



TECHNICAL &  
VOCATIONAL  
EDUCATION &  
TRAINING



# National Competency Standard for Gardening and Landscaping Standard Code: FNA04S15VI



## **PREFACE**

Technical and Vocational Education and Training (TVET) Authority was established with the vision to develop a TVET system in the Maldives that is demand driven, accessible, beneficiary financed and quality assured, to meet the needs of society for stability and economic growth, the needs of Enterprise for a skilled and reliable workforce, the need of young people for decent jobs and the needs of workers for continuous mastery of new technology.

TVET system in the Maldives flourished with the Employment Skills Training Project (ESTP) funded by ADB with the objective of increasing the number of Maldivians, actively participating in the labor force, employed and self-employed. The Project supported expansion of demand driven employment-oriented skills training in priority occupations and to improve the capacity to develop and deliver Competency Based Skill Training (CBST). The project supported delivery of CBST programs to satisfy employer demand-driven needs. The National Competency Standards (NCS) provide the base for this training. Currently CBST is offered for five key sectors in the Maldives: Tourism, Fisheries and Agriculture, Transport, Construction and the Social sectors. These sectors are included as priority sectors that play a vital role in the continued economic growth of the country.

The NCS are developed in consultation with Employment Sector Councils representing employers. They are designed using a consensus format endorsed by the Maldives Qualifications Authority (MQA) to maintain uniformity of approach and the consistency of content amongst occupations. This single format also simplifies benchmarking the NCS against relevant regional and international standards. NCS specify the standards of performance of a competent worker and the various contexts in which the work may take place. NCS also describes the knowledge, skills and attitudes required in a particular occupation. They provide explicit advice to assessors and employers regarding the knowledge, skills and attitudes to be demonstrated by the candidates seeking formal recognition for the competency acquired following training or through work experience. By sharing this information, all participants in the training process have the same understanding of the training required and the standard to be reached for certification. Certification also becomes portable and can be recognized by other employers and in other countries with similar standards. NCS are the foundation for the implementation of the TVET system in Maldives. They ensure that all skills, regardless of where or how they were developed can be assessed and recognized. They also form the foundation for certifying skills in the Maldives National Qualification Framework (MNQF).

<b>Technical Panel members</b>		
<b>Name</b>	<b>Designation</b>	<b>Company</b>
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<b>TVET Authority</b>	-	<b>Ministry of Education</b>

## KEY FOR CODING

### Coding Competency Standards and Related Materials

DESCRIPTION	REPRESENTED BY
Industry Sector as per ESC (Three letters)	Construction Sector ( <b>CON</b> ) Fisheries and Agriculture Sector ( <b>FNA</b> ) Transport sector ( <b>TRN</b> ) Tourism Sector ( <b>TOU</b> ) Social Sector ( <b>SOC</b> ) Foundation ( <b>FOU</b> )
Competency Standard	<b>S</b>
Occupation with in a industry Sector	<b>Two digits 01-99</b>
Unit	<b>U</b>
Common Competency	<b>1</b>
Core Competency	<b>2</b>
Optional/ Elective Competency	<b>3</b>
Assessment Resources Materials	<b>A</b>
Learning Resources Materials	<b>L</b>
Curricula	<b>C</b>
Qualification	<b>Q1, Q2 etc</b>
MNQF level of Qualification	<b>L1, L2 etc</b>
Version Number	<b>V1, V2 etc</b>
Year of endorsement of standard, qualification	<b>By two digits Example- 07</b>

1. Endorsement Application for Qualification 01		
2. NATIONAL CERTIFICATE 3 in Gardening		
<b>3. Qualification code:</b> FNA03SQ2L315	<b>Total Number of Credits :50</b>	
<b>4. Purpose of the qualification</b> The holders of the level three qualifications will provides wide range of practical skills and supporting knowledge to manage and maintain public and private parks, reserves and gardens, natural bushland areas and community recreation area. Also, will have practical skills and supporting knowledge of design and implementation of special plant displays.		
<b>5. Regulations for the qualification</b>	National Certificate III in Gardening will be awarded to those who are competent in unit 1+2+3+4+5+6+7+8+9+1+11+12+13+14+15+16+17+18+19	
6. Schedule of Units		
Unit Title	Unit Title	Code
1	Meet workplace health and safety requirements	FNA03S1U01V1
2	Use hazardous substances safely	FNA03S1U02V1
3	Cooperate in the workplace	FNA03S1U03V1
4	Act in an emergency	FNA03S1U04V1
5	Soil – The foundation of a healthy garden	FNA03S1U05V1
6	Cultivate turf	FNA03S1U06V1
7	Basic gardening management	FNA03S1U07V1
8	Implement a landscape maintenance program	FNA03S1U08V1
9	Establish planted areas	FNA03S1U09V1
10	Operate irrigation systems	FNA03S1U10V1
11	Control weeds	FNA03S1U11V1
12	Control pests and diseases	FNA03S1U12V1
13	Propagate plants	FNA03S1U13V1
14	Provide information on plants, products and treatments	FNA03S1U14V1
15	Maintain an office	FNA03S1U15V1
16	Conduct operational inspection of park facilities	FNA03S1U16V1
17	Install and maintain interior plant displays	FNA03S1U17V1
18	Select chemicals and biological agents	FNA03S1U18V1
19	Implement occupational health & safety policies and guidelines ( OHS Policies and guidelines)	FNA03S1U19V1
<b>7. Accreditation</b>	The training provider should have Horticultural workplace or	

<b>requirements</b>	similar training facility to provide the trainees the hands-on experience related to this qualification
<b>8. Recommended sequencing of units</b>	As appearing under the section 06

<b>1. Endorsement Application for Qualification 2</b>		
<b>2. NATIONAL CERTIFICATE IV in Gardening and Landscaping</b>		
<b>3. Qualification code:</b> FNA03SQ2L315	<b>Total Number of Credits:</b> 170	
<b>4. Purpose of the qualification</b> The holders of the level three qualifications will provide wide range of practical skills and supporting knowledge to manage and maintain public and private parks, reserves and gardens, natural bushland areas and community recreation area. Also, will have practical skills and supporting knowledge of design and implementation of special plant displays.		
<b>5. Regulations for the qualification</b>	National Certificate IV in Gardening and Landscaping will be awarded to those who are competent in unit 1+2+3+4+5+6+7+8+9+10+11+12+13+14 +15+16+17+18+19+20+21+22+23+24+25 +26+27+28+29+30	
<b>6. Schedule of Units</b>		
Unit No	Unit Title	Code
1	Meet workplace health and safety requirements	FNA03S1U01V1
2	Use hazardous substances safely	FNA03S1U02V1
3	Cooperate in the workplace	FNA03S1U03V1
4	Act in an emergency	FNA03S1U04V1
5	Soil – The foundation of a healthy garden	FNA03S1U05V1
6	Cultivate turf	FNA03S1U06V1
7	Basic gardening management	FNA03S1U07V1
8	Implement a landscape maintenance program	FNA03S1U08V1
9	Establish planted areas	FNA03S1U09V1
10	Operate irrigation systems	FNA03S1U10V1
11	Control weeds	FNA03S1U11V1
12	Control pests and diseases	FNA03S1U12V1
13	Propagate plants	FNA03S1U13V1
14	Provide information on plants, products and treatments	FNA03S1U14V1
15	Maintain an office	FNA03S1U15V1
16	Conduct operational inspection of park facilities	FNA03S1U16V1
17	Install and maintain interior plant displays	FNA03S1U17V1
18	Select chemicals and biological agents	FNA03S1U18V1
19	Implement occupational health & safety policies and guidelines (OHS Policies and guidelines)	FNA03S1U19V1
20	Implement a plant nutrition program	FNA03S2U20V1
21	Install irrigation systems	FNA03S2U21V1
22	Set out landscape works	FNA03S2U22V1

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23	Supervise work site activities	FNA03S2U23V1
24	Undertake a site assessment	FNA03S2U24V1
25	Install concrete structures and features	FNA03S2U25V1
26	Install timber structures and features	FNA03S2U26V1
27	Install brick structures and features	FNA03S2U27V1
28	Install masonry structures and features	FNA03S2U28V1
29	Install metal structures and features	FNA03S2U29V1
30	Install water features	FNA03S2U30V1
<b>7. Accreditation requirements</b>		Select chemicals and biological agents
<b>8. Recommended sequencing of units</b>		Implement occupational health & safety policies and guidelines (OHS Policies and guidelines)

### UNIT DETAILS

Unit	Unit Title	Code	Level	No of Credits
1	Meet workplace health and safety requirements	FNA03S1U01V1	3	2
2	Use hazardous substances safely	FNA03S1U02V1	3	2
3	Cooperate in the workplace	FNA03S1U03V1	3	2
4	Act in an emergency	FNA03S1U04V1	3	2
5	Soil – The foundation of a healthy garden	FNA03S1U05V1	3	2
6	Cultivate turf	FNA03S1U06V1	3	3
7	Basic gardening management	FNA03S1U07V1	3	2
8	Implement a landscape maintenance program	FNA03S1U08V1	3	3
9	Establish planted areas	FNA03S1U09V1	3	3
10	Operate irrigation systems	FNA03S1U10V1	3	3
11	Control weeds	FNA03S1U11V1	3	3
12	Control pests and diseases	FNA03S1U12V1	3	3
13	Propagate plants	FNA03S1U13V1	3	3
14	Provide information on plants, products and treatments	FNA03S1U14V1	3	3
15	Maintain an office	FNA03S1U15V1	3	2
16	Conduct operational inspection of park facilities	FNA03S1U16V1	3	3
17	Install and maintain interior plant displays	FNA03S1U17V1	3	3
18	Select chemicals and biological agents	FNA03S1U18V1	3	3
19	Implement occupational health & safety policies and guidelines (OHS Policies and guidelines)	FNA03S1U19V1	3	3
20	Implement a plant nutrition program	FNA03S2U20V1	4	9
21	Install irrigation systems	FNA03S2U21V1	4	9
22	Set out landscape works	FNA03S2U22V1	4	9
23	Supervise work site activities	FNA03S2U23V1	4	9
24	Undertake a site assessment	FNA03S2U24V1	4	12
25	Install concrete structures and features	FNA03S2U25V1	4	12
26	Install timber structures and features	FNA03S2U26V1	4	12
27	Install brick structures and features	FNA03S2U27V1	4	12
28	Install masonry structures and features	FNA03S2U28V1	4	12
29	Install metal structures and features	FNA03S2U29V1	4	12
30	Install water features	FNA03S2U30V1	4	12

**Packaging of National Qualifications:**

National Certificate in III Gardening will be awarded to those who are competent in units

1+2+3+4+5+6+7+8+9+10+11+12+13+14+15+16+17+18+19

Qualification Code: FNA03SQ1L315

National Certificate in IV Gardening and landscaping will be awarded to those who are competent in units

1+2+3+4+5+6+7+8+9+10+11+12+13+14+15+16+17+18+19+20+21+22+23+24+25+26+27  
+28+29+30

Qualification Code: FNA04SQ1L315

## **Description of a Gardner's**

Garden Industry is a horticulture industry found in all across the Maldives. There is a wide diversity of enterprises across the tourism sector.

Likely functions within the Horticulture industry for those who achieve this level of competency include:

- Manage and maintenance of gardens and parks
- Manage and maintenance of natural bushland and community recreation areas
- Design and implementation of Special plant display

## **Competency Standard Development Process**

The competencies were determined based on the analysis of the tasks expected to be performed by the Horticulture professional in the Maldives. The task analysis was based on the existing documents prepared among the experts in the industry and on the advice of the experts in the field of Horticulture training in Maldives. Competency standards used for similar type of training in other countries were also examined

**UNIT- 01**

<b>UNIT TITLE</b>	<b>Meet workplace health and safety requirements</b>				
<b>DESCRIPTOR</b>	This unit addresses the ability of workers to meet workplace occupational health and safety requirements.				
<b>CODE</b>	FNA03S1U01V1	<b>LEVEL</b>	3	<b>CREDIT</b>	2

<b>ELEMENTS OF COMPETENCIES</b>	<b>PERFORMANCE CRITERIA</b>
1. Follow workplace procedure for hazard identification and risk control	1.1. Workplace procedures and work instructions for controlling risks are followed accurately. 1.2. Basic safety checks are undertaken before operation of all machinery and vehicles and hazards are reported to the appropriate supervisor. 1.3. Work for which protective clothing or equipment is required is identified and the appropriate protective clothing or equipment is used in performing these duties in accordance with workplace policy. 1.4. Prior to performing manual handling jobs, risk is assessed and work is carried out according to currently recommended safe practice. 1.5. Risks to bystanders are recognized and action is taken to reduce risk associated with jobs in the workplace. 1.6. All procedures and work instructions for controlling risk are followed closely.
2. Render appropriate emergency procedures	2.1. Individuals maintain the necessary knowledge of and ability to follow

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	<p>procedures for dealing with accidents, fires and emergencies, including communicating location and directions to emergency personnel.</p> <p>2.2. Emergency procedures are followed to company standards and workplace requirements.</p> <p>2.3. Emergency equipment is used in accordance with manufacturers' specifications and workplace requirements.</p> <p>2.4. Appropriate authorities are notified according to company policy.</p>
<p>3. Participate in arrangements for maintaining health and safety of all people in the workplace</p>	<p>3.1. Contributions are made to the on-going monitoring and reporting of all aspects of Occupational Health &amp; Safety (OHS).</p> <p>3.2. Assistance is provided in developing effective solutions to control the level of risk associated with tasks.</p>

Range statement

Procedures included

- Application of relevant occupational health and safety principles and conformity with legislation and codes of practice in the country.
- Hazards in the workplace
- Hazards in workplace which require protective clothing and equipment's
- Hazardous manual such as handling
- Risk to bystanders include run-over and injury associated with vehicles and machinery
- Appropriate health and fitness
- Workplace procedures
- Occupational health and safety(OHS) emergencies

Tools, equipment and materials required may include:

- Relevant procedure manuals

Assessment guide

*Form of assessment*

- Assessment for the unit needs to be holistic and must be observed through real or simulated

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workplace activities.

- Any written or oral examinations may include questions related to personal hygiene, maintaining health & safety requirements

*Assessment context*

Assessment of this unit must be completed on the job or in a simulated work environment which reflects a range of safe working practices.

*Critical aspects*

It is essential that competence is fully observed and there is ability to transfer competence to changing circumstances and to respond to unusual situations in the critical aspects of:

- Maintain personal hygiene and fitness requirements
- Identifying and assessing hazardous situations and rectifying, or reporting to the relevant persons.
- Safely handling and storage of dangerous and/or hazardous goods and substances.
- Applying safe manual handling practices.
- Safely and effectively operating equipment and utilizing materials over the full range of functions and processes for work undertaken on worksite.
- This unit may be assessed in conjunction with all and units which form part of the normal job role

*Assessment conditions*

- Theoretical assessment of this unit must be carried out in an examination room where proper examination rules are followed.
- Assessment of hygienic work practices must be constantly evaluated.
- Assessment must reflect and events processes that occur over a period of time

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**UNDERPINNING KNOWLEDGE AND SKILLS**

<b>Underpinning Knowledge</b>	<b>Underpinning Skills</b>
<ul style="list-style-type: none"><li>• General knowledge of Significant hazards in the working place</li><li>• Basic knowledge of Local emergency services</li><li>• Common knowledge of Personal Hygiene and fitness requirements</li></ul>	<ul style="list-style-type: none"><li>• Ability to follow workplace procedure for hazard identification and risk control</li><li>• Ability to act in an emergency</li><li>• Ability to maintain health and fitness</li><li>• Ability to render first aid</li></ul>

**UNIT- 02**

<b>UNIT TITLE</b>	<b>Use hazardous substances safely</b>				
<b>DESCRIPTOR</b>	<p>This unit addresses the handling of hazardous substances in the workplace.</p> <p>Handling of hazardous substances is likely to be under direct supervision with regular checking. Competency involves the application of knowledge and skills to a limited range of tasks and roles. Recording and reporting is undertaken within established routines using methods and procedures that are predictable.</p>				
<b>CODE</b>	FNA03S1U02V1	<b>LEVEL</b>	3	<b>CREDIT</b>	2

<b>ELEMENTS OF COMPETENCIES</b>	<b>PERFORMANCE CRITERIA</b>
1. Handle hazardous substances	<p>1.1. Specific hazardous substance is identified from the label and applicable manufacturers’ safety data sheet.</p> <p>1.2. Selected hazardous substance is handled in safe containers or packages under instruction from the supervisor or manager.</p>
2. Store hazardous substances	<p>2.1. Storage for hazardous substances is checked for compliance with industry standards in line with instructions.</p> <p>2.2. Regular participation in the conduct of safety audits maximizes the individual’s awareness of safety issues</p> <p>2.3. Required hazardous substances are estimated and industry standard storage conditions established according to instructions</p>
3. Transport hazardous substances	<p>3.1. Transport mode and procedures are established in consultation with the manager or supervisor as instructed.</p>

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	<p>3.2. Hazardous substances are loaded or decanted into secure containers or packaging in line with work programs.</p> <p>3.3. Load is secured or sealed to ensure safety and eliminate spillage according to enterprise policy.</p> <p>3.4. Transport of hazardous substances is completed in line with established procedures and movements recorded according to enterprise policy.</p>
4. Use hazardous substances	<p>4.1. Personal protective equipment suited to the task is selected and fitted or worn.</p> <p>4.2. Selected hazardous substance is removed from storage and utilized in accordance with the label instructions or workplace requirements.</p> <p>4.3. Containers and unused hazardous substances are disposed of in accordance with established workplace procedures.</p>
5. Act in emergency situations with hazardous substances	<p>5.1. Emergency incidence is notified to appropriate authorities in the workplace.</p> <p>5.2. Clear identification of the nature of the emergency is established in consultation with the workplace supervisor.</p> <p>5.3. Direction is sought from the supervisor or workplace notices to establish the role of the individual in the emergency.</p>

Range statement

- Identifying Hazardous substances in the workshop
- Handling and using hazardous substances, use of application equipment, decanting liquids, refueling, transport and cartage, use of industrial gases.

