

For this task, learners are to go into the field and conduct a condition survey of a farm's infrastructure. Accompanied by the facilitator, learners are to conduct an assessment of the condition and degree of repair of the farm's infrastructure such as fences, contours, culverts, extraction roads, sheds, taps, vehicles etc.

The learners' task is to assess any farm's infrastructure, documenting the condition of each component using the table format provided below. Any faulty component, (e.g. blocked culvert, damage to road, leaking/burst pipe, hole in the roof etc.), must be recorded. Depending on the complexity of the problem learners will then be required to fix the problem under the supervision of their facilitator. Learners should present an overall infrastructure condition report back to the class, outlining their summary of the well being or otherwise of the farm's infrastructure.

The table could look something like the following:

Item	Location	Condition	Score (1– 10)	Comment
Extraction road	East side of main road	poor	1	Needs repairs immediately – due to harvest.
Irrigation Pipe	West side of tool shed	poor	1	Needs urgent attention-impact on irrigation pressure
Tractor	Equipment shed	OK	6	Needs wash
Chicken coop	Back garden	Very poor	1	Broken frame, wire damaged, door fallen off
Fence-line	Eastern boundary of main property	Average	6	Needs repair @42 m and 45 m from eastern boundary corner

Their scoring system will allow the learners to judge the seriousness of the problem with infrastructure. A score of 10 would mean in perfect order, whilst a score of 1 would mean completely unusable. A score of 5 would mean 'just' working adequately.

Learners will observe their facilitator repair the following items on the farm:

- ◆ A leaky tap
- ◆ A broken pipe or blocked dripper in an irrigation system, a broken fence line
- ◆ A car tyre

On completion, learners will conduct a similar activity under the supervision of the facilitator. It is important that the learners ask questions during the demonstration to make sure that they understand how to conduct these maintenance activities.

Model Answer(s):

No specific model answers

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Summative Test and Attitude & Attribute Evaluation

Before the knowledge test is undertaken, the learner must be reminded of what is expected from him / her in terms of summative and reflexive competence. Read and explain to the learner, the **Preparation for Your Final Assessment** section in the learner workbook. Learners and assessor should sign off this section to acknowledge that this step was completed.

Please set up a knowledge test from the questions given as a guideline to learners and supply each learner with a test sheet.

Supply each report with the following heading:

Unit Standard:	116127	NQF Level:	2
Learner Name:			

Questions	Model Answers
1. Identify and map the major physical veld and soil types on the farm where they are doing their practical learning.	<p>List of major physical characteristics:</p> <ul style="list-style-type: none"> • Soil types • Aspect • Rivers • Boundaries • Valleys • Veld types
2. Identify management problems and infrastructural issues that face the farm where practical learning are taking place.	<p>Should include:</p> <ul style="list-style-type: none"> • Water quality • Veld management • Soil management • Environmental management • Infrastructure needs expansion • Infrastructure needs maintenance • Infrastructure placement • Infrastructure update

Questions	Model Answers
<p>3. Identify potential land and natural resource usage on the farm.</p>	<p>Design of the farm in relation to:</p> <ul style="list-style-type: none"> • Agriculture • Water catchments • Conservation areas • Sustainable • Potential for erosion, decay or damage
<p>4. Redesign the farm to fulfill sustainable development criteria of management.</p>	<p>Placement of infrastructure with affect on:</p> <ul style="list-style-type: none"> • Water • Soil • Conservation areas • Aesthetics • Appropriateness for local area.
<p>5. Present a fault finding report on a mission conducted around the farm, commenting on infrastructure and grading condition.</p>	<p>Draw up a table to record the faults and set out a standard upon which to evaluate the farm system:</p> <ul style="list-style-type: none"> • Faults are listed and evaluated • Maintenance is carried out according to schedule • Relevance of the method to the situation is correct • Basic corrections are conducted with correct procedure and safety equipment.
<p>6. Observe and participate in basic infrastructure repairs – a leaky tap, a flat tyre and a broken fence.</p>	<ul style="list-style-type: none"> • The learner will have identified and listed the fault. • The learner will then determine what equipment is required and if it is safe to work on the repair. • List of protective equipment and gear is available. • The Learner will then demonstrate how to repair the fault.

My Notes ...

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Assessment Feedback Form

Comments / Remarks	
<p>Feedback to learner on assessment and / or overall recommendations and action plan for competence:</p>	
<p>Feedback from learner to assessor:</p>	
<p>Assessment Judgement You have been found:</p> <p><input type="radio"/> Competent</p> <p><input type="radio"/> Not yet competent in this unit standard</p>	<p>Actions to follow:</p> <p><input type="radio"/> Assessor report to ETQA</p> <p><input type="radio"/> Learner results and attendance certification issued</p>
<p>Learner's Signature:</p>	<p>Date:</p>
<p>Assessor's Signature:</p>	<p>Date:</p>
<p>Moderator's Signature:</p>	<p>Date:</p>