

**Mulch and Enrich the Soil
of Established Landscaped Areas
Assessment Guide**

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CANDIDATE DETAILS

Candidate Name: _____	
Contact Details:	Physical Address: _____
Identity Number _____	
Tel: _____	Email: _____
Assessor Name: _____	
Tel: _____	Email: _____
Moderator Name: _____	
Tel: _____	Email: _____
Physical Address: _____	

Tel: _____	

Declaration:

I, _____ (assessor) hereby declare that the information contained in the attached documentation is, to my knowledge, correct and valid.

Candidate

signature

Date

Assessor

signature

Date

Moderator

signature

Date

UNIT STANDARD

TITLE

Mulch and Enrich the Soil of Established Landscaped Plantings

UNIT STANDARD NUMBER: 119703

UNIT STANDARD LEVEL: NQF 1

CREDITS: 5

FIELD: Agriculture and Nature Conservation

SUB FIELD: Horticulture

ISSUE DATE: 2006-02-09

REVIEW DATE: 2009-02-09

PURPOSE OF THE UNIT STANDARD

This standard is aimed at people who work in or intend to work within the Horticulture industry in general and as applied in a specific environment.

Those learners who acquire the outcomes of this standard will be able to mulch soil between plants and enrich soil in established plantings using organic and inorganic fertilizers.

The qualifying learner is able to:

- Show an understanding of the benefits of mulching.
- Select suitable material for mulching.
- Recognised the importance of using organic material when conducting regular cultivation in established plantings.
- Recognise the importance of regular applications of fertilizers to the soil of established plantings.

LEARNING ASSUMED TO BE IN PLACE

Demonstrate knowledge of communication and Numeracy at Abet level 3.

1 *Continued on next page*

Specific Outcomes and Assessment Criteria:

Specific Outcome 1

Show an understanding of the benefits of mulching:

Outcome Range:

- Conserve moisture, cool the soil, aesthetics, release of nutrients, reduce evaporation, suppress weed growth.

Assessment Criteria

1. Describe the role that mulching plays in the reduction of evaporation from the soil.
2. Explain the benefits that mulching provides in effecting weed control.
3. Explain the role that mulching plays in enhancing the aesthetics of a landscape.
4. Describe the benefits derived from the breakdown of organic mulches.
5. demonstrate the application of mulch to an existing planted area.

Specific Outcome 2

Select suitable material for mulching.

Outcome Range:

- Bark chips, wood chips, dry leaves, pebbles, plastic sheeting, compost, straw, peanut shells.

Assessment Criteria

1. Identify examples of organic mulching materials.
2. Explain the criteria for the selection of inorganic mulching material.

Specific Outcome 3

Recognise the importance of using organic material when conducting regular cultivation in established plantings.

Outcome Range:

- Compost, peat moss, leaf mould, lignitic fines, tobacco dust.

Assessment Criteria

1. Explain the improvements in soil friability, resulting from the addition of organic materials.
2. Explain the increased nutrient levels in the soil, resulting from the addition of organic materials.
3. Explain the role that organic material plays in improving the water retention capacity of a soil.
4. Describe the major organic materials that are used for soil conditioning.

Specific Outcome 4

Recognise the importance of regular applications of fertilizers to the soil of established plantings.

Outcome Range:

- Maintain nutrient levels, general fertilizers (NPK), slow release fertilizers, potassium rich fertilizers, nitrogen rich fertilisers, trace elements, bone meal, agricultural lime.

Assessment Criteria

1. Explain the reasons why regular applications of fertilizers are necessary for established plantings.
2. Describe the common fertilizers that are used to enrich the soil in established in plantings.
3. Demonstrate the application of fertilizers to established plantings.