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- Meeting industrial standard or Suitable storage conditions may include security systems, elevated storage, fans and ventilation, drainage systems, separation of incompatible materials, warning signage as required and workplace notices.
- Enterprise policy may include protocols for record keeping, provision of personal protective equipment, instructions to personnel, record of governing legislation.
- Disposal of containers or quantities of left over hazardous substances will be carried out in line with workplace procedures developed from State or local government regulation relating to hazardous substances, Manufacturers label directions, Farm care recommendations.
- Emergency situations may include spilt fuels or other substances, use of incorrect substances, fire, contact with skin or eyes, leaking or damaged containers, explosion, mixing of incompatible materials, contamination of water supplies and container disposal problem

Tools, equipment and materials required may include:

- Relevant procedure manuals

Assessment guide

#### *Form of assessment*

The assessor may use the following assessment methods to objectively assess the candidate:

- Observation
- Questioning
- Practical demonstration
- Any written or oral examinations must include questions related to Handling hazardous substances in work place.

#### *Assessment context*

- Assessment of this unit must be completed on the job or in a simulated work environment which reflects a range of safe working practices. The assessment environment should not disadvantage the candidate.
- Competency needs to be holistic and must be demonstrated in a suitable horticulture workplace condition.

#### *Critical aspects*

It is essential that competence is demonstrated in the knowledge and skills defined in this unit.

These may include the ability to:

- All safety procedures are followed
- Apply required workplace procedures to dispose and handling hazardous substances
- Apply required skills in emergency situations.

UNDERPINNING KNOWLEDGE AND SKILLS

<b>Underpinning Knowledge</b>	<b>Underpinning Skills</b>
<p>A basic working knowledge of:</p> <ul style="list-style-type: none"> <li>- hazardous substances that occur in the rural workplace relevant to the industry sector</li> <li>- the drills and protocols with dealing with hazardous substance issues</li> <li>- who to contact and who to report to in the individual workplace about hazardous substance matters</li> <li>- horticultural mathematics and the basis of horticultural calculations</li> </ul>	<p>The ability to:</p> <ul style="list-style-type: none"> <li>- read and interpret written instructions and hazardous substance labelling</li> <li>- communicate with other workplace personnel</li> <li>- understand and act on verbal instructions</li> </ul> <p>manually or electronically record details of hazardous substance usage or emergency incidence</p> <ul style="list-style-type: none"> <li>- critically observe and accurately report on safety hazards in the workplace</li> <li>- adopt safe work strategies as an integral part of workplace routines</li> </ul>

**UNIT- 03**

<b>UNIT TITLE</b>	<b>Cooperate in the workplace</b>				
<b>DESCRIPTOR</b>	This unit describes the basic level of workplace communication that is expected of workers. Work is likely to be under direct supervision with regular checking. Competency involves the application of knowledge and skills to a limited range of tasks and roles. Recording and reporting is undertaken within established routines using methods and procedures that are predictable.				
<b>CODE</b>	FNA03S1U03V1	<b>LEVEL</b>	3	<b>CREDIT</b>	2

<b>ELEMENTS OF COMPETENCIES</b>	<b>PERFORMANCE CRITERIA</b>
1. Observe and record in the workplace	1.1 Issues and events occurring in the workplace on a daily basis and which may require attention are identified. 1.2 Information is recorded accurately and in the required format. 1.3 Communication technology relevant to the enterprise is used under supervision.
2. Interact with others in the workplace	2.1. Issues or events requiring action or attention are reported to supervisor with the level of detail laid down in workplace instructions. 2.2. Telephone messages are taken accurately, information recorded appropriately and calls redirected to other staff efficiently. 2.3. Work instructions are clarified where necessary and concerns are raised promptly with the supervisor. 2.4. A positive attitude is maintained in interacting with others.
3. Work in a team	3.1. Allocated tasks are identified and completed within defined time-lines. 3.2. Assistance is actively sought by approaching other team members when difficulties arise. 3.3. Feedback provided by others in the working groups is

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	<p>acknowledged.</p> <p>3.4. Appropriate lines of communication with supervisors and peers are demonstrated according to enterprise policy.</p> <p>3.5. Support and tolerance are offered and provided to colleagues.</p> <p>3.6. Participation in team problem solving activities is demonstrated.</p>
<p>4. Meet, greet and direct clients and customers</p>	<p>4.1. Client is greeted in line with enterprise policy.</p> <p>4.2. Questioning and active listening is used to elicit client needs.</p> <p>4.3. Clients with special needs are referred or redirected as required.</p> <p>4.4. A positive attitude is maintained in interacting with clients and customers.</p> <p>4.5. Personal and cultural differences are taken into account when dealing with clients.</p> <p>4.6. Telephone is answered promptly, calls re-directed to appropriate person or messages recorded according to enterprise policy.</p>
<p>5. Maintain personal presentation</p>	<p>5.1. Personal dress is maintained in line with enterprise policy.</p> <p>5.2. Personal grooming and hygiene reflect enterprise policy.</p>

Range statement

- Workplace issues may include personal work duties and roles, personal occupational health and safety, information from other workers and/or customers and clients.

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- Workplace events may include reporting any daily information concerning the immediate work routines such as materials, stock, equipment, tools, plant, watering or irrigation systems.
- Recording may be in writing or verbal.
- Enterprise policy may be in regard to assisting with clients, interacting with supervisors and colleagues, codes of personal hygiene and dress, enterprise position description (delegated responsibilities), organizational development of enterprise.
- Communication technology may include faxes, answering machines, telephone networks, electronic mail (e-mail), simple/basic interaction with computers.
- Customers include those with special needs.

Tools, equipment and materials required may include:

- Relevant procedure manuals

Assessment guide

*Form of assessment*

The assessor may use the following assessment methods to objectively assess the candidate:

- Observation
- Questioning
- Practical demonstration
- Any written or oral examinations may include questions related to required and expected level of workplace communication

*Assessment context*

- Assessment of this unit must be completed on the job or in a simulated work environment which reflects a range of safe working practices. The assessment environment should not disadvantage the candidate.
- Competency needs to be holistic and must be demonstrated in a suitable horticulture workplace condition.

**UNDERPINNING KNOWLEDGE AND SKILLS**

<b>Underpinning Knowledge</b>	<b>Underpinning Skills</b>
	An ability to <ul style="list-style-type: none"><li>• observe and record in the workplace</li></ul>

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<p>A basic knowledge of;</p> <ul style="list-style-type: none"><li>• enterprise policy in relation to greeting and assisting clients and customers</li><li>• location of enterprise layout and resources</li><li>• communication technology and systems used by the enterprise</li><li>• questioning and listening techniques</li><li>• effective interpersonal skills</li></ul>	<ul style="list-style-type: none"><li>• interact with others in the workplace</li><li>• work in a team</li><li>• meet, greet and direct clients and customers</li><li>• maintain personal presentation</li></ul>
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**UNIT- 04**

<b>UNIT TITLE</b>	<b>Act in an emergency</b>				
<b>DESCRIPTOR</b>	This unit is concerned with the ability of workers to respond to workplace emergencies such as fire and other dangerous situations and render first aid in the workplace. Responsibility for some roles and coordination within a team may be required. Competency involves the application of knowledge and skills to a range of tasks and roles. Competencies are usually within established routines, methods and procedures.				
<b>CODE</b>	FNA03S1U04V1	<b>LEVEL</b>	3	<b>CREDIT</b>	2

<b>ELEMENTS OF COMPETENCIES</b>	<b>PERFORMANCE CRITERIA</b>
1. Minimize emergency situations	1.1. Appropriate actions are taken to maximize safety and minimize health hazards in the workshop and on site. 1.2. Machinery handling and actions minimize risks to all personnel. 1.3. Regular checks of the environs are carried out to minimize potential hazards.
2. Plan for emergencies	2.1. Contingency plans are understood and activated for emergencies in compliance with Codes of Welfare and relevant legislation. 2.2. Personal responsibilities are carried out in emergency situations and practice drills. 2.3. Evaluation procedures are implemented to company standards.
3. Act as instructed in emergencies	3.1. Contingency plans are activated for emergencies in compliance with the relevant legislation. 3.2. Emergency procedures are carried out as required by established workplace policy.

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4. Implement fire prevention and control	4.1. Fire hazards are minimized as specified in workshop and fuelling procedures. 4.2. Appropriate fire extinguishers and firefighting plant are used in fire situations and the appropriate authority is notified according to specified procedures. 4.3. Evacuation procedures are implemented as instructed according to workplace policy.
5. Render first aid	5.1. First aid appropriate to the incident is applied. 5.2. The patient is monitored whilst awaiting professional or para-medical support.

Range statement

- Unless otherwise stated directions, specifications and prescriptions come from management or other advisers and may include health, welfare and safety policies, emergency contingency plans, maintenance routines for safeguards and emergency equipment.
- Occupational Health & Safety (OHS) Acts and Regulations apply in all States and Territories.
- Emergency situations may include power failure, quarantine breakdown, fire, flood, storms, heart failure, breathing stopped and serious personal injury.
- Emergency equipment may include first aid kits, fire extinguishers, emergency power generators, chemical spillage kits.

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Tools, equipment and materials required may include:

- Relevant procedure manuals

Assessment guide

*Form of assessment*

The assessor may use the following assessment methods to objectively assess the candidate:

- Observation
- Questioning
- Practical demonstration
- Any written or oral examinations may include questions related to workplace emergencies such as fire and other dangerous situations and render first aid in the workplace.

*Assessment context*

- Assessment of this unit must be completed on the job or in a simulated work environment which reflects a range of safe working practices. The assessment environment should not disadvantage the candidate.
- Competency needs to be holistic and must be demonstrated in a suitable horticulture workplace condition.

**UNDERPINNING KNOWLEDGE AND SKILLS**

<b>Underpinning Knowledge</b>	<b>Underpinning Skills</b>
A basic working knowledge of: <ul style="list-style-type: none"><li>• sources of human injury</li><li>• basic concept of duty of care</li><li>• specific Acts and Regulations relating to emergency situations</li><li>• senior First Aid Certificate</li></ul>	An ability to: <ul style="list-style-type: none"><li>• minimize emergency situations</li><li>• plan for emergencies</li><li>• act as instructed in emergencies</li><li>• implement fire prevention and control</li><li>• render first aid as required</li></ul>

**UNIT- 05**

<b>UNIT TITLE</b>	<b>Soil – The foundation of a healthy garden</b>				
<b>DESCRIPTOR</b>	This Unit of Competency is concerned with the process of knowing whether the soil type is clay, sand, silt, loam, peat or chalk will help to choose the right plants for your garden and maintain them in good health.				
<b>CODE</b>	FNA03S1U05V1	<b>LEVEL</b>	3	<b>CREDIT</b>	2

<b>ELEMENTS OF COMPETENCIES</b>	<b>PERFORMANCE CRITERIA</b>
1. Different soil types	<p>1.1. Soils vary enormously in characteristics, but the size of the particles that make up a soil defines its gardening characteristics:</p> <ul style="list-style-type: none"> <li>- Clay: less than 0.002mm</li> <li>- Silt: 0.002-0.05mm</li> <li>- Sand: 0.05-2mm</li> <li>- Stones: bigger than 2mm in size</li> <li>- Chalky soils also contain calcium carbonate or lime</li> </ul> <p>1.2. Identify different soil types and their characteristics</p>
2. Soil structure	<p>2.1. Good soil structure</p> <ul style="list-style-type: none"> <li>- Has small crumbs, well bound together that do not break up when wet or when dug</li> <li>- Has lots of spaces and channels between crumbs so that water and plant roots can penetrate</li> <li>- Allows air into the root spaces</li> <li>- Allows roots to grow easily</li> <li>- Allows water to be made available to roots but also to drain away.</li> </ul> <p>2.2. Bad soil structure</p> <ul style="list-style-type: none"> <li>- Lacks small crumbs or aggregates</li> <li>- Is hard and compacted or consists of large lumps</li> <li>- Cannot be easily dug, but may be eroded by rain water or wind</li> </ul>

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	<p>2.3. Means plant roots, air and water cannot easily penetrate.</p>
<p>3. Organic matter and content</p>	<p>2.4. Soil which has adequate levels of organic matter is extremely desirable for the growth of healthy plants.</p> <p>Organic matter consists of :</p> <ul style="list-style-type: none"> <li>- Living organisms</li> <li>- Earthworms, arthropods, bacteria and fungi. Most of these play a very important part in the decomposition of dead organic matter, which explains the high population of earthworms usually found under manure and compost heaps.</li> <li>- Dead but identifiable matter</li> <li>- Humus</li> <li>- Humus is the slowly decomposing residues of organic matter after it has initially been worked upon by the living organisms. It is recognized as a black colloidal material which coats the soil particles giving topsoil its dark color. Humus eventually disappears as it is further broken down by bacteria.</li> </ul>
<p>4. Nutrient levels and soil pH</p>	<p>4.1. Plants require twelve essential minerals in order to grow normally, if one of these is not available then the health of the plant will suffer. The major minerals (macro nutrients) which are needed in large quantities are</p> <ul style="list-style-type: none"> <li>- Nitrogen</li> <li>- Phosphorus</li> <li>- Potassium</li> <li>- Magnesium</li> <li>- Calcium</li> <li>- Sulphur.</li> </ul> <p>4.2. The remaining minerals (micro nutrients or trace elements) which are needed in very small quantities are</p> <ul style="list-style-type: none"> <li>- Iron</li> <li>- Boron</li> <li>- Manganese</li> <li>- Copper</li> <li>- Zinc</li> <li>- Molybdenum</li> </ul>

	<p>4.3. Soil pH needs to be considered in conjunction with the nutrient levels present because soil pH greatly influences life in the soil, either directly or indirectly.</p> <p>4.3. The optimum pH for most soils is 6.5 at which all the essential nutrients are available and ideal growing conditions are provided for most plants.</p> <p>4.4. As soils become more acidic or alkaline certain nutrients become unavailable respectively leading to unhealthy plants.</p>
<p>5. Improving soil</p>	<p>5.1. Improving sandy soil. Sandy soils are improved by the regular application of decayed organic matter, which can be:</p> <ul style="list-style-type: none"> <li>- farmyard manure</li> <li>- garden compost</li> <li>- leaf mould</li> <li>- Improving sandy soil by mulching. (proving water retention, and involves the application of organic material to the surface of the soil around plants. This is usually well-rotted manure, compost, leaf mould or bark)</li> </ul> <p>5.3.Improve clay soil by regular application of decayed organic matter which raises the humus level</p> <p>5.4.Improve clay soils: improve drainage and help them resist compaction. Adding lime to a clay soil can also make clay easier to work but this should only be done if your soil is acid.</p> <p>5.5.Improve chalky and other lime rich soils by</p> <ul style="list-style-type: none"> <li>- maintain adequate fertility levels by the regular addition of organic matter.</li> <li>- If the soil is thin and stony then it is worthwhile to remove the larger stones and add more topsoil which is of good quality and from a local source.</li> <li>- Do not be dig these soils to deeply as subsoil and bedrock can easily dilute the topsoil and make it less fertile. The subsoil is a lighter colour than the topsoil so it is easy to see when you are going too deep and you can adjust the cultivation depth accordingly.</li> </ul>

Range statement

- Different soil types and their structure
- Organic matter and its content
- Essential nutrients and minerals for the normal growth of plants
- Methods of improving different soil

Assessment guide

Form of assessment

The assessor may use the following assessment methods to objectively assess the candidate:

- Observation
- Questioning
- Practical demonstration

Assessment context

- Assessment of this unit must be completed on the job or in a simulated work environment which reflects a range of safe working practices. The assessment environment should not disadvantage the candidate.
- Competency needs to be holistic and must be demonstrated in a suitable horticulture workplace condition.

UNDERPINNING KNOWLEDGE AND SKILLS

Underpinning Knowledge	Underpinning Skills
<p>A basic working knowledge of:</p> <ul style="list-style-type: none"> <li>• Different soil types</li> <li>• Structure of different soil types</li> <li>• Organic matter and its contents</li> <li>• Plants that will grow in different soil</li> </ul>	<p>Ability to</p> <ul style="list-style-type: none"> <li>• Identify different soil types and the structure of soil types</li> <li>• Apply appropriate methods in improving soils</li> <li>• Plant flowers, vegetables and fruits in accordance to soil type.</li> </ul>

**UNIT- 06**

<b>UNIT TITLE</b>	<b>Cultivate turf</b>				
<b>DESCRIPTOR</b>	<p>This Unit of Competency is concerned with the process of establishing turf in commercial and domestic recreational situations.</p> <p>Turf establishment is likely to be under limited supervision from others and with checking only related to overall progress. Turf establishment involves the application of horticultural knowledge with depth in some areas and a broad range of horticultural skills. The work is normally done within routines, methods and procedures where some discretion and judgement is required in the selection of machinery and equipment, work organization, services, actions and achieving outcomes within time and budget constraints.</p>				
<b>CODE</b>	FNA03S1U06V1	<b>LEVEL</b>	3	<b>CREDIT</b>	3

<b>ELEMENTS OF COMPETENCIES</b>	<b>PERFORMANCE CRITERIA</b>
1. Plant turf	<p>1.1. Soil is watered according to enterprise guidelines.</p> <p>1.2. Placement and planting method of the plant material is consistent with the plant species.</p> <p>1.3. Newly planted turf is watered and top-dressing is applied according to plan and supervisors instructions.</p> <p>1.4. Tools and equipment chosen are appropriate to the task being undertaken, used according to guidelines and safe working practices are employed.</p>
2. Manage juvenile turf	<p>2.1. Juvenile turf is irrigated and fertilized according to variety and method of planting.</p> <p>2.2. Turf is rolled with a lightweight roller prior to first mowing and mowed according to a specified pattern and height according to the requirements of the enterprise.</p> <p>2.3. Juvenile turf is monitored relative to published data on variety, problems identified and any changes are</p>

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	<p>reported to supervisor according to enterprise policy.</p> <p>2.4. Top dressing is applied according to the establishment plan and where plant health characteristics dictate.</p> <p>2.5. Tools and equipment chosen are appropriate to the task being undertaken, used according to guidelines, and safe working practices are employed.</p>
<p>3. Collect samples for a soil analysis</p>	<p>3.1. Samples are taken from a representative area and accurately labelled according to enterprise guidelines and consultant requirements.</p> <p>3.2. Tools and equipment are chosen appropriate to the task being undertaken, used according to guidelines and safe working practices are employed according to enterprise Occupational Health &amp; Safety (OHS) guidelines.</p>
<p>4. Identify damaged turf</p>	<p>4.1. Plants are observed for health properties according to published data, supplier specifications and historical data.</p> <p>4.2. Turf structure is observed for quality according to published data, industry practice and enterprise guidelines.</p> <p>4.3. Reports and recommendations are made to supervisor according to enterprise guidelines.</p> <p>4.4. Tools and equipment chosen are appropriate to the task being undertaken, used according to guidelines, and safe working practices are employed.</p>

Range statement

- This unit applies to all turf areas such as parks, gardens and sports fields.
- Site conditions may include soil types, moisture content, pH levels, salinity, texture, compaction, aspect, pollutants, toxicity, climate, buildings, road works, shade.
- Elements that will affect the water requirements may include evaporation, wind, transpiration, rain, season, daylight, use of turf, situation.
- Environmental conditions may include wind, rain, sun, shade, humidity.
- Health properties may include strength, wear tolerance, growth rate, colour, recovery rate.
- Irrigation system types may include mains pressure, low pressure, below ground, above ground, spray systems, dripper-systems.
- Observations for turf quality may include upright, stress, growing pattern, variation.
- Plant material may include sprigs, sod, seed, hydro-seed, stolons.
- Plant material is selected according to required characters, soil type, climate and use.
- Planting methods may include sowing, laying, rolling, chaffing, sprigging.
- Requirements for supplementary watering may include volume delivered was not appropriate, dry patches in places.
- Requirements to be monitored may include irrigation, fertiliser, mowing, weeds, pests and diseases.
- Situations where top dressing is appropriate may include joins in sods, to level an area that is “puddling”, to promote lateral growth on after planting practices.
- Soil testing methods may include core sample, penetration test.
- Variables in taking a sample penetration reading may include speed with which readings are taken, time of day, turf use.
- Water distribution variables may include, dry spots, pooling, representative samples, consistency, visually checking sprinklers.
- Enterprise standards may include spacing of core holes, even scarification, no damage to remaining turf.
- Renovation tasks may include fertilising, seeding, top dressing, watering, levelling, installation of barriers and protective measures, scarifying, de-thatching.
- Renovation equipment may include scarifiers, de-thatchers.

Assessment guide

*Form of assessment*

The assessor may use the following assessment methods to objectively assess the candidate:

- Observation
- Questioning
- Practical demonstration
- Any written or oral examinations may include questions related

- Assessment of this unit must be completed on the job or in a simulated work environment which reflects a range of safe working practices. The assessment environment should not disadvantage the candidate.
- Competency needs to be holistic and must be demonstrated in a suitable horticulture workplace condition.

### UNDERPINNING KNOWLEDGE AND SKILLS

<b>Underpinning Knowledge</b>	<b>Underpinning Skills</b>
A basic working knowledge of: <ul style="list-style-type: none"><li>• appropriate agricultural chemicals and concentrations</li><li>• turf identification and growth characteristics</li><li>• soils and turf nutrition</li><li>• fertilizer use and application</li><li>• watering practices</li><li>• common weeds, pests and diseases</li></ul>	An ability to: <ul style="list-style-type: none"><li>• plant turf</li><li>• manage juvenile turf</li><li>• collect samples for a soil analysis</li><li>• interpret the results of a soil analysis</li><li>• identify damaged turf</li></ul>

**UNIT- 07**

<b>UNIT TITLE</b>	<b>Basic gardening management</b>				
<b>DESCRIPTOR</b>	A well-planned garden is easier to care for. It saves time in the garden and is more productive than an unplanned garden. This unit will describe things to be considered at the very initial stage of gardening.				
<b>CODE</b>	FNA03S1U07V1	<b>LEVEL</b>	3	<b>CREDIT</b>	2

<b>ELEMENTS OF COMPETENCIES</b>	<b>PERFORMANCE CRITERIA</b>
1. Planning a garden	<p>1.1. Choose a spot: success of your garden depends greatly on the location.</p> <ul style="list-style-type: none"> <li>- Good soil: a loose, level, fertile, well drained soil is best.</li> <li>- Sunlight: sunlight is necessary to produce healthy high-quality vegetables</li> <li>- Avoid Trees or Shrubs: trees and shrubs compete with garden crops for sunlight, plant food and moisture</li> <li>- Water supply: have a supply of water near your garden site.</li> </ul> <p>1.2. Garden size:</p> <ul style="list-style-type: none"> <li>- the size of the garden plot depends on how much land is available, how much time you intend to spend in the garden, and how much garden produce can be used.</li> </ul>
2. Type of garden	<p>2.1. Choose which type of garden and appropriate conditions for the desired type of garden</p> <p>2.2. Indoor garden: form of indoor gardening is to grow plants in front of windows that receive a decent amount of sunlight. Windows that face south and west are best, and they usually receive enough light to grow leaf and root</p>

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	<p>vegetables (beets, carrots, lettuce, onions, and radishes) and herbs.          Monitor the light available through the window to determine whether there is a sufficient level for an indoor garden.          2.4. Outdoor Gardens          2.5. Decide what type of plant to grow according to the type of garden chosen</p>
3. Site Analysis	<p>3.2. Investigate and evaluate the growing and environmental conditions of potential garden areas such as</p> <ul style="list-style-type: none"> <li>- Size and existing features</li> <li>- Soil</li> <li>- Sunlight</li> <li>- Water sources</li> <li>- Water drainage</li> <li>- Accessibility</li> <li>- Security and safety</li> </ul>
4. Inventory	<p>3.1. Paths. Paths reduce the risk that plants will get trampled, and they organize traffic flow. Make main pathways 4 to 6 feet wide to accommodate wheelchairs and wheelbarrows.          3.2. Irrigation. Although watering by hand using watering cans and/or hoses is an option, drip irrigation and water-conserving sprinkler systems installed before planting will save time and often result in a healthier garden.          3.3. Toolshed or Storage Area. A toolshed or storage area is a good central location for cleaning, organizing, and protecting tools and equipment</p>

Range statement

Plan the garden. Spot and the size of the garden

Type of garden. Indoor /outdoor garden

Type of plants which will grow best in the type of garden chosen

Investigate and evaluate the size and existing features, soil, sunlight, water sources, water drainage, accessibility, security and safety

Form of assessment

The assessor may use the following assessment methods to objectively assess the candidate:

- Observation
- Questioning
- Practical demonstration

Assessment context

- Assessment of this unit must be completed on the job or in a simulated work environment which reflects a range of safe working practices. The assessment environment should not disadvantage the candidate.
- Competency needs to be holistic and must be demonstrated in a suitable horticulture workplace condition.

UNDERPINNING KNOWLEDGE AND SKILLS

<b>Underpinning Knowledge</b>	<b>Underpinning Skills</b>
A basic working knowledge of: <ul style="list-style-type: none"><li>• Planning and designing</li><li>• Types of garden (indoor/outdoor garden) and its requirements</li><li>• Types of plants to grow in different types of garden</li><li>• Evaluating the growing and environmental conditions of potential garden areas such as size and existing features, soil, sunlight, water sources, water drainage, accessibility ad security and safety</li></ul>	Ability to <ul style="list-style-type: none"><li>• Plan and design a garden based on the location and soil</li><li>• Choose right plants for the right type of garden</li><li>• Investigate and evaluate the available garden area</li><li>• To locate good central location for cleaning, organizing, and protecting tools and equipment</li></ul>

**UNIT- 08**

<b>UNIT TITLE</b>	<b>Implement a landscape maintenance program</b>				
<b>DESCRIPTOR</b>	<p>This unit describes the work undertaken by landscapers and others in the implementation of landscape maintenance programs.</p> <p>Maintenance is likely to be under limited supervision from others with checking only related to overall progress. The work involves the application of horticultural knowledge with depth in some areas and a broad range of horticultural skills. Landscape maintenance is normally done within routines, methods and procedures where some discretion and judgement is required in the selection of equipment, work organization, services, actions and achieving outcomes within time constraints.</p>				
<b>CODE</b>	FNA03S1U08V1	<b>LEVEL</b>	3	<b>CREDIT</b>	3

<b>ELEMENTS OF COMPETENCIES</b>	<b>PERFORMANCE CRITERIA</b>
1. Maintain plant protection devices	<p>1.1. Protection devices are checked for their effectiveness according to protection plan requirements.</p> <p>1.2. Broken, damaged, or ineffective components are reported and/or repaired according to terms and conditions of contract.</p> <p>1.3. Protection devices are dismantled and removed according to protection plan requirements.</p>
2. Replace diseased or damaged plants	<p>2.1 Diseased or damaged plants are identified and recorded according to enterprise guidelines.</p> <p>2.2 Plants which are to be replaced are removed and new specimens installed in their place according to maintenance program specifications.</p>

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	<p>2.3 Diseased and damaged plants which are beyond the scope of the maintenance program are reported to the nominated person.</p> <p>2.4 Aftercare is provided to established plants to ensure their health and vigour is maintained according to enterprise guidelines.</p>
<p>3. Maintain landscape areas</p>	<p>3.1 Standard and scope of maintenance is established according to maintenance program.</p> <p>3.2 Site is regularly inspected for remedial action and repairs according to maintenance contract conditions.</p> <p>3.3 Remedial action and repairs are implemented to restore site to full effectiveness according to maintenance contract conditions.</p> <p>3.4 Results of operations are assessed to ensure repairs or renovation objectives and standards have been achieved according to maintenance program details.</p> <p>3.5 Surroundings are returned to a tidy and undamaged condition following operations according to enterprise guidelines.</p> <p>3.6 Work performances of others are monitored and remedial action undertaken to ensure terms and conditions of the contract are maintained.</p>

Range statement

- Equipment used includes spraying equipment, safety equipment, mowers, cutting, digging and chipping equipment and machinery, hand tools.

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- Maintenance programs can incorporate mowing, pruning, weeding, plant replacement, minor structural repairs, spraying, fertilising, re-mulching, pest control, cleaning, adjustment and programming irrigation systems, top soiling, rubbish removal, chipping.

Assessment guide

*Form of assessment*

The assessor may use the following assessment methods to objectively assess the candidate:

- Observation
- Questioning
- Practical demonstration
- Any written or oral examinations may include questions related

*Assessment context*

- Assessment of this unit must be completed on the job or in a simulated work environment which reflects a range of safe working practices. The assessment environment should not disadvantage the candidate.
- Competency needs to be holistic and must be demonstrated in a suitable horticulture workplace condition.

UNDERPINNING KNOWLEDGE AND SKILLS

<b>Underpinning Knowledge</b>	<b>Underpinning Skills</b>
A basic working knowledge of: <ul style="list-style-type: none"><li>• application of specifications to individual areas of work</li><li>• appropriate horticultural practices for heritage and cultural areas</li><li>• principles and applications of an integrated pest management program</li><li>• actions permitted in the event of variations to maintenance contracts</li><li>• sources of hazards encountered in landscape maintenance and measures for their reduction</li></ul>	An ability to: <ul style="list-style-type: none"><li>• maintain plant protection devices</li><li>• replace diseased/damaged plants</li><li>• maintain landscape areas</li></ul>

**UNIT- 09**

<b>UNIT TITLE</b>	<b>Establish planted areas</b>				
<b>DESCRIPTOR</b>	This Unit of Competency is concerned with the work undertaken to implement a large-scale planting program. Planting is likely to be under limited supervision from others with checking only related to overall progress. The work involves the application of arboricultural knowledge with depth in some areas and a broad range of arboricultural skills. Planting is normally done within routines, methods and procedures where some discretion and judgement is required in the selection of equipment, work organization, services, actions and achieving outcomes within time constraints.				
<b>CODE</b>	FNA03S1U01V1	<b>LEVEL</b>	3	<b>CREDIT</b>	3

<b>ELEMENTS OF COMPETENCIES</b>	<b>PERFORMANCE CRITERIA</b>
1.Undertake a soil test	1.1 Soil samples collected are representative of area being tested as specified for the test being undertaken and according to enterprise specifications. 1.2 On-site testing procedures are performed according to manufacturers guidelines and industry practice. 1.3 Off-site testing samples are packaged, documented, labelled and dispatched according to enterprise specifications and testers requirements. 1.4 Sampling records are maintained according to enterprise guidelines.
2. Prepare a planting site	2.1 Tools chosen are appropriate to the task being undertaken, used according to manufacturer’s guidelines and Occupational Health & Safety (OHS) regulations. .2.2 Earthworks are undertaken according to planting plan and/or supervisors’ instructions. .2.3 Soil ameliorants are used as required according to job specifications. 2.4 Positions of plants are marked out on site according to supervisors’ directions and/or plans. 2.5 All competing plants, debris and pollutants are treated according to enterprise guidelines. 2.6 Treatments are selected and applied according to enterprise guidelines and manufacturers instructions.

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<p>4 Plant trees and shrubs according to prepared plan</p>	<p>3.1 All plants are inspected prior to being planted out and all plants with major defects discarded.                      3.2 Broken or damaged plants are trimmed to maintain health and vigour according to enterprise guidelines.                      3.3 Plants are planted at spacing sufficient to enable them to develop their full potential and according to planting program.                      3.4 Individual species are planted with due regard to the specific growing requirements of the species.</p>
<p>4. Nurture newly installed plants</p>	<p>4.1 Newly planted plants are provided with immediate aftercare according to the planting program.                      4.2 Formative pruning is undertaken according to the needs of the species to ensure trees develop a sound framework for the natural growth and habit of the species.                      4.3 Tools and equipment are cleaned, maintained and stored consistent with manufacturers specifications and enterprise guidelines.</p>
<p>5. Oversee planting</p>	<p>5.1 Planting program is monitored according to enterprise guidelines.                      5.2 Plants incorrectly planted or situations which will prevent trees from reaching their full potential are identified and reported according to enterprise guidelines.                      5.3 Remedial action is undertaken to ensure all of the planting program requirements have been implemented.</p>

Range statement

- Site conditions may include soil types, moisture content, pH levels, salinity, texture, compaction, aspect, pollutants, toxicity, climate, buildings, road works, shade.
- Species selected may include exotic, evergreen, native, endemic, deciduous, conifer, palm, shape, habit.
- Establishment methods may include hand planting, mechanical planting, direct seeding, mechanical sowing.
- Earthworks may include irrigation, drainage, ripping, cultivating.
- Major defects may include any condition which will prevent the tree from reaching its full potential.
- Growing requirements may include time of planting, pruning, depth, drainage.
- Nurturing program may include watering, mulching, fertilising, protection, staking, weeding.

*Form of assessment*

The assessor may use the following assessment methods to objectively assess the candidate:

- Observation
- Questioning
- Practical demonstration
- Any written or oral examinations may include questions related

*Assessment context*

- Assessment of this unit must be completed on the job or in a simulated work environment which reflects a range of safe working practices. The assessment environment should not disadvantage the candidate.
- Competency needs to be holistic and must be demonstrated in a suitable horticulture workplace condition.