Unit Standard Accreditation and Moderation Options

1. Internal moderation.
2. External moderation.
3. Moderation of assessment will be overseen by the relevant ETQA, according to the moderation guidelines in the relevant qualification the agreed ETQA procedures.
4. Internal assessment.
5. External assessment with the relevant registered/accredited industry body/ETQA.
6. An Assessor accredited by the relevant ETQA, will assess the Learner's competency.
7. Formative and summative assessment of qualifying Learners against this unit standard should be in alignment with the requirements of the NSB.
8. Practical assessment activities will be used that are appropriate to the contents in which the qualifying Learners are working.
9. Assessment will include self and peer assessment, practical and oral assessment, observations, questions and answers, etc.
10. Direct observation is required in simulated or actual work conditions.
11. Reporting skills are demonstrated by effective communication, using verbal and/or writing skills.
12. Assessments are to be structured to include formative and summative component, as well as the submission of a Portfolio of Evidence.
13. The assessment should ensure that all the specific outcomes, critical cross-field outcomes and embedded knowledge are assessed.
14. Specific outcomes must e assessed in their own right, through oral and practical evidence and cannot be assessed by observation only.
15. Essential embedded knowledge must be assessed in their own right, through oral and practical evidence and cannot be assessed by observation only.
16. Special outcomes and essential embedded knowledge must e assessed in relation to each other.
17. If qualifying Learners are able to explain the essential embedded knowledge, but are unable to perform the specific outcomes, then they should not be assessed as competent.
18. If qualifying Learners are able to perform specific outcomes, but are unable to explain the essential embedded knowledge, they should not be assessed as competent.
19. Evidence of the specified critical cross-field outcomes should be found, both in performance and in essential embedded knowledge.
20. All assessment activities must be fair, so that all Learners have equal opportunities. Activities must be free of gender, ethnic or other bias.
21. This unit standard can be assessed together with any other relevant registered unit standard.

Embedded Knowledge

Embedded knowledge is reflected within the assessment criteria of each specific outcome and must be assessed in its own right, through oral and written evidence. Observation cannot be the only assessment.

Developmental Outcomes

1. Reflecting on and exploring a variety of strategies to learn more effectively.
2. Participating as responsible citizens in the life of local, national and global communities.
3. Being culturally and aesthetically sensitive across a range of social contexts.
4. Exploring education and career opportunities.
5. Developing entrepreneurial opportunities.

Critical Cross Field Outcomes

- Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made – specific outcome 1, 2 and 3.
- Work effectively with others as a member of a team, group, organisation or community. Specific outcome embedded in the learning for this level of learner.
- Organise and manage oneself and one's activities responsibly and effectively. Specific outcome 2.
- Collect, analyse, organise and critically evaluate information. Specific outcome 1, 2 and 3.
- Communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written presentation. Specific outcome embedded in the learning for this level of learner.
- Use science and technology effectively and critically, showing responsibility toward the environment and health of others. Specific outcome 1, 2 and 3.
- Demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation. Specific outcome 1, 2 and 3.

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ASSESSMENT STRATEGY

UNIT STANDARD TITLE	Mulch and enrich the soil of established landscaped areas	UNIT STANDARD NUMBER	119703
LEVEL	NQF Level 1	TOTAL CREDIT VALUE	5
TARGET GROUP	<p>This standard is aimed at people who work in or intend to work within the Horticulture industry in general and as applied in a specific environment.</p> <p>Those learners who acquire the outcomes of this standard will be able to mulch soil between plants and enrich the soil in established plantings using organic and inorganic fertilizers.</p> <p>The qualifying learner is able to:</p> <ul style="list-style-type: none"> ▪ Show an understanding of the benefits of mulching. ▪ Select suitable material for mulching. ▪ Recognise the importance of using organic material when conducting regular cultivation in established plantings. ▪ Recognise the importance of regular application of fertilizers to the soil of established plantings. 		