**UNDERPINNING KNOWLEDGE AND SKILLS**

<b>Underpinning Knowledge</b>	<b>Underpinning Skills</b>
A basic working knowledge of: <ul style="list-style-type: none"><li>• factors affecting the timing and method of planting</li><li>• identification of pests and diseases of trees</li><li>• principles and methods relating to the prevention and control of pests and diseases</li><li>• safety requirements when handling and using hazardous goods</li><li>• nutrient requirements of a range of plant species and cultivars</li><li>• physiology of plant growth</li><li>• techniques for securing/anchoring trees and shrubs</li><li>• plant selection and culture</li><li>• soils and nutrients</li><li>• calculations for materials</li></ul>	An ability to: <ul style="list-style-type: none"><li>• prepare a planting site</li><li>• plant shrubs and trees according to prepared plan</li><li>• nurture newly planted trees</li><li>• oversee tree planting</li></ul>

**UNIT- 10**

<b>UNIT TITLE</b>	<b>Operate irrigation systems</b>				
<b>DESCRIPTOR</b>	<p>This Unit of Competency is concerned with the operation of irrigation systems.                  Work is likely to be under limited supervision with checking related to overall progress. Responsibility for the work of others may be involved and team coordination may be required. Competency involves the application of knowledge with depth in some areas and a broad range of skills. Competencies are normally used within routines, methods and procedures where some discretion and judgement is required in the selection of equipment, work organisation, services, actions and achieving outcomes within time constraints.</p>				
<b>CODE</b>	FNA03S1U10V1	<b>LEVEL</b>	3	<b>CREDIT</b>	3

<b>ELEMENTS OF COMPETENCIES</b>	<b>PERFORMANCE CRITERIA</b>
1.Perform pre-start checks	1.1. Checks of water, power, fuel and lubricants ensure that all are available and the control system is operational. 1.2. Pump is primed if necessary and valves, gates and controls are open or closed as directed. 1.3. Water management devices are in position according to design specifications. 1.4. Pressure and flow testing equipment is calibrated and available.
2.Prepare injection or fertigation equipment	2.1 Injection or fertigation equipment is connected as directed and calibrated according to manufacturers specifications. 2.2 Fertiliser concentration is calculated and the solution thoroughly mixed according to enterprise standards. 2.3 Injection equipment is flushed out until equipment is clean or for approximately ten minutes prior to shut down.
3.Start up and inspect system	3.1 Start up sequence is implemented in accordance with operations manual and water levels and pressure built up slowly as directed. 3.2 All malfunctions, leakages and blockages are corrected or repaired immediately and reported to the supervisor. 3.3 Control system is set to ensure time of application for amount of water required is in accordance with irrigation schedule.

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	3.4 Pressure at the headworks and control valves is within design specifications indicating efficient filter operation and water is distributed evenly to the targeted areas with minimal wastage and run-off.
4. Shut down system based upon irrigation indicators	4.1 4.1 Area is irrigated to the required soil moisture levels and time lag between shut down and end of watering is determined to minimize run-off and deep percolation. 4.2 System components are shut down and drained in sequence according the operations manual and irrigation activity is recorded as required according to enterprise guidelines.

Range statement

- Irrigation systems may include mains pressure, low pressure, below ground, above ground, spray systems, dripper systems, capillary, ebb and flow and flood systems.
- Water sources may include underground water supply, mains or surface storage.
- Irrigation equipment may include pumps, motors, tensiometers, probe tubes, solenoid valves, sprinklers, delivery equipment, sprays, system controllers, disinfestation equipment and filters or other water treatment equipment.
- Testing equipment may include pressure gauges, flow meters.
- Injection/fertigation equipment may include pumps, tanks, strainers and injectors.
- Irrigation systems may range from manual operation and monitoring to fully automated with computer control and monitoring.
- Maintenance may include efficiency testing, run off awareness, filter maintenance, legislative requirements.
- Checks may include flow rates, operating pressures, tail waters.
- Inspections may include solenoid adjustments, priming all laterals to prevent water hammer, sprinkler pressure and output, head ditch, tail water, reuse system, flow rate.
- Fertigation may involve leaf, water and soil analyses.
- Treatment systems for both head and tail water.
- Re-use systems including disinfestation and filtering equipment.

Assessment guide

*Form of assessment*

The assessor may use the following assessment methods to objectively assess the candidate:

- Observation
- Questioning
- Practical demonstration
- Any written or oral examinations may include questions related

*Assessment context*

- Assessment of this unit must be completed on the job or in a simulated work environment which reflects a range of safe working practices. The assessment environment should not

- Competency needs to be holistic and must be demonstrated in a suitable horticulture workplace condition.

#### UNDERPINNING KNOWLEDGE AND SKILLS

<b>Underpinning Knowledge</b>	<b>Underpinning Skills</b>
<p>A basic working knowledge of:</p> <ul style="list-style-type: none"><li>• methods and techniques of irrigation</li><li>• components of an irrigation system</li><li>• characteristics and operation of joints, valves and sprinkler components</li><li>• operation of pumps and water flow rates</li><li>• emergency shut down procedures</li><li>• behaviour of water on varying terrain and soil types</li><li>• soil water retention testing techniques</li><li>• principle and practice in irrigation design</li><li>• water quality and water filtration techniques</li></ul>	<p>An ability to:</p> <ul style="list-style-type: none"><li>• perform pre-start checks</li><li>• prepare injection or fertigation equipment</li><li>• start up and inspect system</li><li>• shut down system based upon irrigation indicators</li></ul>

**UNIT- 11**

<b>UNIT TITLE</b>	<b>Control weeds</b>				
<b>DESCRIPTOR</b>	<p>This Unit of Competency is concerned with the control of weeds and pest plants in horticultural situations. Weed control is likely to be under limited supervision from others with checking only related to overall progress. The work involves the application of horticultural knowledge with depth in some areas and a broad range of horticultural skills. Weed control is normally done within routines, methods and procedures where some discretion and judgement is required in the selection of equipment, work organization, services, actions and achieving outcomes within time constraints.</p>				
<b>CODE</b>	FNA03S1U11V1	<b>LEVEL</b>	3	<b>CREDIT</b>	3

<b>ELEMENTS OF COMPETENCIES</b>	<b>PERFORMANCE CRITERIA</b>
1. Diagnose weed infestation	1.1. Observations support a systematic and demanding analysis of available symptoms. 1.2. Conclusions drawn from relevant information are based on reasoned argument and appropriate evidence. 1.3. Professional advice is obtained where the complexity of the problem or the severity of infestation dictate.
2. Select control measures for the treatment of weeds	2.1. Control measures suited to the infestation are identified from integrated pest management strategy. 2.2. Treatment suited to crop conditions, severity of infestation, marketing
3. Apply treatments to weeds	3.1 Treatments are applied having regard to Occupational Health & Safety (OHS) principles, business requirements and sound horticultural practice. 3.2 Records are maintained as required by legislation and enterprise guidelines.
4. Review weed control programs	4.3 Infestations are monitored and progress compared to manufacturers specifications and enterprise records. 4.4 Treatment programs are modified where necessary and when dictated by progress. 4.5 316.4.3 Supervisor is notified promptly of significant changes to treatments and/or when business implications dictate.

Range statement

**Landscape**

- Weeds may include declared noxious weeds of the region and state.
- Control measures may include chemical and cultural.

**Gardens**

- Weeds may include commonly occurring varieties of the enterprise and region, easily controlled and which may impact on the quality of the garden.
- Control measures may include chemical, cultural, biological, and environmental.

Assessment guide

*Form of assessment*

The assessor may use the following assessment methods to objectively assess the candidate:

- Observation
- Questioning
- Practical demonstration
- Any written or oral examinations may include questions related to workplace emergencies such as fire and other dangerous situations and render first aid in the workplace.

*Assessment context*

- Assessment of this unit must be completed on the job or in a simulated work environment which reflects a range of safe working practices. The assessment environment should not disadvantage the candidate.
- Competency needs to be holistic and must be demonstrated in a suitable horticulture workplace condition.

**UNDERPINNING KNOWLEDGE AND SKILLS**

<b>Underpinning Knowledge</b>	<b>Underpinning Skills</b>
A basic working knowledge of: <ul style="list-style-type: none"> <li>• the characteristics, signs and symptoms of weed infestations of crops</li> <li>• treatment methodologies, behaviour characteristics, withholding periods of various common treatment programs</li> <li>• alternate combinations of treatment methodologies</li> </ul>	An ability to: <ul style="list-style-type: none"> <li>• diagnose weed infestations</li> <li>• select control measures for the treatment of weeds</li> <li>• apply treatments to weeds</li> <li>• review weed control programs</li> </ul>

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| <ul style="list-style-type: none"><li>• local, regional and state based priorities for the use of chemicals in the control of infestations</li><li>• chemical and non-chemical control measures for use and application in the Gardens industry</li><li>• commercial control principles for weeds</li><li>• labelling conventions for the safe use and storage of a variety of chemicals</li><li>• plant biology</li><li>• specialist plant identification</li></ul> |  |
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**UNIT- 12**

<b>UNIT TITLE</b>	<b>Control pests and diseases</b>				
<b>DESCRIPTOR</b>	This Unit of Competency is concerned with the control of plant pests and diseases in a horticultural situation. Pest and disease control are likely to be under limited supervision from others with checking only related to overall progress. The work involves the application of horticultural knowledge with depth in some areas and a broad range of horticultural skills. Pest and disease control are normally done within routines, methods and procedures where some discretion and judgement is required in the selection of equipment, work organisation, services, actions and achieving outcomes within time constraints.				
<b>CODE</b>	FNA03S1U12V1	<b>LEVEL</b>	3	<b>CREDIT</b>	3

<b>ELEMENTS OF COMPETENCIES</b>	<b>PERFORMANCE CRITERIA</b>
1. Diagnose pest and disease infestations	1.1. Observations support a systematic and demanding analysis of available symptoms. 1.2. Samples are collected for laboratory diagnosis where necessary. 1.3. Conclusions drawn from relevant information are based on reasoned argument and appropriate evidence. 1.4. Professional advice is obtained where the complexity of the problem or the severity of infestation dictate.
2. Select control measures for the treatment of pests and diseases	2.1. Control measures suited to infestation are identified from integrated pest management strategy. 2.2. Treatment suited to crop conditions, severity of infestation, marketing requirements and business circumstances is chosen.
3. Apply treatments to pests and diseases	3.1. Treatments are applied having regard to Occupational Health & Safety (OHS) principles, business requirements and sound horticultural practice. 3.2. Records are maintained as required by legislation and enterprise guidelines.
4. Review pest and disease control programs	4.1. Infestations are monitored and progress compared to manufacturers specifications and enterprise records. 4.2. Treatment programs are modified where necessary and when dictated by progress. 4.3. Supervisor is notified promptly of significant changes to treatments and/or when business implications dictate.

Range statement

**Landscape**

- Pests may include proclaimed pests of the region, commonly occurring pests of the region, high risk occasionally occurring pests of the region.
- Diseases may include commonly occurring diseases of the region, high risk occasional diseases of the region.
- Control measures may include chemical, cultural.

**Gardens**

- Pests may include proclaimed pests of the region, commonly occurring pests of the region, high risk occasionally occurring pests of the region.
- Control measures may include chemical, cultural, biological and environmental.

Assessment guide

*Form of assessment*

The assessor may use the following assessment methods to objectively assess the candidate:

- Observation
- Questioning
- Practical demonstration
- Any written or oral examinations may include questions related to workplace emergencies such as fire and other dangerous situations and render first aid in the workplace.

*Assessment context*

- Assessment of this unit must be completed on the job or in a simulated work environment which reflects a range of safe working practices. The assessment environment should not disadvantage the candidate.
- Competency needs to be holistic and must be demonstrated in a suitable horticulture workplace condition.

**UNDERPINNING KNOWLEDGE AND SKILLS**

<b>Underpinning Knowledge</b>	<b>Underpinning Skills</b>
<p>A basic working knowledge of:</p> <ul style="list-style-type: none"> <li>• the characteristics, signs and symptoms of pest and disease infestations of crops</li> <li>• life cycles and physiology of families of pests</li> <li>• characteristics of pathogenic and non-pathogenic diseases in crops</li> <li>• treatment methodologies, behaviour characteristics, withholding periods of various common treatment programs</li> <li>• alternate combinations of treatment methodologies</li> <li>• local, regional and state based priorities for the use of chemicals in the control of infestations</li> <li>• chemical and non-chemical control measures for use and application in the Parks &amp; Gardens industry</li> <li>• labelling conventions for the safe use and storage of a variety of chemicals</li> </ul>	<p>An ability to:</p> <ul style="list-style-type: none"> <li>• diagnose pest and disease infestations</li> <li>• select control measures for the treatment of pests and diseases</li> <li>• apply treatments to pests and diseases</li> <li>• review pest and disease control programs</li> </ul>

**UNIT- 13**

<b>UNIT TITLE</b>	<b>Propagate plants</b>				
<b>DESCRIPTOR</b>	This Unit of Competency is concerned with propagation of plants by sexual and asexual methods. The propagation of plants is likely to be under limited supervision from others with checking only related to overall progress. The propagation of plants is normally done within routines, methods and procedures where some discretion and judgement is required in the selection of equipment, work organisation, services, actions and achieving outcomes within time constraints.				
<b>CODE</b>	FNA03S1U13V1	<b>LEVEL</b>	3	<b>CREDIT</b>	3

<b>ELEMENTS OF COMPETENCIES</b>	<b>PERFORMANCE CRITERIA</b>
1. Select propagation material	1.1 Parent plant is prepared and collection method employed suitable to species and according to enterprise guidelines. 1.2 Maximum viability of propagated material is maintained by conditioning and storage according to the requirements of the species. 1.3 Tools are chosen appropriate to the task being undertaken, used according to enterprise guidelines and safe working practices are employed.
2. Prepare growing media	2.1. Components are prepared according to manufacturer' directions, enterprise guidelines, propagation method and plant needs. 2.2.Storage procedures are performed and hygiene practices followed according to enterprise guidelines.
3. Prepare growing site	3.1.Benches are maintained free from contamination and hygiene practices are followed according to enterprise guidelines. 3.2.Growing environment is prepared to suit species and propagation method, weed retardants are prepared and applied as specified in planting program. 3.3.Tools are chosen appropriate to the task being undertaken, used according to guidelines and safe working practices are employed.
4. Implement propagation method	4.1.Pre-planting treatment is applied and/or carried out appropriate to the propagation method and species, according to enterprise policy. 4.2.Placement and depth are according to planting method and species.

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	<p>4.3.Plants are handled in a way that minimises damage.</p> <p>4.4.Water and nutrients are applied to suit the media conditions, plant requirements and propagation techniques employed, according to supervisors instructions.</p> <p>4.5.Labels and identification are ratified and applied according to enterprise guidelines.</p> <p>4.6.Remedial action is taken as specified in planting program, to control pests and diseases.</p> <p>4.7.Records are completed accurately and at the required time according to enterprise guidelines.</p> <p>4.8.Tools are chosen appropriate to the task being undertaken, used according to guidelines and safe working practices are employed.</p> <p>4.9.Tools and equipment cleaning and storage are performed, and hygiene practices are followed in accordance with enterprise guidelines</p>
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Range statement

- Plants to be propagated may include ornamentals, fruit, nuts, vegetables, herbs, bulbs, fungi.
- Propagation material may include seeds, cuttings, spores, grafted plants, buds, separations/divisions, tissue cultures, rhizomes, plantlets.
- Growing media may include sand, potting mix, gravel, scoria, rock wool, gro-wool, sawdust, pine bark, water (hydroponics).
- Growing environment may include temperature, light, humidity, wind, sun, moisture, topography, rainfall.
- Nutrients may include chemicals, fertilisers, organic material.
- Remedial action may include removal of infected material, treatment with chemicals.
- Weed retardants may include weed-mat, slatted benches, chemical solutions, granular pre-emergent.

Assessment guide

*Form of assessment*

The assessor may use the following assessment methods to objectively assess the candidate:

- Observation
- Questioning
- Practical demonstration
- Any written or oral examinations may include questions related to workplace emergencies such as fire and other dangerous situations and render first aid in the workplace.

Assessment context

- Assessment of this unit must be completed on the job or in a simulated work environment which reflects a range of safe working practices. The assessment environment should not disadvantage the candidate.
- Competency needs to be holistic and must be demonstrated in a suitable horticulture workplace condition.

UNDERPINNING KNOWLEDGE AND SKILLS

<b>Underpinning Knowledge</b>	<b>Underpinning Skills</b>
A basic working knowledge of: <ul style="list-style-type: none"><li>• media mixing and storage procedures</li><li>• selection of media components for plant species' requirements.</li><li>• growing environments and weed retardants that are suited to propagated material</li><li>• pre-planting treatments, water and nutrients suited to propagated material</li><li>• remedial action for weeds, pests and diseases</li><li>• all forms and techniques of propagation</li></ul>	An ability to: <ul style="list-style-type: none"><li>• select propagation material</li><li>• prepare growing media</li><li>• prepare growing site</li><li>• implement propagation method</li></ul>

**UNIT- 14**

<b>UNIT TITLE</b>	<b>Provide information on plants, products and treatments</b>				
<b>DESCRIPTOR</b>	This Unit of Competency is concerned with providing information to clients and others about plants, horticultural products and treatments. The provision of information is likely to be under limited supervision from others with checking only related to overall progress. The provision of information involves the application of horticultural knowledge with depth in some areas and a broad range of horticultural skills. The provision of information is normally done within routines, methods and procedures where some discretion and judgement is required.				
<b>CODE</b>	FNA03S1U14V1	<b>LEVEL</b>	3	<b>CREDIT</b>	3

<b>ELEMENTS OF COMPETENCIES</b>	<b>PERFORMANCE CRITERIA</b>
1. Identify the issue	1.1.Contact is initiated when appropriate according to enterprise client service guidelines. 1.2.Customer is assisted in explaining the issue by the use of active listening and questioning techniques according to enterprise client service guidelines. 1.3.Nature of issue is clarified by gathering all relevant information from client, according to enterprise client service guidelines.
2. Decide on preferred solution	2.1.Options and/or strategies identified and devised are examined and evaluated according to enterprise guidelines and sound problem-solving techniques. 2.2.Optimal solution is determined based on reasoned argument, appropriate evidence, sound horticultural principles and enterprise policy.
3. Provide the preferred solution	2.3.Recommended solution, method of application and probable outcomes are clearly provided to the customer according to enterprise client service guidelines. 2.4.The original supplier of the product is referred to where necessary. 2.5.Customer requests for clarification or expansion are responded to by the use of active listening and questioning techniques according to enterprise client service guidelines.