Context of Assessment	The Purpose of the Assessment
	<p>Range Addressed</p> <p>The range covered, refers to all the specific outcomes and assessment criteria as outlined by the unit standard.</p> <p>Candidates produce evidence that he/she can mulch soil between plants and enrich the soil in established plantings using organic and inorganic fertilizers.</p>

	Assessment Approach
	<p>Assessment is focused on the applied competence of the learner and the relevant unit standard determines the assessment criteria.</p> <p>Summative Assessment This is a summative assessment and assesses Candidates taking part in the National Certificate in Ornamental Horticulture Learnership at NQF Level 1.</p> <p>RPL This assessment may also be used to assess Candidates for RPL purposes</p> <p>Diagnostic The results from this assessment can also be used for the purpose of Gap Fill training and will assist in the development of the Workplace Skills Plan.</p> <p>Rating Learners are rated "Competent" or "Not Yet Competent".</p>

Assessment Instruments	
Types of Evidence	Assessment Method
Direct	<p>Observation</p> <p>Questioning by means of an oral or written test to determine foundational and reflective competence.</p>
Assessment Conditions	
<p>The collection of evidence for the purposes of this assessment will take place in either the candidate’s natural work environment or in the classroom. The candidate will be expected to demonstrate an understanding of mulching and enriching the soil of established plantings as stipulated by the Unit Standards specific outcomes, range statements and assessment criteria.</p>	

	Assessment Team
	<p>The assessment team consists of the following:</p> <ul style="list-style-type: none">▪ Evidence Collection Facilitator▪ Assessor▪ Internal Moderator (20% of all portfolios are moderated)▪ External Moderator (20% of portfolios are moderated)
	Special Assessment Needs

	<p>Special needs are dealt with in the Assessment Preparation Interview. Should the candidate present any special needs requests, the assessment will be adjusted, provided that the fairness, validity and reliability of the assessment are not compromised.</p> <p>In addition the knowledge test may be administered as an oral interview or as a written test depending on the confidence and language levels of the candidates.</p>
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ASSESSMENT PROCESS

The Steps:	How:
Prepare for the Assessment	<p>1. Review this assessment guide to:</p> <ul style="list-style-type: none"> ▪ Ensure that you understand all the requirements of the assessment in terms of evidence required to prove competence. ▪ Validate the assessment instruments against the candidate’s context. ▪ Ensure that you have familiarised yourself with all the policies and procedures referred to in the assessment guide. <p>2. Identify and prepare the candidate for the assessment by:</p> <ul style="list-style-type: none"> ▪ Conducting the “Assessment Preparation Interview, Sheet” where all the details regarding the assessment are discussed and agreed to by all parties. <p>OR</p> <ul style="list-style-type: none"> ▪ Provide the candidate with a letter detailing all the specifications covered in the “Assessment Preparation Interview Sheet.”
Conduct Assessment	<p>1. Review the assessment plan with the candidate.</p> <p>2. Collect the evidence in accordance with the instrument requirements.</p> <p>Please note that the checklist covers the following:</p> <p><u>Observation and Knowledge Questioning</u> This assessment covers all the foundational competence as outlined by the specific outcomes, range statements and assessment criteria in the unit standard and may be conducted as a written or oral test.</p> <p>Gather, record and make judgments on all the evidence.</p>

The Steps:	How:
<p style="text-align: center;">Make assessment Decision</p>	<ol style="list-style-type: none"> 1. Make assessment decision and discuss the results with the learner in a face-to-face interview. 2. Ensure that your feedback is developmental and supportive in nature. 3. Advise the candidate on what action to follow in the event of a “Not-Yet-Competent”. 4. Advise the candidate on what action to take where he/she feels the need to appeal your decision. 5. Allow the candidate time to provide you with feedback relevant to the process. 6. Ensure the candidate counter-signs the “Assessment Decision” to indicate his/her agreement to the feedback and overall score. 7. Record the candidate’s feedback in this guide and ensure that it is provided to the person responsible for the quality assurance of assessment tools. 8. Handle any disputes and identify matter that requires contingency planning.
<p>Review the Assessment Process</p>	<p>Complete the “Assessment Review” documents and submit to the assessment co-ordinator.</p>

Assessor Signature		Date	
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ASSESSMENT CONFIRMATION

Dear : _____

(Candidate Name & Surname)

This serves as a confirmation that your “**Assessment Preparation Interview**” will be conducted on the _____ (date) at _____ (venue).

We will discuss:

- The purpose of the assessment.
- The date, time and venue of your assessment.
- The context of the NQF.
- And select the Unit Standard against which you will be assessed.
- The credit value, level, of the unit standard against which you will be assessed.
- The assessment procedure.
- The assessment methods to be used in your assessment.
- How the evidence will be collected.
- What evidence you are required to present on the day, whether direct, historical or indirect.
- Your special requirements, whether medical or personal, that will affect the assessment procedure.
- And agree to feedback procedures.
- The moderation process.
- Appeals procedure.
- Agree to and sign the assessment plan.

Please do not hesitate to contact me should you have any further queries.

Thank you

Assessor Signature	_____	Date	_____
Candidate Signature	_____	Date	_____

**ASSESSMENT PREPARATION INTERVIEW
SHEET**

	√	X	Contingency
<p>_____, your assessment will be conducted at(time) on the(day) of(month) 200...(year) at(venue).</p> <ul style="list-style-type: none"> <i>(Allow the candidate to provide alternative dates, times or venues, where feasible.)</i> 			
<p>I will briefly explain the context of the NQF to you, to ensure that you understand the reasons for the assessment being conducted in this manner.</p>			
<p>You will be assessed against Unit Standard No: Mulch and enrich the soil of established landscaped areas. @ NQF Level :1</p>			
<p>The Unit Standard is worth 5 credits <i>(Where the assessment is not based on an NQF Standard, please explain to the candidate that this field will not be completed.)</i></p>			
<p>In order to determine your competence levels, we will be conducting the assessment using various methods:</p> <p>You will be required to produce the following evidence in order to demonstrate your competence:</p> <ul style="list-style-type: none"> <i>(Explain the evidence requirements in terms of the assessment criteria.)</i> <i>(Explain what documentary evidence the candidate should produce on the day of the assessment, i.e. historical evidence, indirect evidence.)</i> <p style="text-align: center;"><u>Observation and Knowledge Questionnaire</u> This covers all the specific outcomes, range statement and assessment criteria as outlined by the unit standard.</p>			

	√	X	Contingency
<p>Please provide us with details regarding any special needs you may have.</p> <ul style="list-style-type: none"> <i>(Explain to the candidate that these special needs may be of a medical or personal nature, e.g. requiring an interpreter, making provision for guide dogs, etc.)</i> <i>(Explain to the candidate that these needs will be catered for, within the parameters of assessment validity, fairness, and reliability.)</i> 			
<p>You will be provided with detailed feedback regarding your performance on(date) by means of (explain methods, i.e. written, interview.)</p> <ul style="list-style-type: none"> <i>(Explain how and when feedback will be provided – indicate to the candidate, at which intervals feedback will be provided, using the assessment instrument.)</i> <i>(Explain the Moderation Process.)</i> 			
<p>In the event that you are rated “Not-Yet-Competent”, you will be entitled to one (1) re-assessment opportunity.</p> <ul style="list-style-type: none"> <i>(Explain the re-assessment procedure in terms of remedial coaching, etc.)</i> 			
<p>You are entitled to lodge an appeal should you not be in agreement with the assessor’s decision.</p> <ul style="list-style-type: none"> <i>(Explain the appeals procedure to the candidate...see appeals procedure attached.)</i> 			
<p>Your assessment results will be forwarded to the following departments:</p> <ul style="list-style-type: none"> <i>(Advise candidate of rights in terms of confidentiality agreements.)</i> <i>(Advise candidate of storage procedures.)</i> 			
<p>You will be afforded an opportunity to provide the assessor with feedback regarding the assessment procedure, to assist us in improving our assessment practices.</p> <ul style="list-style-type: none"> <i>(Advise candidate that the Assessor Review Document should be returned, together with the signed Assessment Decision Form (this is where you would acknowledge feedback provided by the Assessor))</i> 			

Candidate’s declaration of understanding

I herewith declare that I am ready for the assessment and that we have reviewed the assessment plan. I understand the assessment process and am happy that the assessment will be conducted in a fair manner.