Range statement

- Horticultural issues may include weeds, pests and diseases control measures, basic garden design, products and services, selection and use of plant materials, local geographical variables.
- Information relevant to a horticultural issue may include soil types, proximity to buildings, environment, positioning, material types.

Assessment guide

Form of assessment

The assessor may use the following assessment methods to objectively assess the candidate:

- Observation
- Questioning
- Practical demonstration
- Any written or oral examinations may include questions related

Assessment context

- Assessment of this unit must be completed on the job or in a simulated work environment which reflects a range of safe working practices. The assessment environment should not disadvantage the candidate.
- Competency needs to be holistic and must be demonstrated in a suitable horticulture workplace condition.

UNDERPINNING KNOWLEDGE AND SKILLS

Underpinning Knowledge	Underpinning Skills
<p>A basic working knowledge of:</p> <ul style="list-style-type: none"> <li>• effective questioning techniques combined with a friendly and helpful manner</li> <li>• a broad range of horticultural and basic garden design issues</li> <li>• legal issues, environmental conditions, regulations, indigenous plants, cultural sensitivities</li> <li>• problem-solving techniques</li> <li>• plant identification and selection</li> <li>• soil characteristics</li> <li>• pest and disease treatments</li> <li>• weed treatments</li> <li>• local horticultural services, products and contractors</li> <li>• duty of care in provision of advice and recommendations</li> </ul>	<p>An ability to:</p> <ul style="list-style-type: none"> <li>• identify the issue</li> <li>• decide on preferred solution</li> <li>• provide the preferred solution</li> </ul>

**UNIT- 15**

<b>UNIT TITLE</b>	<b>Maintain an office</b>				
<b>DESCRIPTOR</b>	This Unit of Competency is concerned with the maintenance of an office for a horticultural enterprise. The maintenance of an office is likely to be under limited supervision from others with checking only related to overall progress. The maintenance of an office is normally done within routines, methods and procedures where some discretion and judgement is required in the selection of equipment, work organisation, services, actions and achieving outcomes within time constraints.				
<b>CODE</b>	FNA03S1U15V1	<b>LEVEL</b>	3	<b>CREDIT</b>	2

<b>ELEMENTS OF COMPETENCIES</b>	<b>PERFORMANCE CRITERIA</b>
1. Maintain records	1.1. A recording system is implemented to meet enterprise requirements. 1.2. Records are kept updated according to company policy. 1.3. Records are stored and retrieved according to company policy.
2. Collate field data	2.1. Data is compiled from a range of sources in an accurate and scientifically valid manner. 2.2. Collected data is sorted and presented in an easily recognisable format. 2.3. Data is analysed in a scientifically valid manner in conjunction with the supervisor.
3. Monitor stocks	1.1. A monitoring system is implemented according to enterprise requirements. 1.2. Stocks on hand are recorded following company policy. 1.3. Inventory balances are kept up to date as prescribed by enterprise requirements. 1.4. Usage is recorded according to company policy.
4. Arrange purchase of materials	4.1. Quotes are obtained from alternative suppliers. 4.2. Suppliers are selected according to company policy. 4.3. Orders are placed in line with enterprise requirements. 4.4. Delivery is arranged according to company policy. 4.5. Dispatch is recorded according to company policy.

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5. Implement office security	5.1. Assets are secured according to company guidelines.
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Range statement

- Scientifically valid manner means data is reliable, repeatable and unbiased.
- Presentation of data may include graphs, tables, reports, computer spreadsheets.
- Company policy may include type of monitoring system to use, how often to be monitored, notification of low stock, budget restraints, types of stock to re-order, recording system.
- Stocks may include any material used in the workplace.
- Data may include weather data, irrigation, pest incidence, beneficial insects, soil information.

Assessment guide

*Form of assessment*

The assessor may use the following assessment methods to objectively assess the candidate:

- Observation
- Questioning
- Practical demonstration
- Any written or oral examinations may include questions related

*Assessment context*

- Assessment of this unit must be completed on the job or in a simulated work environment which reflects a range of safe working practices. The assessment environment should not disadvantage the candidate.
- Competency needs to be holistic and must be demonstrated in a suitable horticulture workplace condition.

UNDERPINNING KNOWLEDGE AND SKILLS

<b>Underpinning Knowledge</b>	<b>Underpinning Skills</b>
A basic working knowledge of: <ul style="list-style-type: none"> <li>• different recording systems - advantages and disadvantages of each</li> <li>• different monitoring systems - advantages and disadvantages of each</li> <li>• different presentation styles of field data</li> <li>• numeracy and literacy</li> </ul>	An ability to: <ul style="list-style-type: none"> <li>• maintain records</li> <li>• collate field data</li> <li>• monitor stocks</li> <li>• arrange purchase of materials</li> <li>• implement office security</li> </ul>

**UNIT- 16**

<b>UNIT TITLE</b>	<b>Conduct operational inspection of park facilities</b>				
<b>DESCRIPTOR</b>	This unit describes the operational inspection of park facilities to identify hazards, existing and/or potential risks and non-conformities with Australian Standards and Occupational Health & Safety issues. Work is likely to be under limited supervision from others and with checking only related to overall progress. The work is normally done within routines, methods and procedures where some discretion and judgement is required in the selection of equipment, work organisation, services, actions and achieving outcomes within time constraints				
<b>CODE</b>	FNA03S1U16V1	<b>LEVEL</b>	3	<b>CREDIT</b>	3

<b>ELEMENTS OF COMPETENCIES</b>	<b>PERFORMANCE CRITERIA</b>
1. Prepare for operational inspection	1.1. Specific facilities and equipment for inspection are determined according to operational request. 1.2. Equipment test and check procedures are carried out in line with enterprise policy. 1.3. Appropriate checklists and reporting formats are prepared to suit the application. 1.4. Different types of facilities are identified from checklist descriptions. 1.5. Specific terminology used in checklists are clarified with the supervisor.
2. Undertake operational inspection	1. Modes of non-conformity with Australian Standards, Occupational Health and Safety guidelines and enterprise standards are recorded. Visible hazards, indications and signs of hidden faults are 1.6. detected and recorded 1.7. 335.2.3 Checklist entries are concise and accurate. 1.8. 335.2.4 Inspections undertaken in efficient and safe manner 1.9. according to enterprise policy. 1.10. 335.2.5 The organisation's 'Playground Safety Management System' is implemented in line with industry 1.12. standards. 1.13. 335.2.6 Specific terminology used in checklists are clarified.

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	1.14. Tools and equipment used for testing are identified.
3. Recommend effective rectification action	1.15. 335.3.1 Situations requiring urgent action are reported immediately 1.16. to supervisors. 1.17. 335.3.2 Recommendations required to rectify non-conformities are 1.18. noted and actioned as required. 1.19. 335.3.3 An inspection report is submitted to supervisor according to 1.20. enterprise policy.

Range statement

- Facilities and equipment may include playgrounds, playground softfall and pathways, play equipment, parks and street furniture and structures, fences, barbeques, steps and stairs, bollards and tree/grass protection devices, and paved, turf and/or grassed recreational areas.

- Visible hazards may include damaged parts, broken glass, loss of soft surfacing, protruding nails, bolts and splinters, sudden changes in surface levels such as holes and trip points, and worn, rusted and weathered components.

- Non-conformities may include obvious or hidden hazards, worn or damaged components such as bearings and moving joints, and structural instability, and defective operation of equipment.

Assessment guide

*Form of assessment*

The assessor may use the following assessment methods to objectively assess the candidate:

- Observation
- Questioning
- Practical demonstration
- Any written or oral examinations may include questions related

*Assessment context*

- Assessment of this unit must be completed on the job or in a simulated work environment which reflects a range of safe working practices. The assessment environment should not disadvantage the candidate.
- Competency needs to be holistic and must be demonstrated in a suitable horticulture workplace condition.

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**UNDERPINNING KNOWLEDGE AND SKILLS**

<b>Underpinning Knowledge</b>	<b>Underpinning Skills</b>
A basic working knowledge of <ul style="list-style-type: none"><li>• range of park facilities and equipment</li><li>• terminology used to describe different components of facilities</li><li>• different modes of non-conformity</li><li>• reporting requirements</li><li>• facility use and safety parameters</li><li>• practical elements of test and check procedures</li><li>• material construction and maintenance principles.</li></ul>	An ability to <ul style="list-style-type: none"><li>• prepare for operational inspection</li><li>• undertake operational inspection</li><li>• submit inspection report</li></ul>

**UNIT- 17**

<b>UNIT TITLE</b>	<b>Install and maintain interior plant displays</b>				
<b>DESCRIPTOR</b>	<p>This Unit of Competency is concerned with the installation and maintenance work associated with interior plant displays in buildings and offices.</p> <p>The installation and maintenance of a interior plant displays is likely to be under limited supervision from others with checking only related to overall progress. Installation and maintenance involves the application of horticultural knowledge with depth in some areas and a broad range of horticultural skills. Interior plant display installation and maintenance is normally done within routines, methods and procedures where some discretion and</p> <p>0 judgement is required</p>				
<b>CODE</b>	FNA03S1U17V1	<b>LEVEL</b>	3	<b>CREDIT</b>	3

<b>ELEMENTS OF COMPETENCIES</b>	<b>PERFORMANCE CRITERIA</b>
1. Assess interior spaces prior to plant scaping	1.1 Access factors are assessed and recorded prior to installation. 1.2 Environmental factors are assessed and recorded prior to installation. 1.3 Growing conditions and constraints are analysed and recorded. 1.4 Light sources in regard to both plant growth and client requirements are noted.
2. Install containerised and direct planted specimens	2.1 Pre-installation materials, equipment, machinery and personnel required for the job are listed and scheduled according to a given plan or specifications. 2.2 Direct planted and containerised material are installed according to the given plan or specifications. 2.3 Plants are installed securely so that they are well presented, accessible for routine maintenance and conform to the plan or specifications. 2.4 Damaged or unnecessary material is pruned to enhance the presentation. 2.5 Plants are watered and fertilised as required according to enterprise policy.

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	2.6 The site is left in a clean and tidy state following installation of plants.
3. Maintain indoor plants	<p>3.1 The symptoms of under and over-watering in indoor plants are detected by hand and with the aid of a water meter.</p> <p>3.2 Corrective action for under and over watering is actioned according to enterprise standards.</p> <p>3.3 The symptoms of low and high light intensity are detected using a light meter.</p> <p>3.4 Corrective action to rectify the direction, quality and intensity of light is actioned according to plant locations.</p> <p>3.5 The symptoms of low and high fertiliser concentration are detected and the pH of the growing medium is measured.</p> <p>3.6 Insects, pests and diseases associated with indoor plants are detected and controlled. as required.</p> <p>3.7 Indoor plants are regularly cleaned, trained, trimmed and pruned as part of maintenance routines.</p> <p>3.8 Cleaning agents are selected and decorative containers are cleaned as required.</p>
4. Prepare, maintain and revive indoor plants	<p>4.1 The cost benefit of reviving plants is determined in line with site requirements.</p> <p>4.2 A range of pruning techniques are used which will give plants (in baskets, on totems, as standards or braids and bonsai) the desired shape and size for a plantscape.</p>

Range statement

- Access factors include time constraints, parking restrictions, stairs and level changes, watering facilities, room surface finishes, work areas, colours, lift size, equipment needed, loading bay (walls, floor, furnishings), spatial volume and room use.
- Environmental factors include room temperature range, light intensity, air circulation and ventilation, humidity and drainage.
- Light sources include natural, incandescent, fluorescent and metal halide lights.

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Tools, equipment and materials required may include:

- Relevant procedure manuals

Assessment guide

*Form of assessment*

The assessor may use the following assessment methods to objectively assess the candidate:

- Observation
- Questioning
- Practical demonstration
- Any written or oral examinations may include questions related to workplace emergencies such as fire and other dangerous situations and render first aid in the workplace.

*Assessment context*

- Assessment of this unit must be completed on the job or in a simulated work environment which reflects a range of safe working practices. The assessment environment should not disadvantage the candidate.
- Competency needs to be holistic and must be demonstrated in a suitable horticulture workplace condition.

**UNDERPINNING KNOWLEDGE AND SKILLS**

<b>Underpinning Knowledge</b>	<b>Underpinning Skills</b>
A basic working knowledge of: <ul style="list-style-type: none"><li>• physical and perceptual characters of plants</li><li>• attributes of plants commonly used in interior plant scaping</li><li>• indoor plant growth</li><li>• light and moisture tolerance/intolerance for common indoor plant species</li><li>• photosynthesis, respiration, nutrient uptake and growth rate</li><li>• acclimatisation techniques for indoor plants</li></ul>	An ability to: <ul style="list-style-type: none"><li>• assess interior spaces prior to plant scaping</li><li>• install containerised and direct planted specimens</li><li>• maintain indoor plants in-situ</li><li>• prepare, maintain and revive indoor plants</li></ul>

**UNIT- 18**

<b>UNIT TITLE</b>	<b>Select chemicals and biological agents</b>				
<b>DESCRIPTOR</b>	<p><b>Unit Descriptor</b> This unit covers the responsibility workers have for the selection and preparation of chemicals and biological agents for others who may apply them.</p> <p>The selection of chemicals and biological agents is likely to be under limited supervision from others with checking only related to overall progress. The work involves the application of horticultural knowledge with depth in some areas and a broad range of horticultural skills. Selection is normally done within routines, methods and procedures where some discretion and judgement is required in the selection of equipment, work organisation, services, actions and achieving outcomes within time constraints.</p>				
<b>CODE</b>	FNA03S1U18V1	<b>LEVEL</b>	3	<b>CREDIT</b>	3

<b>ELEMENTS OF COMPETENCIES</b>	<b>PERFORMANCE CRITERIA</b>
1. Select appropriate chemical	1.1 Chemical and biological agents selected are as determined or prescribed and are consistent with user requirements.
2. Select application equipment	2.1 Application equipment appropriate to the chemicals and biological agendas and situations are selected, adjusted and calibrated to industry or enterprise standards. 2.2 Application methods and equipment are consistent with label specifications and health and safety regulations.
3. Determine chemicals appropriate to the identified problem	3.1 Chemicals determined are consistent with label specifications, with regard to dosage and application rates
4. Determine chemicals which are consistent with user requirements and capabilities	4.1 Chemicals determined are cost effective and minimise environmental and human impact. 4.2 Phytotoxicity, compatibility and detrimental impacts to end product are also determined. 4.3 Most appropriate formulation is selected. 4.4 Weather conditions are assessed as suitable for the application of determined chemical.

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	4.5 Regulations and legislation relevant to the situation are observed
5. Use personal protective equipment	5.1 Tools, equipment and personal protective equipment appropriate to the task are selected, and used as determined by label directions, material safety data sheet or industry or enterprise standards.
6. Prepare application requirements	6.1 Mixing procedures comply with label directions and health and safety regulations are used. 6.2 Compatibility of products and quantity of water are determined. 6.3 Calculations comply with label directions.

Range statement

- Types of formulation may include emulsifiable concentrates, gases, baits, pellets, liquid concentrates, powder, granules, suspension concentrates.
- Types of chemicals may include insecticides, herbicides, fungicides, algacides, growth regulators, growth regulators, bio-agents.
- Control methods may include chemical, mechanical, biological, cultural, hygiene.
- Regulations may include industry codes of practice, State and Federal Acts, local government by-laws.
- Biological agents may include viruses, bacteria, fungi, nematodes, lures, pheromones.

Tools, equipment and materials required may include:

- Relevant procedure manuals

Assessment guide

*Form of assessment*

The assessor may use the following assessment methods to objectively assess the candidate:

- Observation
- Questioning
- Practical demonstration
- Any written or oral examinations may include questions related to workplace emergencies such as fire and other dangerous situations and render first aid in the workplace.

Assessment context

- Assessment of this unit must be completed on the job or in a simulated work environment which reflects a range of safe working practices. The assessment environment should not disadvantage the candidate.
- Competency needs to be holistic and must be demonstrated in a suitable horticulture workplace condition.