Assessor Signature _____ • Date _____
 Candidate Signature _____ Date _____

COMPETENCE JUDGEMENT

OVERALL COMPETENCE RECORD

Candidate		Assessor	
Venue		Date	
Unit Standard	Mulch and enrich the soil of established landscaped areas.		

Evidence evaluation	Relevant	Valid	Authentic	Consistent	Current	Sufficient
Observation checklist						
Knowledge Questionnaire Checklist						

EVIDENCE SUMMARY

TYPES OF EVIDENCE	ASSESSMENT METHODS	FEEDBACK	REQUIREMENTS MET	
			YES	NO
	OBSERVATION			
	KNOWLEDGE QUESTIONNAIRE			

ADDITIONAL FEEDBACK FROM ASSESSOR

ASSESSMENT DECISION

The candidate has submitted evidence that is valid, relevant, current, sufficient and authentic against the listed specific outcomes and covered all range statements. (Yes/No)	
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The candidate is competent in all the assessment criteria listed. (Yes/No)	
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The candidate is not yet competent in the following criteria:	The following items needed some corrective action or improvement:

RE-ASSESSMENT DECISION

The candidate has submitted additional evidence that was required. The evidence is valid, relevant, sufficient and authentic against the listed specific outcomes and covered all range statements. (Yes/No)	
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The candidate is competent in all the assessment criteria listed. (Yes/No)	
--	--

Assessor's name, surname and signature	Date

Declaration by candidate	
I,declare that I am satisfied that the feedback given to me by the Assessor was relevant, sufficient and done in a constructive manner. I accept the assessment decisions and have no further questions relating to this particular assessment process.	

Candidate	Date	Assessor	Date	Moderator	Date
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APPEALS APPLICATION

Candidate		Application Date	
Assessor		Assessment Date	
Assessment Venue			

Unit Standard against which you were assessed	Mulch and enrich the soil of established landscaped areas		
	Number 119703	NQF Level 1	Credits 5

What was the purpose of the assessment?	
Explain how you were assessed?	
List the reasons why you disagree with the assessment decisions.	
Which one of the following options could resolve the matter?	<input type="checkbox"/> <i>Another Assessor</i> <input type="checkbox"/> <i>Different Assessment Instrument</i> <input type="checkbox"/> <i>Different Assessment Method</i> <input type="checkbox"/> <i>Different Venue for Assessment</i> <input type="checkbox"/> <i>Different Time</i>
List any special needs you may have.	

Candidate signature _____ Date _____

Moderator signature _____ Date _____

ASSESSMENT REVIEW

Candidate		Assessor	
Venue		Review date	
Unit standard	Mulch and enrich the soil of established landscaped areas.		
Review Dimension	ASSESSOR	CANDIDATE	ACTION
The principles/criteria for good assessment were achieved.	<input type="checkbox"/> Agree <input type="checkbox"/> Disagree	<input type="checkbox"/> Agree <input type="checkbox"/> Disagree	
The assessment related to the registered unit standard.	<input type="checkbox"/> Agree <input type="checkbox"/> Disagree	<input type="checkbox"/> Agree <input type="checkbox"/> Disagree	
The assessment was practicable.	<input type="checkbox"/> Agree <input type="checkbox"/> Disagree	<input type="checkbox"/> Agree <input type="checkbox"/> Disagree	
It was time efficient and cost-effective and did not interfere with my normal responsibilities.	<input type="checkbox"/> Agree <input type="checkbox"/> Disagree	<input type="checkbox"/> Agree <input type="checkbox"/> Disagree	
The assessment instruments were fair, clear and understandable.	<input type="checkbox"/> Agree <input type="checkbox"/> Disagree	<input type="checkbox"/> Agree <input type="checkbox"/> Disagree	
The assessment judgements were made against set requirements.	<input type="checkbox"/> Agree <input type="checkbox"/> Disagree	<input type="checkbox"/> Agree <input type="checkbox"/> Disagree	
The venue and equipment were functional.	<input type="checkbox"/> Agree <input type="checkbox"/> Disagree	<input type="checkbox"/> Agree <input type="checkbox"/> Disagree	
Special needs were identified and assessment plan was adjusted.	<input type="checkbox"/> Agree <input type="checkbox"/> Disagree	<input type="checkbox"/> Agree <input type="checkbox"/> Disagree	
Feedback was constructive against the evidence required.	<input type="checkbox"/> Agree <input type="checkbox"/> Disagree	<input type="checkbox"/> Agree <input type="checkbox"/> Disagree	
An opportunity to appeals was given.	<input type="checkbox"/> Agree <input type="checkbox"/> Disagree	<input type="checkbox"/> Agree <input type="checkbox"/> Disagree	
The evidence was recorded.	<input type="checkbox"/> Agree <input type="checkbox"/> Disagree	<input type="checkbox"/> Agree <input type="checkbox"/> Disagree	
CANDIDATES DECLARATION OF UNDERSTANDING			
I am aware of the moderation process and understand that the moderator could declare the assessment decision invalid			
----- Candidate	----- Date	----- Assessor	----- Date
		----- Moderator	----- Date

INSTRUCTIONS TO THE CANDIDATE

In the first part of your assessment, the assessor will ask you to identify organic mulching materials and then apply mulch and fertilizer to existing planted areas.

The next part of your assessment will be a knowledge questionnaire. This assessment is made up of 12 questions and may be answered orally or in writing.

If you will be answering the questions in writing, take note of the following instructions.

- Before answering the questions, take your time and read each one question. Make sure that you understand the question.
- Please make sure that you answer all the questions.
- There is no time limit so you can take as long as you need to complete the questions.
- Once you have finished answering the questions, give your questions to the assessor.
- The assessor will contact you within the next five days to give you feedback on your assessment.

Candidate	
Assessor	
Venue	
Date	

Questions

1. Describe how mulching reduces water evaporation from the soil.

2. Explain how mulching controls weeds.

Questions

3. Explain how mulching improves the look of the landscaped area.

4. Describe the benefits that come from the breakdown of organic mulches.

Questions

5. Give at least 8 examples of organic mulching materials.

6. Explain the criteria you would use when selecting inorganic mulching materials.

Questions

7. Explain how the soil friability is improved by adding in organic materials to the soil.

8. Explain how the soil nutrient levels in the soil are increased by adding organic materials to the soil.

Questions

9. Explain how organic material improves the water retention ability of a soil.

10. Describe the major organic mulches you would used to improve the condition of your soil.

Questions

11. Explain why regular applications of fertilizers are necessary for established plantings.

12. Describe the common fertilizers that are used to enrich the soil of established plantings.

•

ASSESSMENT

INSTRUMENT

OBSERVATION CHECKLIST

Candidate • Name & Surname		Assessor Name & Surname	
Venue		Time	
Title	Mulch and Enrich the Soil of Established Landscaped Areas	Unit Std No	119703

S/O	A/C	Items Criteria / Evidence Requirements	Yes	No	Comment
2. Select suitable material for mulching	Did the candidate correctly:				
	2.1.	<ul style="list-style-type: none"> Identify examples of organic mulching materials. 			
		<ul style="list-style-type: none"> Select suitable material for mulching. 			
1. Show and understanding of the benefits of mulching.	1.5.	<ul style="list-style-type: none"> Apply mulch to an existing planted area. 			

<p>4. Recognise the importance of regular applications of fertilizers to the soil of established plantings.</p>	<p>4.3.</p>	<p>Apply fertilizers to established plantings.</p>			
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KNOWLEDGE QUESTIONNAIRE CHECKLIST

Candidate Name & Surname		Assessor Name & Surname	
Venue		Time	
Title	Mulch and enrich the soil of established landscaped areas	Unit Std No	119703

S/O	A/C	Questions Criteria / Evidence Requirements	Oral Response	Candidate is Competent or Not Yet Competent
1. Shown an understanding of the benefits of mulching.	1.1.	1. Describe how mulching reduces water evaporation from the soil.		
	1.2	2. Explain how mulching controls weeds.		
	1.3.	3. Explain how mulching improves the look of the landscaped area.		