UNDERPINNING KNOWLEDGE AND SKILLS

Underpinning Knowledge	Underpinning Skills
<p>A basic working knowledge of:</p> <ul style="list-style-type: none"><li>• the location and significance of information provided on a label of a horticultural chemical container</li><li>• the sources of specific information with regard to chemicals, including the Material Safety Data Sheet, State Department of Primary Industry (DPI) publications and “Peskem”</li><li>• incorporating cultural, chemical, mechanical, biological and quarantine controls</li><li>• the requirements and responsibilities in relation to relevant state legislation relating to correct storage facilities and maintenance procedures.</li></ul>	<p>An ability to:</p> <ul style="list-style-type: none"><li>• determine chemicals appropriate to the identified problem</li><li>• determine chemicals which are consistent with user requirements and capabilities</li><li>• select appropriate chemicals and biological agents</li><li>• use personal protective equipment</li><li>• fill application equipment</li></ul>

**UNIT- 19**

<b>UNIT TITLE</b>	<b>Implement occupational health &amp; safety policies and guidelines ( OHS Policies and guidelines)</b>				
<b>DESCRIPTOR</b>	<p>This Unit of Competency is concerned with the implementation of Occupational health and safety policies and guidelines in a horticultural workplace and/or work site.</p> <p>Work is likely to be under limited supervision with checking related to overall progress. Responsibility for the work of others may be involved and team coordination may be required.</p> <p>Competencies are normally used within routines, methods and procedures where some discretion and judgement is required in the selection of equipment, work organisation, services, actions and achieving outcomes within time constraints.</p>				
<b>CODE</b>	FNA03S1U19V1	<b>LEVEL</b>	3	<b>CREDIT</b>	3

<b>ELEMENTS OF COMPETENCIES</b>	<b>PERFORMANCE CRITERIA</b>
1. Provide information to the work group	<p>1.1 Relevant provisions of Occupational Health &amp; Safety (OHS) legislation, regulations and codes of practice are accurately and clearly explained to the work group.</p> <p>1.2 Information on the organisation’s Occupational Health &amp; Safety (OHS) policies, procedures and programs is provided in a readily accessible manner and is accurately and clearly explained to the work group.</p> <p>1.3 Information about identified hazards and the outcomes of risk assessment and risk control procedures is regularly provided and is accurately and clearly explained to the work group.</p>
2. Implement and monitor participative arrangements for the management of Occupational Health & Safety (OHS)	<p>2.1 Organisational procedures for consultation on Occupational Health &amp; Safety (OHS) issues are implemented and monitored to ensure that all members of the work group have the opportunity to contribute.</p> <p>2.2 Issues raised through consultation are dealt with and resolved promptly or referred to the appropriate personnel for resolution according to workplace procedures for issue resolution.</p>

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	2.3 The outcomes of consultation over Occupational Health & Safety (OHS) issues are made known promptly to the work group.
3. Implement and monitor the organisation's procedures for identifying hazards and assessing risks	3.1 Existing and potential hazards in the work area are identified and reported so that risk assessment and risk control procedures can be applied.
4. Implement and monitor the organisation's procedures for controlling risks	3.2 Work procedures to control risks are implemented and adherence to them by the work group is monitored according to workplace procedures. 3.3 Existing risk control measures are monitored and results reported regularly according to workplace procedures. 3.4 Inadequacies in resource allocation for implementation of risk control measures are identified and reported to designated personnel.
5. Implement and monitor the organisation's procedures for providing Occupational Health & Safety (OHS) training	5.1 Occupational Health & Safety (OHS) training needs are identified accurately, specifying gaps between Occupational Health & Safety (OHS) competencies required and those held by work group members. 5.2 Arrangements are made for fulfilling identified Occupational Health & Safety (OHS) training needs in both on and off-the-job training programs in consultation with relevant parties.
6. Implement and monitor the organisation's procedure for maintaining Occupational Health & Safety (OHS) records	6.1 Occupational Health & Safety (OHS) records for the work area are accurately and legibly completed according to workplace requirements for Occupational Health & Safety (OHS) records and legal requirements for the maintenance of records of occupational injury and disease. 6.2 Aggregate information from the area's Occupational Health & Safety (OHS) records is used to identify hazards and monitor risk control procedures within the work area according to organisational procedures and within the scope of responsibilities and competencies.

Range statement

- Occupational Health & Safety (OHS) legislation may include general duty of care; requirements for the maintenance and confidentiality of records of occupational injury and disease; provision of information

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and training; regulations and codes of practice relating to hazards present in work area; health and

safety representatives and occupational health and safety committees; issue resolution.

- Hazardous events may include accidents, fires and emergencies such as chemical spills or bomb scares.

Procedures for dealing with them may include evacuation, chemical containment and first aid procedures.

- Workplace procedures for Occupational Health & Safety (OHS) may include inspection; housekeeping; consultation processes, either general or specific to Occupational Health & Safety (OHS), training and assessment; specific hazard policies and procedures; Occupational Health & Safety (OHS) information; Occupational Health & Safety (OHS) record keeping; maintenance of plant

and equipment; purchasing of supplies and equipment; counselling/disciplinary processes.

Tools, equipment and materials required may include:

- Relevant procedure manuals

*Assessment guide*

*Form of assessment*

The assessor may use the following assessment methods to objectively assess the candidate:

- Observation
- Questioning
- Practical demonstration
- Any written or oral examinations may include questions related to workplace emergencies such as fire and other dangerous situations and render first aid in the workplace.

*Assessment context*

- Assessment of this unit must be completed on the job or in a simulated work environment which reflects a range of safe working practices. The assessment environment should not disadvantage the candidate.
- Competency needs to be holistic and must be demonstrated in a suitable horticulture workplace condition.

**UNDERPINNING KNOWLEDGE AND SKILLS**

<b>Underpinning Knowledge</b>	<b>Underpinning Skills</b>
A basic working knowledge of <ul style="list-style-type: none"><li>• applicable Occupational Health &amp; Safety (OHS) legislation, regulations and Codes of Practice</li><li>• the hierarchy of control</li></ul>	An ability to <ul style="list-style-type: none"><li>• provide information to the work group</li><li>• implement and monitor participative arrangements for the management of Occupational Health &amp;</li></ul>

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<ul style="list-style-type: none"><li>• risk assessment and control</li><li>• Occupational Health &amp; Safety (OHS) record keeping</li></ul>	<p>Safety (OHS)</p> <ul style="list-style-type: none"><li>• implement and monitor the organisation's procedures for identifying hazards and assessing risks</li><li>• implement and monitor the organisation's procedures for controlling risks</li><li>• implement and monitor the organisation's procedures for providing Occupational Health &amp; Safety (OHS) training</li><li>• implement and monitor the organisation's procedures for maintaining Occupational Health &amp; Safety (OHS) records</li></ul>
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**UNIT-20**

<b>UNIT TITLE</b>	<b>Implement a plant nutrition program</b>				
<b>DESCRIPTOR</b>	This Unit of Competency is concerned with implementing a plant nutrition program in the horticultural industry. Implementing a plant nutrition program is likely to be under limited supervision from others and with checking only related to overall progress. The implementation of a plant nutrition program at this level involves the application of horticultural knowledge with depth in some areas and a broad range of horticultural skills. The work is normally done within a program, routines, methods and procedures where some discretion and judgement is required in the selection of equipment, work organisation, services, actions and achieving outcomes within time constraints.				
<b>CODE</b>	FNA03S2U20V1	<b>LEVEL</b>	4	<b>CREDIT</b>	9

<b>ELEMENTS OF COMPETENCIES</b>	<b>PERFORMANCE CRITERIA</b>
1. Monitor soil pH.	1.1 Soil pH in the field or growing media is monitored in relation to plant nutrition and in accordance with enterprise policy. 1.2 Products useful in changing soil pH are identified and sourced according to enterprise policy.
2. Determine nutritional problems in plants.	2.1 Common nutrient deficiency and toxicity problems in plants are identified using visual methods. 2.2 Supervisor and/or nutritional specialist are consulted as required to determine nutritional or toxicity problems. 2.3 Soils are modified to improve soil fertility according to the enterprise nutrition program.
3. Prepare for fertiliser use.	3.1 The type of fertiliser for use is selected according to crop requirements, soil types and the enterprise nutrition program. 3.2 Fertiliser applications are timed according to the crop growing cycle and the enterprise fertiliser calendar. 3.3 Fertiliser application methods are compared in the light of types of fertiliser, crop needs and enterprise guidelines. 3.4 Fertilisers are handled and stored safely, in an environmentally friendly manner and according to legislative requirements and industry guidelines.

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3. Apply specific fertilisers and rates of application.	4.1 Fertiliser labels are read and interpreted accurately. 4.2 Fertiliser and nutrient application rates are calculated. 4.3 Specific fertilisers are selected based on their analysis to meet enterprise needs. 4.4 Specific fertilisers are applied at the correct rate, timing and method according to the fertiliser, crop needs and enterprise guidelines. 4.5 Fertiliser applications are recorded according to enterprise policy. 4.6 The effects of the fertiliser program are monitored, documented and reported according to enterprise policy.
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Range statement

- Soils may include field sites and specialist growing media.
- Soil surveying equipment may include equipment for pH testing such as CSIRO Innoculo soil test kit or electronic pH testing device, hand held salinity/EC meter, tape measure, plastic overlays, aerial photographs, charts and tables of soil characteristics.
- Soil ameliorants to improve fertility may include cover crops, animal manures, gypsum, lime.
- Fertilisers may include solids, liquids, gases, artificial, organic, ground applied, foliar.
- Application methods may include banding, broadcasting, ripping, spraying, fertigation.

Tools, equipment and materials required may include:

- Relevant procedure manuals

Assessment guide

*Form of assessment*

The assessor may use the following assessment methods to objectively assess the candidate:

- Observation
- Questioning
- Practical demonstration
- Any written or oral examinations may include questions related to workplace emergencies such as fire and other dangerous situations and render first aid in the workplace.

*Assessment context*

- Assessment of this unit must be completed on the job or in a simulated work environment which reflects a range of safe working practices. The assessment environment should not

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disadvantage the candidate.

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- Competency needs to be holistic and must be demonstrated in a suitable horticulture workplace condition.

#### UNDERPINNING KNOWLEDGE AND SKILLS

<b>Underpinning Knowledge</b>	<b>Underpinning Skills</b>
A basic working knowledge of <ul style="list-style-type: none"><li>• the relationship between soil characteristics and nutrient availability to plants</li><li>• macro and micro elements</li><li>• nutrient cycling</li><li>• sources of plant nutrients</li><li>• nutrient uptake by plants</li><li>• nutrient deficiency/toxicity symptoms</li><li>• types and characteristics of fertilisers</li><li>• soil ameliorants</li></ul>	An ability to <ul style="list-style-type: none"><li>• monitor soil pH</li><li>• determine nutritional problems in plants</li><li>• prepare for fertiliser use</li><li>• apply specific fertilisers and rates of application</li></ul>

**UNIT-21**

<b>UNIT TITLE</b>	<b>Install irrigation systems</b>				
<b>DESCRIPTOR</b>	<p>This Unit of Competency is concerned with the installation of irrigation systems.</p> <p>Irrigation installation is likely to be under limited supervision from others with checking only related to overall progress. The work involves the application of horticultural knowledge with depth in some areas and a broad range of horticultural skills. Irrigation installation is normally done within routines, methods and procedures where some discretion and judgement is required in the selection of equipment, work organisation, services, actions and achieving outcomes within time constraints and may include the coordination of other tradespersons such as plumbers and electricians.</p>				
<b>CODE</b>	FNA03S2U21V1	<b>LEVEL</b>	4	<b>CREDIT</b>	9

<b>ELEMENTS OF COMPETENCIES</b>	<b>PERFORMANCE CRITERIA</b>
1.Organise resource requirements	<p>1.1 Parts and equipment delivered to site are checked according to system drawings and specifications.</p> <p>1.2 Work team is briefed on installation or modification procedures and requirements and jobs and tasks allocated.</p> <p>1.3 Equipment and machinery is in good working condition and safety hazards are identified.</p>
2.Prepare a site in accordance with plans and specifications	<p>2.1 Measurement and marking out of irrigation lines is consistent with plan.</p> <p>2.2 Trenches where constructed are at the specified depth without damage to services, facilities, features and established plants.</p> <p>2.3 Equipment operation and work practices conform with enterprise OHS guidelines.</p> <p>2.4 Regulations and legislation relevant to the situation are observed.</p> <p>2.5 Work practices reflect sustainable horticulture principles and respond to local community requirements.</p>
3.Install irrigation components	<p>3.1 Plan is interpreted and where applicable, contractors are supervised and work is monitored to conform to plan.</p> <p>3.2 Components are assembled and connected according to</p>

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	<p>plan, joints are completed and tested according to manufacturers specifications.</p> <p>3.3 Fittings and valves are fitted and adjusted to requirements of the installation plan, and all joints are secured according to enterprise guidelines.</p> <p>3.4 Earthworks are finished off to specification.</p> <p>3.5 The system configuration and capacity match the installation plan.</p> <p>3.6 The site is restored to its original condition after works completion.</p> <p>3.7 Tools are chosen appropriate to the task being undertaken, used according to guidelines and safe working practices are employed.</p>
<p>4.Commission irrigation system</p>	<p>4.1 Startup sequence is in accordance with operations manual.</p> <p>.4.2 System is flushed as required.</p> <p>.4.3 Operating faults are identified and corrective actions taken according to operations manual.</p> <p>4.4 Testing and monitoring equipment is calibrated to manufacturers specifications.</p> <p>4.5 Regular monitoring ensures that the system operates according to design specifications.</p>

Range statement

- Irrigation systems may include mains pressure, low pressure, below ground, above ground, spray systems, dripper, capillary, ebb and flow and flood systems.
- Irrigation equipment may include pumps, motors, delivery equipment, sprays, system controllers.
- Testing equipment may include pressure gauges, flow meters.
- Water supply may be underground, mains or surface storage.
- Machinery may include graders, back hoes, front end loaders, ploughs, molding boards.
- Fixtures may include dams, bores, windmills, tanks, channels.
- Equipment may include injectors, pumps, tensiometers, probe tubes, flow meter, cath cans, pressure gauge, computer and/or other scheduling devices, recycling equipment, spray equipment.
- Materials may include gland packing, rubber rings, belts and pulleys, hazardous substances, chemicals.

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- Irrigation systems may range from manual operation and monitoring to fully automated with computer control and monitoring.
- Reuse systems include disinfestation and filtering equipment.

Assessment guide

*Form of assessment*

The assessor may use the following assessment methods to objectively assess the candidate:

- Observation
- Practical demonstration
- Any written or oral examinations may include questions related

*Assessment context*

- Assessment of this unit must be completed on the job or in a simulated work environment which reflects a range of safe working practices. The assessment environment should not disadvantage the candidate.
- 
- Questioning Competency needs to be holistic and must be demonstrated in a suitable horticulture workplace condition.

UNDERPINNING KNOWLEDGE AND SKILLS

<b>Underpinning Knowledge</b>	<b>Underpinning Skills</b>
A basic working knowledge of: <ul style="list-style-type: none"><li>• methods and techniques of irrigation</li><li>• components of an irrigation system</li><li>• characteristics and operation of joints, valves and sprinkler components</li><li>• operation of pumps and water flow rates</li><li>• behavior of water on varying terrain and soil types</li><li>• soil water retention testing techniques</li><li>• principle and practice in irrigation design</li><li>• water quality and water filtration techniques</li><li>• calculations for installing irrigation systems</li></ul>	An ability to: <ul style="list-style-type: none"><li>• prepare a site according to plans and specifications</li><li>• install irrigation components</li></ul>

**UNIT- 22**

<b>UNIT TITLE</b>	<b>Set out landscape works</b>				
<b>DESCRIPTOR</b>	This Unit of Competency is concerned with the setting out of landscape works from plans and specifications in advance or in conjunction with implementation of planned works. The work is likely to be under routine supervision with intermittent checking. Competency involves the application of knowledge and skills to a range of setting out and installation tasks and roles usually within established enterprise routines.				
<b>CODE</b>	FNA03S2U22V1	<b>LEVEL</b>	4	<b>CREDIT</b>	9

<b>ELEMENTS OF COMPETENCIES</b>	<b>PERFORMANCE CRITERIA</b>
1.Mark out position of works	1.1. Proposed structure is located on site according to site plan dimensions. 1.2 Shape of proposed structure is marked out on ground according to plan dimensions. 1.3 Datum height is established to ensure all features can be linked by survey equipment according to established survey techniques.
2. Establish set-out lines	2.1 Profiles are located with close proximity to site set out to ensure they are not damaged during construction according to site plan. 2.2 Profiles are installed to ensure they remain stable when setout lines are tightened according to established construction techniques. 2.3 Base lines are established according to plan dimensions. 2.4 Building lines are established with corners at 90° and diagonals of equal distance according to size and shape as determined by plan.
3.Establish survey bench marks	3.1. Equipment is prepared and used according to instructions and manufacturers guidelines. 3.2. Levelling equipment is set up and checked for accuracy of readings according to manufacturer's guidelines. 3.3. Instruments which are out of specification are adjusted or reported to nominated person according to enterprise guidelines. 3.4. A temporary bench mark is selected and established on a position/structure according to established surveying techniques.

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	<p>3.5. A temporary bench mark height is established using line levelling techniques according to established surveying practice.</p> <p>3.6. Tools and equipment are cleaned, maintained and stored consistent with manufacturer’s specifications and enterprise guidelines.</p>
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Range statement

- Marking out procedures include application of lime, paint, chipping, pegging, staking.
- Equipment includes tilting levels, automatic levels, line level, spirit level, water level, Cowley level, staffs, boning rods, measuring tapes, claw hammer, sledge hammer.

Assessment guide

*Form of assessment*

The assessor may use the following assessment methods to objectively assess the candidate:

- Observation
- Questioning
- Practical demonstration
- Any written or oral examinations may include questions related.

*Assessment context*

- Assessment of this unit must be completed on the job or in a simulated work environment which reflects a range of safe working practices. The assessment environment should not disadvantage the candidate.
- Competency needs to be holistic and must be demonstrated in a suitable horticulture workplace condition.