S/O	A/C	Questions Criteria / Evidence Requirements	Oral Response	Candidate is Competent or Not Yet Competent
	1.4.	4. Describe the benefits that come from the breakdown of organic mulches.		
2. Select suitable material for mulching.	2.1.	5. Give at least 8 examples of organic mulching materials.		
	2.2.	6. Explain the criteria you would use when selecting inorganic mulching materials.		

S/O	A/C	Questions Criteria / Evidence Requirements	Oral Response	Candidate is Competent or Not Yet Competent
<p>3. Recognise the importance of using organic material when conducting regular cultivation in established plantings.</p>	3.1.	7. Explain how the soil friability is improved by adding organic materials to the soil.		
	3.2.	8. Explain how the soil nutrient levels in the soil are increased by adding organic materials to the soil.		
	3.3.	9. Explain how organic material improves the water retention ability of a soil.		
	3.4.	10. Describe the major organic mulches that you would use to improve the condition of your soil.		

S/O	A/C	Questions Criteria / Evidence Requirements	Oral Response	Candidate is Competent or Not Yet Competent
4. Recognise the importance of regular applications of fertilizers to the soil of established plantings.	4.1.	11. Explain why regular applications of fertilizers are necessary for established plantings..		
	4.2.	12. Describe the common fertilizers that are used to enrich the soil of established plantings.		

ASSESSMENT DESIGN DOCUMENT :

Unit Standard Title :	Mulch and enrich the soil of established landscaped areas.
NQF Level :	1
Credits :	5
Purpose :	This unit standard is for people employed within the Ornamental Horticulture and landscaping industry who need to mulch soil between plants and enrich the soil of established plantings using organic and inorganic fertilizers.
Learning assumed to be in place	Demonstrate knowledge of communication and Numeracy at Abet level 3.

Practical Competence (Specific Outcomes)	Foundational Competence (Knowledge)	Reflective Competence
<p>1. Show an understanding of the benefits of mulching.</p>	<p>1.1. Describe the role that mulching plays in the reduction of evaporation from the soil.</p> <p>1.2. Explain the benefits that mulching provides in effecting weed control.</p> <p>1.3. Explain the role that mulching plays in enhancing the aesthetics of a landscape.</p> <p>1.4. Describe the benefits derived from the breakdown of organic mulches.</p> <p>1.5. demonstrate the application of mulch to an existing planted area.</p> <p>Range: Conserve moisture, cool the soil, aesthetics, release of nutrients, reduce evaporation, suppress weed growth.</p>	<ul style="list-style-type: none"> ▪ Identify and solve problems in which responses display the responsible decisions using critical and creative thinking have been made. ▪ Work effectively with others as a member of a team, group, organization or community. ▪ Collect, analyse, organise and critically evaluate information. ▪ Communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written presentation. ▪ Use science and technology effectively and critically, showing responsibility towards the environment and health of others. ▪ Demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.
<p>2. Select suitable material for mulching.</p>	<p>2.1. Identify examples of organic mulching materials.</p> <p>2.2. Explain the criteria for the selection of inorganic mulching materials.</p> <p>Range :</p>	<ul style="list-style-type: none"> ▪ Identify and solve problems in which responses display the responsible decisions using critical and creative thinking have been made. ▪ Work effectively with others as a member of a team, group, organization or community.