UNDERPINNING KNOWLEDGE AND SKILLS

<b>Underpinning Knowledge</b>	<b>Underpinning Skills</b>
<p>A basic working knowledge of:</p> <ul style="list-style-type: none"> <li>• interpretation of landscape plans</li> <li>• mathematical and geometrical principles used in setting out</li> <li>• methods of detecting underground services</li> </ul>	<p>An ability to:</p> <ul style="list-style-type: none"> <li>• mark out position of structures</li> <li>• establish set-out lines</li> <li>• establish survey bench marks</li> </ul>

**UNIT- 23**

UNIT TITLE	Supervise work site activities				
<b>DESCRIPTOR</b>	<p>This Unit of Competency is concerned with the small-scale supervision of projects and work site activities and not general management of people and processes. Responsibility may be for basic coordination and direction of small groups working on a site remote from the enterprise headquarters, small projects or parts of projects, or small areas within the enterprise.</p> <p>The supervision of work site activities is likely to be under limited supervision from above and with checking only related to overall progress. Work site supervision involves the application of horticultural knowledge with depth in some areas and a broad range of horticultural skills. The work is normally done within routines, methods and procedures where some discretion and judgement is required in the selection of equipment, work organisation, services, actions and achieving outcomes within time constraints.</p>				
<b>CODE</b>	FNA03S2U23V1	<b>LEVEL</b>	4	<b>CREDIT</b>	9

<b>ELEMENTS OF COMPETENCIES</b>	<b>PERFORMANCE CRITERIA</b>
1. Prepare project plan	<ol style="list-style-type: none"> <li>1. Requirements of the job are clarified with author and/or works manager.</li> <li>2. Staff, equipment and material resource requirements are specified and time is allocated in conjunction with supervisor.</li> <li>3. The order of activities is specified according to enterprise guidelines.</li> <li>4. Occupational Health &amp; Safety (OHS) legislation, enterprise procedures and site-specific safety requirements are observed.</li> <li>5. The plan is documented clearly and presented to supervisor for verification.</li> </ol>
2. Organize resources for project implementation	<ol style="list-style-type: none"> <li>2.1 Materials are purchased and equipment is hired as authorised by supervisor in conjunction with activities undertaken by management.</li> <li>2.2 External agency permits are gained in the correct order, where required.</li> <li>2.3 Neighbors and affected parties are notified of works to be undertaken when appropriate.</li> <li>2.4 Materials are ordered for delivery on site as required.</li> <li>2.5 Staff are coordinated to be on site when they are required.</li> </ol>

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<p>3. Implement and monitor the project plan</p>	<p>3.1 All resources are prepared and timed to suit the project plan.            3.2 Staff are directed in activities for each period of work.            3.3 Work is undertaken together with staff following documented plan guidelines.            3.4 Staff, activities and resource usage are supervised and are accounted for in the project records.            3.5 Training on the job is provided as required and as appropriate.            3.6 Contingency situations are recognised and appropriate corrective actions are taken to enterprise instructions.</p>
<p>4. Perform site administration</p>	<p>4.1. Management reporting is completed in a timely and accurate manner.            4.2. Decisions are sought from management on important and relevant issues.            4.3. Site administration is monitored to ensure compliance with enterprise procedures.            4.4. A simple project report is written to authorise payment for work and materials and to inform management of project details, where required by enterprise.</p>

Range statement

External agency permits may include noise pollution, waste production and removal, environmental protection.

- Operations may be in all weather conditions, and may be modified by poor weather.
- Project may include small/short term job, part of a larger project.
- Reporting includes completion of enterprise procedures and associated manual or computer-based documentation.
- Staff may be obtained from within the enterprise, “borrowed” from another enterprise, hired from a contracting firm, hired for the project from outside the industry.

Assessment guide

*Form of assessment*

The assessor may use the following assessment methods to objectively assess the candidate:

- Observation
- Questioning
- Practical demonstration
- Any written or oral examinations may include questions related to workplace emergencies such as fire and other dangerous situations and render first aid in the workplace.

Assessment context

- Assessment of this unit must be completed on the job or in a simulated work environment which reflects a range of safe working practices. The assessment environment should not disadvantage the candidate.
- Competency needs to be holistic and must be demonstrated in a suitable horticulture workplace condition.

UNDERPINNING KNOWLEDGE AND SKILLS

Underpinning Knowledge	Underpinning Skills
<p>A basic working knowledge of:</p> <ul style="list-style-type: none"> <li>• application of employment-related legislation and awards</li> <li>• application of legislative requirements, especially in the areas of safety, site management and employment</li> <li>• development and maintenance of effective teamwork</li> <li>• enterprise computing systems</li> <li>• enterprise policies especially in areas of quality, personnel and operations, including EEO target groups</li> <li>• enterprise reporting and recording policies</li> <li>• first line supervision</li> <li>• interpreting and communication of operational information, procedures and instructions, and enterprise policies</li> <li>• management of contingencies and emergencies</li> <li>• operation cost control</li> <li>• operational quality control</li> <li>• operational safety</li> <li>• reporting to enterprise requirements</li> </ul>	<p>An ability to:</p> <ul style="list-style-type: none"> <li>• prepare a project plan</li> <li>• organise resources for project implementation</li> <li>• implement and monitor the project plan</li> <li>• perform site administration</li> </ul>

**UNIT- 24**

<b>UNIT TITLE</b>	<b>Undertake a site assessment</b>				
<b>DESCRIPTOR</b>	<p>This Unit of Competency is concerned with undertaking a site assessment as part of preliminary tasks leading to the development of a landscape design.</p> <p>Undertaking a site assessment is likely to occur under limited supervision from others with checking only related to overall progress. Undertaking a site assessment involves the application of horticultural knowledge with depth in some areas and a broad range of horticultural skills. The provision of information is normally done within routines, methods and procedures where some discretion and judgement is required.</p>				
<b>CODE</b>	FNA03S2U24V1	<b>LEVEL</b>	4	<b>CREDIT</b>	12

<b>ELEMENTS OF COMPETENCIES</b>	<b>PERFORMANCE CRITERIA</b>
1. Survey site features and characteristics	<p>1.1.Existing on-site features and services impacting upon the design proposal is identified and recorded according to enterprise guidelines.</p> <p>1.2 Compass bearings are identified and magnetic north Recorded.</p> <p>1.3 Direction of prevailing weather conditions are ascertained from historical data.</p> <p>1.4 General falls and contours are visually identified and recorded according to recognized land surveying techniques.</p> <p>1.5 Covenants which could affect the design are identified and recorded according to enterprise guidelines.</p> <p>1.6 Features adjacent to the site which could be used to enhance the design are identified and recorded.</p> <p>1.7 Site boundaries are measured and shape of site determined and recorded according to recognised land surveying techniques.</p> <p>1.8 Site inventory report is produced according to enterprise guidelines</p>
2. Conduct a soil analysis	2.1 Soil profile examination holes are excavated to the prescribed depth and to the designated spacings according to enterprise guidelines.

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	<p>2.2 Horizon levels within the examination holes are noted according to soil identification reference chart guidelines.</p> <p>2.3 Soil samples for testing by others are gathered and prepared according to test kit instructions.</p> <p>2.4 Soil types are identified from soil identification reference chart guidelines and soil maps.</p>
3. Record survey levels	<p>3.1 The assumed datum is located and height calculated and recorded using ‘rise and fall’ or similar survey techniques.</p> <p>3.2 Line levelling techniques are applied to plot and record levels at corners and random points across site according to recognised land surveying techniques.</p> <p>3.3 Relationship between site levels and adjacent levels are calculated and recorded according to enterprise guidelines.</p> <p>3.4 Grid layout plan of site is produced from field notes with all features relevant to the design noted and recorded according to recognised land surveying techniques.</p>

Range statement

- Site inventory factors include topography, vegetation, hydrology, services and amenities, buildings and structures, access, soil types, site modifications, fauna, location of boundaries, aspect, streams, paths, banks, gullies.

Assessment guide

*Form of assessment*

The assessor may use the following assessment methods to objectively assess the candidate:

- Observation
- Questioning
- Practical demonstration
- Any written or oral examinations may include questions related to workplace emergencies such as fire and other dangerous situations and render first aid in the workplace.

*Assessment context*

- Assessment of this unit must be completed on the job or in a simulated work environment which reflects a range of safe working practices. The assessment environment should not

- Competency needs to be holistic and must be demonstrated in a suitable horticulture workplace condition.

#### UNDERPINNING KNOWLEDGE AND SKILLS

<b>Underpinning Knowledge</b>	<b>Underpinning Skills</b>
A basic working knowledge of: <ul style="list-style-type: none"><li>• types, application and uses of surveying equipment</li><li>• principles of line levelling techniques</li><li>• methods of analysing condition and nutritional status of soil</li><li>• principles and theory of landscape design</li></ul>	An ability to: <ul style="list-style-type: none"><li>• undertake a site assessment</li><li>• conduct a soil analysis</li><li>• record survey levels</li></ul>

**UNIT- 25**

<b>UNIT TITLE</b>	<b>Install concrete structures and features</b>				
<b>DESCRIPTOR</b>	<p>This Unit of Competency is concerned with the installation of concrete structures and features as a component of landscape project works.</p> <p>The installation of concrete structures and features is likely to be under limited supervision from others with checking only related to overall progress. The work involves the application of horticultural knowledge with depth in some areas and a broad range of horticultural skills. The installation of concrete structures and features is normally done within routines, methods and procedures where some discretion and judgement is required in the selection of equipment, work organisation, services, actions and achieving outcomes within time constraints.</p>				
<b>CODE</b>	FNA03S2U25V1	<b>LEVEL</b>	4	<b>CREDIT</b>	12

<b>ELEMENTS OF COMPETENCIES</b>	<b>PERFORMANCE CRITERIA</b>
1. Set out landscape works	<p>1.1 The position of specified landscape features is marked out as outlined in plans and specifications.</p> <p>1.2 Profiles are established to conform with plan and specification details and to the tolerances designated by supervisor and/or plan details.</p> <p>1.3 Survey bench marks, datums and TBM are established according to plan details.</p> <p>1.4 On-site services and utilities are located from data provided by appropriate authorities</p> <p>1.5 Waste and debris is removed and unused materials are stacked to provide a safe working area.</p>
2. Prepare a site for concrete	<p>2.1 The subsoil is prepared by removing all debris, vegetable matter and top soil to provide a solid foundation for concrete.</p> <p>2.2 Drainage provisions are installed according to plan details.</p> <p>2.3 Form work is installed to site within nominated tolerances in a manner which will ensure that it remains rigid during concrete placement operations.</p> <p>2.4 Sub-base material is installed to site and the area is</p>

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	<p>compacted to the specified level and to a consistency which will ensure that the material does not consolidate during the concrete placement.</p> <p>2.5 Waterproof membrane is installed to area, when required, according to manufacturer’s guidelines.</p> <p>2.6 Reinforcement is cut, placed and tied to the area according to plan details and industry standards (AS1554.3).</p> <p>2.7 Release agent is applied to form work according to manufacturers specifications.</p>
<p>3. Mix concrete for a landscape project</p>	<p>3.1 Volume of concrete required for project is calculated.</p> <p>3.2 Proportions for concrete mix are determined according to the strength requirements of the project.</p> <p>3.3 Volume of dry materials necessary to produce final concrete mix are determined.</p> <p>3.4 All dry ingredients are mixed together to ensure a thorough blending of all materials is achieved.</p> <p>3.5 Sufficient water is introduced to produce a plastic concrete mix after making allowances for damp aggregates.</p> <p>3.6 Equipment is cleaned on completion to ensure equipment can be immediately used when next required.</p>
<p>4. Place and finish concrete</p>	<p>4.1 Any faults are checked and rectified prior to placing concrete including: form work stability, reinforcement placement, screeding point positions, debris removal.</p> <p>4.2 Release agent is applied to form work to facilitate ease of removal when concrete has hardened.</p> <p>4.3 The appropriate method of transporting concrete to minimise segregation of materials is identified and used.</p> <p>4.4 A concrete slump test is undertaken and samples are taken for tests to check for conformity to specifications where required.</p> <p>4.5 Concrete is placed to designated levels in a manner to avoid segregation of materials.</p> <p>4.6 Concrete is consolidated using an approved vibration method to industry standard (AS3600) to ensure air pockets are eliminated.</p>

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	<p>4.7 Concrete is screeded to a flat surface to maintain the desired finished level.</p> <p>4.8 Surface is prepared to ensure a non-slip finish.</p> <p>4.9 An appropriate curing agent/method is provided to ensure the concrete attains the desired strength.</p> <p>4.10 Equipment is cleaned on completion to ensure equipment can be immediately used when next required.</p>
<p>5. Remove form work from concrete</p>	<p>5.1 Form work is removed without damaging concrete surfaces in a manner which will allow for re-use of the form work.</p> <p>5.2 Nails are removed from form work without damage to components.</p> <p>5.3 All debris is cleaned from form work for next usage and all components are correctly stored and stacked in a safe manner.</p>

Range statement

- Concrete structures and features may include paths, footings, edgings, floors, decking, boardwalks, ornamental garden elements.

Tools, equipment and materials required may include:

- Relevant procedure manuals

Assessment guide

*Form of assessment*

The assessor may use the following assessment methods to objectively assess the candidate:

- Observation
- Questioning
- Practical demonstration
- Any written or oral examinations may include questions related to workplace emergencies such as fire and other dangerous situations and render first aid in the workplace.

*Assessment context*

- Assessment of this unit must be completed on the job or in a simulated work environment which reflects a range of safe working practices. The assessment environment should not disadvantage the candidate.
- Competency needs to be holistic and must be demonstrated in a suitable horticulture

**UNDERPINNING KNOWLEDGE AND SKILLS**

<b>Underpinning Knowledge</b>	<b>Underpinning Skills</b>
A basic working knowledge of: <ul style="list-style-type: none"><li>• setting out landscape works</li><li>• concrete construction techniques</li><li>• legislation regarding footings and foundations</li><li>• concrete properties and characteristics</li><li>• hand tools and equipment use and operation</li></ul>	An ability to: <ul style="list-style-type: none"><li>• set out landscape works</li><li>• prepare a site for concrete</li><li>• mix concrete for a landscape project</li><li>• place and finish concrete</li><li>• remove form work from concrete</li></ul>

**UNIT- 26**

<b>UNIT TITLE</b>	<b>Install timber structures and features</b>				
<b>DESCRIPTOR</b>	This Unit of Competency is concerned with the installation of timber structures and features as a component of landscape project works. The installation of timber structures and features is likely to be under limited supervision from others with checking only related to overall progress. The work involves the application of horticultural knowledge with depth in some areas and a broad range of horticultural skills. The installation of timber structures and features is normally done within routines, methods and procedures where some discretion and judgement is required in the selection of equipment, work organisation, services, actions and achieving outcomes within time constraints.				
<b>CODE</b>	FNA03S2U26V1	<b>LEVEL</b>	4	<b>CREDIT</b>	12

<b>ELEMENTS OF COMPETENCIES</b>	<b>PERFORMANCE CRITERIA</b>
1. Plan and prepare works	1.1 Materials and quantities are determined from job drawings and specifications. 1.2 Appropriate personal protective equipment is selected and fitted according to Occupational Health & Safety (OHS) requirements. 1.3 Tools and equipment are selected and checked for serviceability according to enterprise guidelines. 1.4 Materials are checked for quality to ensure they are free of defects and conform to the specification details.
2. Set out the works	2.1 All obstructions to the construction programs are identified and removed to ensure the works can proceed uninterrupted. 2.2 Site access and storage areas are identified to ensure works can proceed in an orderly manner according to enterprise guidelines. 2.3 The position of structure is marked out according to job drawing details. 2.4 The structure is set out to tolerances nominated within specifications. 2.5 Safety signage and barriers are erected to ensure safety of

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	<p>all persons within the construction area.</p> <p>2.6 Footings are excavated and prepared according to job drawings and specifications.</p> <p>2.7 Components are prepared for assembly to the design requirements contained in the job drawings and specifications.</p> <p>2.8 The length of components and the positions of cuts marked out if applicable to designated requirement details contained in job drawings.</p> <p>2.9 Material is cut accurately allowing for overhang where applicable.</p>
3. Assemble and erect structure	<p>3.1 Initial components are located into position and fixed into place according to specification details.</p> <p>3.2 Temporary bracing is fixed where required to maintain stability of components during construction.</p> <p>3.3 The remaining components are installed and fixed into position according to job drawings and specifications.</p> <p>3.4 All overhangs are cut off and the finished structure completed according to job drawing and specifications</p>
4. Apply coatings to finished structure	<p>4.1 Personal protective equipment is selected and fitted according to Occupational Health &amp; Safety (OHS) requirements.</p> <p>4.2 Tools and equipment are selected and checked for serviceability in line with enterprise standards.</p> <p>4.3 Safety signage and barriers are set up to ensure the safety of all persons within the area.</p> <p>4.4 Paint cloths are placed to protect the surroundings.</p> <p>4.5 Preparation of all components is undertaken according to specifications and manufacturers guidelines.</p> <p>4.6 Paint is applied, as specified by the manufacturer, ensuring complete coverage and evenness of application.</p> <p>4.7 Tools and equipment are cleaned up to ensure that immediate use is possible when next required.</p> <p>4.8 Waste is disposed of to ensure the environment is not adversely affected according to regulatory requirements.</p>
5. Undertake a site commissioning	<p>5.1 All mechanical features are checked and adjusted to ensure that they operate according to the manufacturers specifications.</p> <p>5.2 Quality of finished works are inspected to ensure the standard of the finished product is according to the plans</p>

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	and specifications.
6.Clean up site and store all tools and equipment	6.1 Debris is cleaned from structure and site according to specifications details. 6.2 Waste material is disposed of safely without adversely impacting upon the environment. 6.3 Unused material is stored and stacked for future re-use according to job instructions. 6.4 Tools and equipment are cleaned and stored according to job instructions.

Range statement

- Timber structures and features includes fences, pergolas, trellises, lattices, gazebos, small bridges, handrails, decking, boardwalks, screens, seats, site furniture, bollards, car barriers.

Assessment guide

*Form of assessment*

The assessor may use the following assessment methods to objectively assess the candidate:

- Observation
- Questioning
- Practical demonstration
- Any written or oral examinations may include questions related

*Assessment context*

- Assessment of this unit must be completed on the job or in a simulated work environment which reflects a range of safe working practices. The assessment environment should not disadvantage the candidate.
- Competency needs to be holistic and must be demonstrated in a suitable horticulture workplace condition.

**UNDERPINNING KNOWLEDGE AND SKILLS**

<b>Underpinning Knowledge</b>	<b>Underpinning Skills</b>
A basic working knowledge of: <ul style="list-style-type: none"> <li>• setting out landscape works</li> <li>• timber construction techniques</li> <li>• legislation regarding construction of structures</li> <li>• timber properties and characteristics</li> <li>• hand tools and equipment use and operation</li> </ul>	An ability to: <ul style="list-style-type: none"> <li>• plan and prepare works</li> <li>• set out the works</li> <li>• assemble and erect structure</li> <li>• apply coatings to finished structure</li> <li>• undertake a site commissioning</li> <li>• clean up site and store all tools and equipment</li> </ul>

**UNIT- 27**

<b>UNIT TITLE</b>	<b>Install brick structures and features</b>				
<b>DESCRIPTOR</b>	This Unit of Competency is concerned with the installation of brick structures and features as a component of landscape project works. The installation of brick structures and features is likely to be under limited supervision from others with checking only related to overall progress. The work involves the application of horticultural knowledge with depth in some areas and a broad range of horticultural skills. The installation of brick structures and features is normally done within routines, methods and procedures where some discretion and judgement is required in the selection of equipment, work organisation, services, actions and achieving outcomes within time constraints.				
<b>CODE</b>	FNA03S2U27V1	<b>LEVEL</b>	4	<b>CREDIT</b>	12

<b>ELEMENTS OF COMPETENCIES</b>	<b>PERFORMANCE CRITERIA</b>
1. Set out landscape works	<p>1.1 The position of specified landscape features is marked out as outlined in plans and specifications.</p> <p>1.2 Profiles are established to conform with plan and specification details and to the tolerances designated by supervisor and/or plan details.</p> <p>1.3 Survey bench marks, datums and TBM are established according to plan details.</p> <p>1.4 On-site services and utilities are located from data provided by appropriate authorities</p> <p>1.5 Waste and debris is removed and unused materials are stacked to provide a safe working area.</p>
2. Set out brickwork or block work for a small landscape project	<p>2.1 The finished level of structure is determined according to plans and specifications.</p> <p>2.2 Profile is set to required levels to ensure plumb and level finishes are achieved.</p> <p>2.3 String lines are set to profiles to ensure straight and level courses are achieved.</p>
3. Construct a brickwork or block work structure for a small landscape project	<p>3.1 Mortar is mixed to determined ratio and appropriate admixes and coloring agents are applied to ensure plasticity of mix during laying operations.</p>

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	<p>3.2 Damp proofing and base course of brickwork is laid below ground level according to specifications.</p> <p>3.3 Courses of brickwork laid using designated bond/s in a manner which will ensure the viability and stability of the structure.</p>
<p>4. Clean up brickwork and site</p>	<p>4.1 Brickwork surface are cleaned down using chemicals of sufficient strength to remove all debris without damage to the mortar and bricks.</p> <p>4.2 Site is cleaned up and all tools and equipment are stored according to enterprise requirements.</p> <p>4.3 Debris from structure and site is removed according to specifications details.</p> <p>4.4 Waste material is disposed of safely without adversely impacting upon the environment.</p> <p>4.5 Unused material is stored and stacked for future re-use according to job instructions.</p> <p>4.6 Tools and equipment are cleaned and stored according to job instructions.</p>

Range statement

- Brick and block structures include paving, paths, edging, walls, retaining walls, barriers, ornamental garden features.

Assessment guide

*Form of assessment*

The assessor may use the following assessment methods to objectively assess the candidate:

- Observation
- Questioning
- Practical demonstration
- Any written or oral examinations may include questions related

*Assessment context*

- Assessment of this unit must be completed on the job or in a simulated work environment which reflects a range of safe working practices. The assessment environment should not disadvantage the candidate.
- Competency needs to be holistic and must be demonstrated in a suitable horticulture workplace condition.

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**UNDERPINNING KNOWLEDGE AND SKILLS**

<b>Underpinning Knowledge</b>	<b>Underpinning Skills</b>
A basic working knowledge of: <ul style="list-style-type: none"><li>• setting out landscape works</li><li>• brick and block construction techniques</li><li>• legislation regarding construction of brick and block structures</li><li>• properties and characteristics of bricks, blocks and associated materials</li><li>• hand tools and equipment use and operation</li></ul>	An ability to: <ul style="list-style-type: none"><li>• set out landscape works</li><li>• set out brickwork or block work for a small landscape project</li><li>• construct a brickwork or block work structure for a small landscape project</li><li>• clean up brickwork and site</li><li>• setting or other specified setting.</li></ul>

**UNIT- 28**

<b>UNIT TITLE</b>	<b>Install masonry structures and features</b>				
<b>DESCRIPTOR</b>	<p>This Unit of Competency is concerned with the installation of masonry structures and features as a component of landscape project works.</p> <p>The installation of masonry structures and features is likely to be under limited supervision from others with checking only related to overall progress. The work involves the application of horticultural knowledge with depth in some areas and a broad range of horticultural skills. The installation of masonry structures and features is normally done within routines, methods and procedures where some discretion and judgement is required in the selection of equipment, work organisation, services, actions and achieving outcomes within time constraints.</p>				
<b>CODE</b>	FNA03S2U28V1	<b>LEVEL</b>	4	<b>CREDIT</b>	12

<b>ELEMENTS OF COMPETENCIES</b>	<b>PERFORMANCE CRITERIA</b>
1. Set out landscape	<p>1.1 The position of specified landscape features are marked out as outlined in plans and specifications.</p> <p>1.2 Profiles are established to conform with plan and specification details and to the tolerances designated by supervisor and/or plan details.</p> <p>1.3 Survey bench marks, datums and TBM are established according to plan details.</p> <p>1.4 On-site services and utilities are located from data provided by appropriate authorities.</p> <p>1.5 Waste and debris is removed and unused materials are stacked to provide a safe working area.</p>
2. Prepare site for masonry construction	<p>2.1 The site is prepared by removing all debris, vegetable matter and top soil to provide a solid foundation for masonry.</p> <p>2.2 Drainage provisions are installed according to plan details.</p> <p>2.3 Sub-base material is installed on site and the area compacted to the specified level and to a consistency which will ensure that the material does not consolidate during the masonry work.</p>

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	.2.4 Irrigation and drainage systems are prepared and installed according to plans and specifications.
3. Install masonry	3.1 Masonry work is installed according to plans and specifications. 3.2 Keystones are installed according to plans and specifications. 3.3 Levels are checked regularly during construction. 3.4 Site is made good at completion of works according to enterprise standards.

Range statement

- Masonry structures include paving, paths, edging, walls, retaining walls, barriers, ornamental garden features.

Tools, equipment and materials required may include:

- Relevant procedure manuals

Assessment guide

*Form of assessment*

The assessor may use the following assessment methods to objectively assess the candidate:

- Observation
- Questioning
- Practical demonstration
- Any written or oral examinations may include questions related to workplace emergencies such as fire and other dangerous situations and render first aid in the workplace.

*Assessment context*

- Assessment of this unit must be completed on the job or in a simulated work environment which reflects a range of safe working practices. The assessment environment should not disadvantage the candidate.
- Competency needs to be holistic and must be demonstrated in a suitable horticulture workplace condition.

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**UNDERPINNING KNOWLEDGE AND SKILLS**

<b>Underpinning Knowledge</b>	<b>Underpinning Skills</b>
A basic working knowledge of: <ul style="list-style-type: none"><li>• setting out landscape works</li><li>• masonry construction techniques</li><li>• legislation regarding construction of masonry structures</li><li>• properties and characteristics of masonry materials</li><li>• hand tools and equipment use and operation</li></ul>	An ability to: <ul style="list-style-type: none"><li>• set out landscape works</li><li>• prepare site for masonry construction</li><li>• install masonry</li></ul>

**UNIT- 29**

<b>UNIT TITLE</b>	<b>Install metal structures and features</b>				
<b>DESCRIPTOR</b>	This Unit of Competency is concerned with the installation of metal structures and features as a component of landscape project works. The installation of metal structures and features is likely to be under limited supervision from others with checking only related to overall progress. The work involves the application of horticultural knowledge with depth in some areas and a broad range of horticultural skills. The installation of metal structures and features is normally done within routines, methods and procedures where some discretion and judgement is required in the selection of equipment, work organisation, services, actions and achieving outcomes within time constraints.				
<b>CODE</b>	FNA03S1U20V1	<b>LEVEL</b>	3	<b>CREDIT</b>	

<b>ELEMENTS OF COMPETENCIES</b>	<b>PERFORMANCE CRITERIA</b>
1. Plan and prepare works	1.1 Materials and quantities are determined from job drawings and specifications. 1.2 Appropriate personal protective equipment is selected and fitted according to Occupational Health & Safety (OHS) requirements. 1.3 Tools and equipment are selected and checked for serviceability according to enterprise guidelines. 1.4 Materials are checked for quality to ensure they are free of defects and conform to the specification details.
2. Set out the works	2.1 All obstructions to the construction programs are identified and removed to ensure the works can proceed uninterrupted. 2.2 Site access and storage areas are identified to ensure works can proceed in an orderly manner according to enterprise guidelines. 2.3 The position of structure is marked out according to job drawing details. 2.4 The structure is set out to tolerances nominated within specifications.

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	<p>2.5 Safety signage and barriers are erected to ensure safety of all persons within the construction area.</p> <p>2.6 Footings are excavated and prepared according to job drawings and specifications.</p> <p>.2.7 Components are prepared for assembly to the design requirements contained in the job drawings and specifications.</p> <p>2.8 The length of components and the positions of cuts marked out if applicable to designated requirement details contained in job drawings.</p> <p>.2.9 Material is cut accurately allowing for overhang where applicable.</p>
<p>3. Assemble and erect structure</p>	<p>3.1 Initial components are located into position and fixed into place according to specification details.</p> <p>.3.2 Temporary bracing is fixed where required to maintain stability of components during construction.</p> <p>3.3 The remaining components are installed and fixed into position according to job drawings and specifications.</p> <p>3.4 All overhangs are cut off and the finished structure completed according to job drawing and specifications</p>
<p>4. Apply coatings to finished structure</p>	<p>4.1 Personal protective equipment is selected and fitted according to Occupational Health &amp; Safety (OHS) requirements.</p> <p>4.2 Tools and equipment are selected and checked for serviceability.</p> <p>4.3 Safety signage and barriers are set up to ensure the safety of all persons within the area.</p> <p>4.4 Paint cloths are placed to protect the surroundings.</p> <p>4.5 Preparation to all components is undertaken according to specifications and manufacturers guidelines.</p> <p>4.6 Paint is applied, as specified by the manufacturer, ensuring complete coverage and evenness of application.</p> <p>4.7 Tools and equipment are cleaned up to ensure that immediate use is possible when next required.</p> <p>4.8 Waste is disposed of to ensure the environment is not adversely affected according to regulatory requirements.</p>
<p>5.Undertake a site commissioning</p>	<p>5.1 All mechanical features are checked and adjusted to ensure</p>

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	<p>that they operate according to the manufacturers specifications.</p> <p>5.2 Quality of finished works are inspected to ensure the standard of the finished product is according to the plans and specifications.</p>
6.Clean up site and store all tools and equipment	<p>6.1 Debris is cleaned from structure and site according to specifications details.</p> <p>6.2 Waste material is disposed of safely without adversely impacting upon the environment.</p> <p>6.3 Unused material is stored and stacked for future re-use according to job instructions.</p> <p>6.4 Tools and equipment are cleaned and stored according to job instructions.</p>

Range statement

- Metal structures and features includes fences, pergolas, trellises, handrails, screens, seats, site furniture, bollards, playground equipment, rubbish bins, sculptures and artworks.

Assessment guide

*Form of assessment*

The assessor may use the following assessment methods to objectively assess the candidate:

- Observation
- Questioning
- Practical demonstration
- Any written or oral examinations may include questions related Assessment context
- Assessment of this unit must be completed on the job or in a simulated work environment which reflects a range of safe working practices. The assessment environment should not disadvantage the candidate.
- Competency needs to be holistic and must be demonstrated in a suitable horticulture

### UNDERPINNING KNOWLEDGE AND SKILLS

<b>Underpinning Knowledge</b>	<b>Underpinning Skills</b>
A basic working knowledge of: <ul style="list-style-type: none"><li>• setting out landscape works</li><li>• metal assembling and construction techniques</li><li>• legislation regarding construction of structures</li><li>• metal properties and characteristics</li><li>• hand tools and equipment use and operation</li></ul>	An ability to: <ul style="list-style-type: none"><li>• plan and prepare works</li><li>• set out the works</li><li>• assemble and erect structure</li><li>• apply coatings to finished structure</li><li>• undertake a site commissioning</li><li>• clean up site and store all tools and equipment</li></ul>

**UNIT- 30**

<b>UNIT TITLE</b>	<b>Install water features</b>				
<b>DESCRIPTOR</b>	This Unit of Competency is concerned with the installation of water features such as waterfalls, ponds, waterways and fountains. The installation of water features is likely to be under limited supervision from others with checking only related to overall progress. Installation involves the application of horticultural knowledge with depth in some areas and a broad range of horticultural skills. The installation of water features is normally done within routines, methods and procedures where some discretion and judgement is required.				
<b>CODE</b>	FNA03S2U30V1	<b>LEVEL</b>	4	<b>CREDIT</b>	12

<b>ELEMENTS OF COMPETENCIES</b>	<b>PERFORMANCE CRITERIA</b>
1. Plan and prepare work	<p>1.1 Materials and quantities required are determined from job drawings and specifications.</p> <p>1.2 Personal protective equipment is selected and fitted according to Occupational Health &amp; Safety (OHS) requirements.</p> <p>1.3 Tools and equipment are selected and checked to ensure they are suitable for the job to be undertaken.</p> <p>1.4 Quality of materials is checked to ensure they are free of defects and conform to the specifications details.</p> <p>1.5 The exact location and depth of excavations is determined from site plans and drawings.</p>
2. Set out and prepare for construction	<p>2.1 Components are located into position and fixed into place according to specification details.</p> <p>2.2 Temporary bracings are fixed where required, to maintain stability of components during construction.</p>
3. Excavate and remove soil	<p>3.1 Site is excavated to the shape, depth and dimensions according to job drawings and specifications.</p> <p>3.2 Sumps are constructed to specified levels and locations when required according to job specifications.</p> <p>3.3 Drainage systems are constructed according to job drawings and specifications.</p>

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	<p>3.4 Bedding material is placed and compacted to the required finished level according to job drawings and specifications.</p> <p>3.5 Soil and waste material is stockpiled and removed from the site according to directions.</p>
4. Construct water features	<p>4.1 A waterproof membrane is installed according to job drawings, specifications and manufacturers specifications.</p> <p>4.2 All accessories to structure are installed according to job drawings and manufacturers specifications.</p> <p>4.3 The structure is filled with water, tested for leaks and any detected leaks are repaired.</p>
5. Undertake a site commissioning	<p>5.1 All mechanical features are checked and adjusted to ensure they operate according to manufacturers specifications.</p> <p>5.2 The quality of finished works is inspected to ensure the standards of the work is according to the job drawings and specifications.</p> <p>5.3 All non-conforming items are rectified according to job drawings and specifications.</p>
6. Clean up site and store all tools and equipment	<p>6.1 Debris is cleaned from structure and site according to specification details.</p> <p>6.2 Waste material is disposed of safely without adversely impacting upon the environment.</p> <p>6.3 Unused material is stored and stacked for future re-use according to job instructions.</p> <p>6.4 All tools and equipment are cleaned and stored according to job instructions.</p> <p>6.5 Water is treated to remove or neutralise contaminants resulting from construction works.</p>

Range statement

- Water features include waterfalls, ponds, waterways and fountains.
- Accessories includes pumps, pipes, ornamental features, plant materials, timber structures, site furniture.

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Tools, equipment and materials required may include:

- Relevant procedure manuals

Assessment guide

*Form of assessment*

The assessor may use the following assessment methods to objectively assess the candidate:

- Observation
- Questioning
- Practical demonstration
- Any written or oral examinations may include questions related to workplace emergencies such as fire and other dangerous situations and render first aid in the workplace.

*Assessment context*

- Assessment of this unit must be completed on the job or in a simulated work environment which reflects a range of safe working practices. The assessment environment should not disadvantage the candidate.
- Competency needs to be holistic and must be demonstrated in a suitable horticulture workplace condition.

**UNDERPINNING KNOWLEDGE AND SKILLS**

<b>Underpinning Knowledge</b>	<b>Underpinning Skills</b>
A basic working knowledge of: <ul style="list-style-type: none"><li>• setting out landscape works</li><li>• water feature construction techniques</li><li>• legislation regarding water use, recycling and safety in public places</li><li>• pumping systems and components associated with water features</li><li>• hand tools and equipment use and operation</li></ul>	An ability to: <ul style="list-style-type: none"><li>• plan and prepare work</li><li>• set out and prepare for construction</li><li>• excavate and remove soil</li><li>• construct/install water features</li><li>• undertake a site commissioning</li><li>• cleanup site and store all tools and equipment</li></ul>