Practical Competence (Specific Outcomes)	Foundational Competence (Knowledge)	Reflective Competence
	Bark chips, wood chips, dry leaves, pebbles, plastic sheeting, compost, straw, peanut shells.	<ul style="list-style-type: none"> ▪ Organise and manage oneself and one’s activities responsibly and effectively ▪ Collect, analyse, organise and critically evaluate information. ▪ Communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written presentation. ▪ Use science and technology effectively and critically, showing responsibility towards the environment and health of others. ▪ Demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.
<p>3. Recognise the importance of using organic material when conducting regular cultivation in established plantings.</p>	<p>3.1. Explain the improvements in soil friability, resulting from the addition of organic materials.</p> <p>3.2. Explain the increased nutrient levels in the soil, resulting from the addition of organic materials.</p> <p>3.3. Explain the role that organic material plays in improving the water retention capacity of a soil.</p> <p>3.4. Describe the major organic materials that are used for soil conditioning.</p> <p>Range: Compost, peat moss, leaf mould, lignitic</p>	<ul style="list-style-type: none"> ▪ Identify and solve problems in which responses display the responsible decisions using critical and creative thinking have been made. ▪ Work effectively with others as a member of a team, group, organization or community. ▪ Collect, analyse, organise and critically evaluate information. ▪ Communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written presentation. ▪ Use science and technology effectively and critically, showing responsibility towards the environment and health of others.

Practical Competence (Specific Outcomes)	Foundational Competence (Knowledge)	Reflective Competence
	fines, tobacco dust.	<ul style="list-style-type: none"> ▪ Demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.
<p>4. Recognise the importance of regular applications of fertilisers to the soil of established plantings.</p>	<p>4.1. Explain the reasons why regular applications of fertilizers are necessary for established plantings.</p> <p>4.2. Describe the common fertilizers that are used to enrich the soil in established plantings.</p> <p>4.3. demonstrate the application of fertilizers to established plantings.</p> <p>Range:</p> <p>Maintaining nutrient levels, general fertilizers (NPK), slow release fertilizers, potassium rich fertilizers, nitrogen rich fertilisers, trace elements, bone meal, agricultural lime.</p>	<ul style="list-style-type: none"> ▪ Work effectively with others as a member of a team, group, organization or community.

S/O	A/C	Evidence Required	Sources of Evidence	Assessment Method	Bloom Level
1	1 – 5	<ul style="list-style-type: none"> ▪ Describe the role that mulching plays in the reduction of evaporation from the soil. ▪ Explain the benefits that mulching provides in effecting weed control. ▪ Explain the role that mulching plays in enhancing the aesthetics of a landscape. ▪ Describe the benefits derived from the breakdown of organic mulches. ▪ Demonstrate the application of mulch to existing planted areas. 		<p>Activity: Apply mulch to existing planted areas. Knowledge questionnaire</p>	<p>Blooms Cognitive Domain – application level</p>
2	1 – 2	<ul style="list-style-type: none"> ▪ Identify examples of organic mulching materials. ▪ Explain the criteria for the selection of inorganic mulching materials. 	<p>Bark chips Wood chips Dry leaves Pebbles Plastic sheeting Compost Straw Peanut shells</p>	<p>Activity: Identify examples of organic mulching materials Knowledge questionnaire.</p>	<p>Blooms Cognitive Domain – application level</p>

S/O	A/C	Evidence Required	Sources of Evidence	Assessment Method	Bloom Level
3	1 – 4	<ul style="list-style-type: none"> ▪ Explain the improvements in soil friability, resulting from the addition of organic materials. ▪ Explain the increased nutrient levels in the soil, resulting from the addition of organic materials. ▪ Explain the role that organic material plays in improving the water retention capacity of a soil. ▪ Describe the major organic materials that are used for soil conditioning. 	Compost Peat moss Leaf mould Lignitic fines Tobacco dust.	Knowledge questionnaire.	Blooms Cognitive Domain – Comprehension level
4	1 - 3	<ul style="list-style-type: none"> ▪ Give reasons why regular application of fertilizers are necessary for established plantings. ▪ Describe the common fertilizers that are used to enrich the soil in established plantings. ▪ Demonstrate the application of fertilizers to established plantings. 	General fertilizers (NPK) Slow release fertilizers Potassium rich fertilizers Nitrogen rich fertilizers Trace elements Bone meal Agricultural lime	Activity: Apply fertilizers to established plantings. Knowledge questionnaire	Blooms Cognitive Domain – application level